APPENDIX A:
NOTICE OF PREPARATION AND SCOPING COMMENTS

County of Alameda
Notice of Preparation – Environmental Impact Report

Date: **January 11, 2019**

To: State Clearinghouse
State Responsible Agencies
State Trustee Agencies
Other Public Agencies
Interested Organizations and Parties

From: Damien Curry, Planner III
Alameda County
Planning Department
224 W. Winton Avenue, Room 111
Hayward CA, 94544

Subject:	**Notice of Preparation (NOP) of the Draft Environmental Impact Report (EIR) for the Livermore Community Solar Farm Project**
Lead Agency:	Alameda County Planning Department
Project Title:	PLN2016-00049; Livermore Community Solar Farm Project
Project Location:	Alameda County (see Figure 1 – Regional and Vicinity Map)

Notice is hereby given that the County of Alameda (County) will be the Lead Agency and will prepare a project-level EIR for the Livermore Community Solar Farm Project (proposed project) pursuant to the California Environmental Quality Act (CEQA) Guidelines (14 California Code of Regulations Section 15060(d)). The EIR is being prepared by the County in accordance with applicable law, in particular, CEQA and the State of California CEQA Guidelines.

The County has determined that a Draft EIR will be prepared for the Livermore Community Solar Farm Project. An EIR is a detailed statement prepared under CEQA describing and analyzing the significant environmental effects of a project. For any identified potentially significant environmental impacts, the EIR will identify mitigation measures to avoid or reduce those impacts, as feasible. The EIR also will discuss a reasonable range of alternatives to the project that could reasonably attain most of the basic objectives of the project and would avoid or substantially lessen any of the significant environmental effects of the project (CEQA Guidelines section 15126.6(a)).

The County is requesting comments on the scope and content of the EIR from public agencies and the public. The County would like to know the views of your agency as to the scope and content of the environmental information germane to your agency's statutory responsibilities in connection with the proposed project.

You are encouraged to email your comments to damien.curry@acgov.org with "Livermore Community Solar Farm EIR" as the subject. As an alternative, you may submit written comments to the following address:

Alameda County, Planning Department
Attention: Damien Curry, Planner III
224 W. Winton Avenue, Room 111
Hayward, CA 94544

If you submit comments on the scope and content of the EIR, you will automatically be added to the County's distribution list for future notices and information about the environmental review process for the project. If you do not wish to submit comments on the scope of the EIR, but would like to receive updates on the project, please submit your mailing address to receive mailed notices.

A **Public EIR Scoping Meeting** will be held to receive comments regarding the scope and content of the EIR on **Tuesday, January 29, 2019 from 6:00 to 8:00 p.m**. at the **Zone 7 Water Agency public hearing room, 100 N Canyons Pkwy, Livermore, CA 94551**. Due to the time limits mandated by state law, your comments on the NOP are due no later than the close of the 30-day review period at **4:30 p.m. on Monday, February 11, 2019**.

The proposed project, its location, and potential effects are described on the following pages.

Introduction

The purpose of an Environmental Impact Report (EIR) is to inform decision makers and the public of the significant environmental effects of a proposed project. The EIR process is intended to provide environmental information sufficient to evaluate a project and its potential for significant effects on the environment; discuss methods of reducing or avoiding adverse environmental impacts; and consider alternatives to the project. Prior to taking any action on the proposed Livermore Community Solar Farm Project, the Planning Commission must, at a public hearing, certify that the EIR has been completed in compliance with CEQA, and reflects the independent judgment of the County.

Proposed Project

The proposed project would develop a 58.7-acre solar photovoltaic (PV) facility with a capacity of 6 megawatt (MW) alternating current (AC) on the 71.64-acre parcel located at 4871 North Livermore Avenue in Alameda County (Figure 1).[1,2] Construction of the proposed project is expected to occur in two phases over a one-year period. Phase I would be located on the southern portion of the project site adjacent to May School Road, with an area of 30.8 acres. Phase 2 would be located on the northern portion of the project site adjacent to North Livermore Avenue, encompassing 27.9 acres. Water for project operation and irrigation would be obtained from a fire hydrant located approximately 2.8 miles southeast of the project site at the corner of Ames Street and Martingale Lane in the City of Livermore. All water would be delivered to the project site via a 5,000-gallon water truck to replenish onsite subsurface water tanks dedicated for this purpose; no connections to municipal water or sewer service are proposed, nor would any on-site wells be utilized. The project would include the eventual decommissioning and removal of the facility, and would not require a change in General Plan land use designation or Zoning.

Probable Environmental Effects of the Project

An Initial Study was prepared pursuant to CEQA and circulated for public review and comment from September 6, 2018 to October 8, 2018. The Initial Study is available for review at two locations for the Alameda County Planning Department:

Alameda County Planning Department
224 W. Winton Avenue, Room 111
Hayward, CA 94544

Martinelli Center
3585 Greenville Road
Livermore, CA 94550

In addition, the document may be downloaded from the on the Alameda County Planning Department website: http://www.acgov.org/cda/planning/landuseprojects/documents/LivermoreCommunitySolarFarm_InitalStudy.pdf. Based on the conclusions in the Initial Study and comments received on the Initial Study, the probable environmental effects of the project in the following environmental topic areas will be analyzed in the EIR. For the remaining environmental topic areas, the Initial Study concluded that the impacts would be less than significant.

- **Aesthetics**. The EIR will describe the potential aesthetic impacts regarding light and glare, impact on scenic resources and view from scenic vistas.
- **Agriculture**. The EIR will discuss agricultural uses on the project site, as well as proposed agricultural uses, and their compliance with the Williamson Act.
- **Air Quality**. The EIR will describe the regional air quality conditions of the San Francisco Bay Area and will evaluate air quality impacts to and from the project, in conformance with the criteria identified by the Bay Area Air Quality Management District. The project's consistency with 2017 Bay Area Clean Air Plan will also se discussed.
- **Biological Resources.** The Biological Resources chapter of the EIR will assess potential impacts to protected and endangered species known or suspected to exist onsite, as well as potential impacts to nesting birds that may be present.
- **Cultural Resources.** The EIR will describe the potential archaeological and paleontological resources, in addition to human remains that could be present on the project site. The EIR will evaluate the potential for the project to impact historic and pre-historic resources that could be unearthed during project construction.

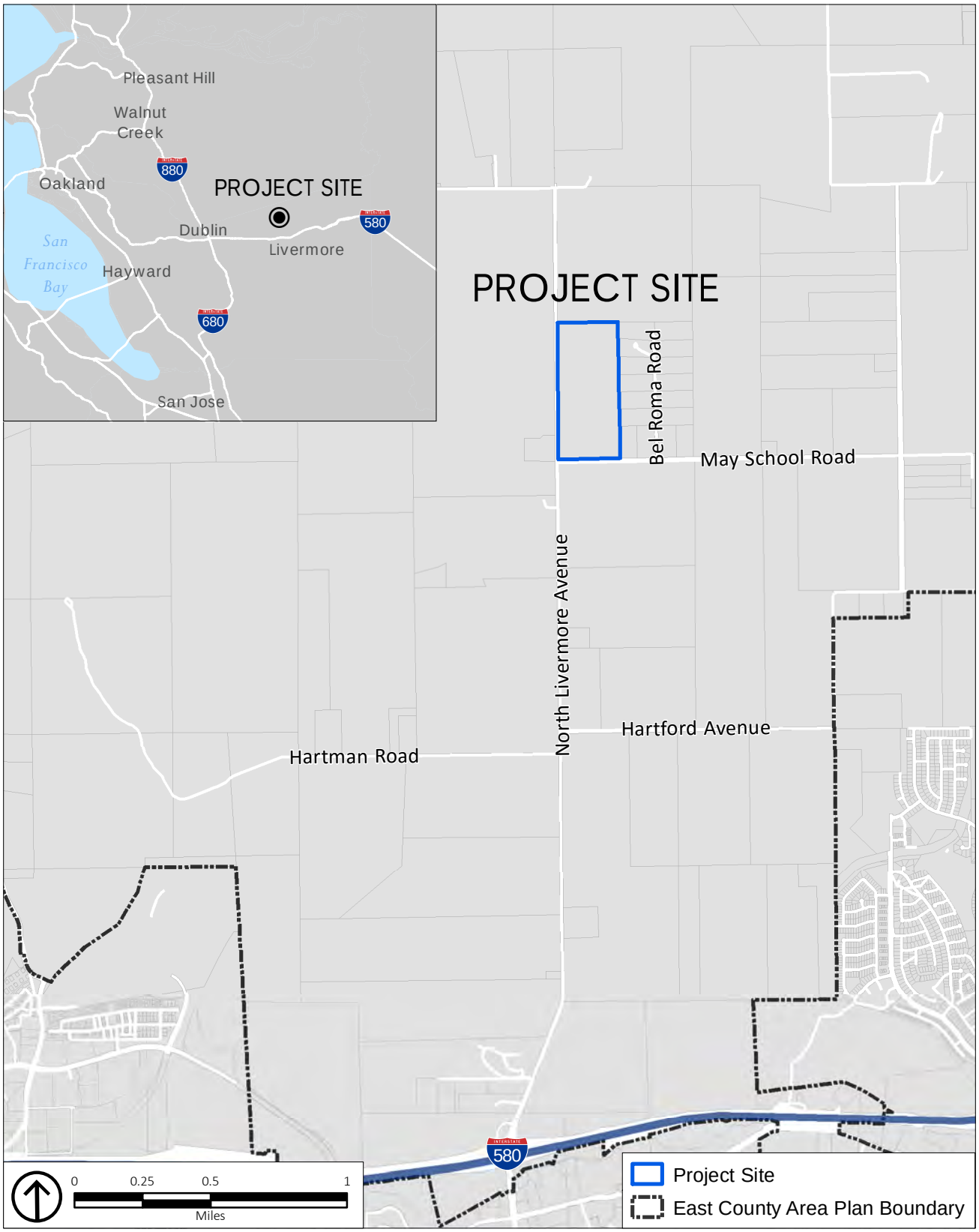
[1] The capacity of the system would be 6.0 Megawatts (MW) which means the power output at peak performance would be 6.0 MW.

[2] Alternating current is the form in which electric power is delivered to businesses and residences, and it is the form of electrical energy that consumers typically use.

- **Tribal Cultural Resources.** No known tribal cultural resources are located on the project site; however, the potential to unearth unknown remains during ground disturbing activities associated with the construction of the project could occur. The EIR will evaluate the potential for the project to impact sites, features, place, or cultural landscaping with cultural value to a California Native American Tribe.
- **Land Use and Planning.** The EIR will discuss any conflicts with local land use plans, policies, or regulations, as well as any conflicts regarding dividing an established community or any applicable conservation plan.
- **Noise.** The principal noise sources that may occur as a result of the proposed project are from construction activity and from the proposed water delivery trucks. The noise chapter of the EIR will evaluate these noise impacts on neighboring residents.
- **Transportation and Circulation.** The EIR will describe the existing transportation network serving the project site and will evaluate the traffic impacts resulting from construction and operation of the proposed project.
- **Utilities.** The EIR will evaluate water supply impacts in the utility section.

The EIR will discuss the potential of cumulative impacts by considering impacts of relevant projects in and around the project area combined with those of the project. An evaluation of project alternatives that could reduce significant impacts will also be included in the EIR.

Attachments:
Figure 1 Regional and Vicinity Map
Figure 2 Aerial Photograph of the Project Site Figure 1 Regional and Vicinity Map



Source: ESRI, 2017; PlaceWorks, 2018.

Figure 4-1
Regional and Vicinity Location

Source: Google Earth, PlaceWorks, 2018.

0 1,000
Scale (Feet)

Project Site

Figure 4-2
Aerial of Project Site and Surrounding Area

County of Alameda
Notice of Preparation – Environmental Impact Report

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State Responsible Agencies
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Lead Agency:	Alameda County Planning Department
Project Title:	PLN2016-00049; Livermore Community Solar Farm Project
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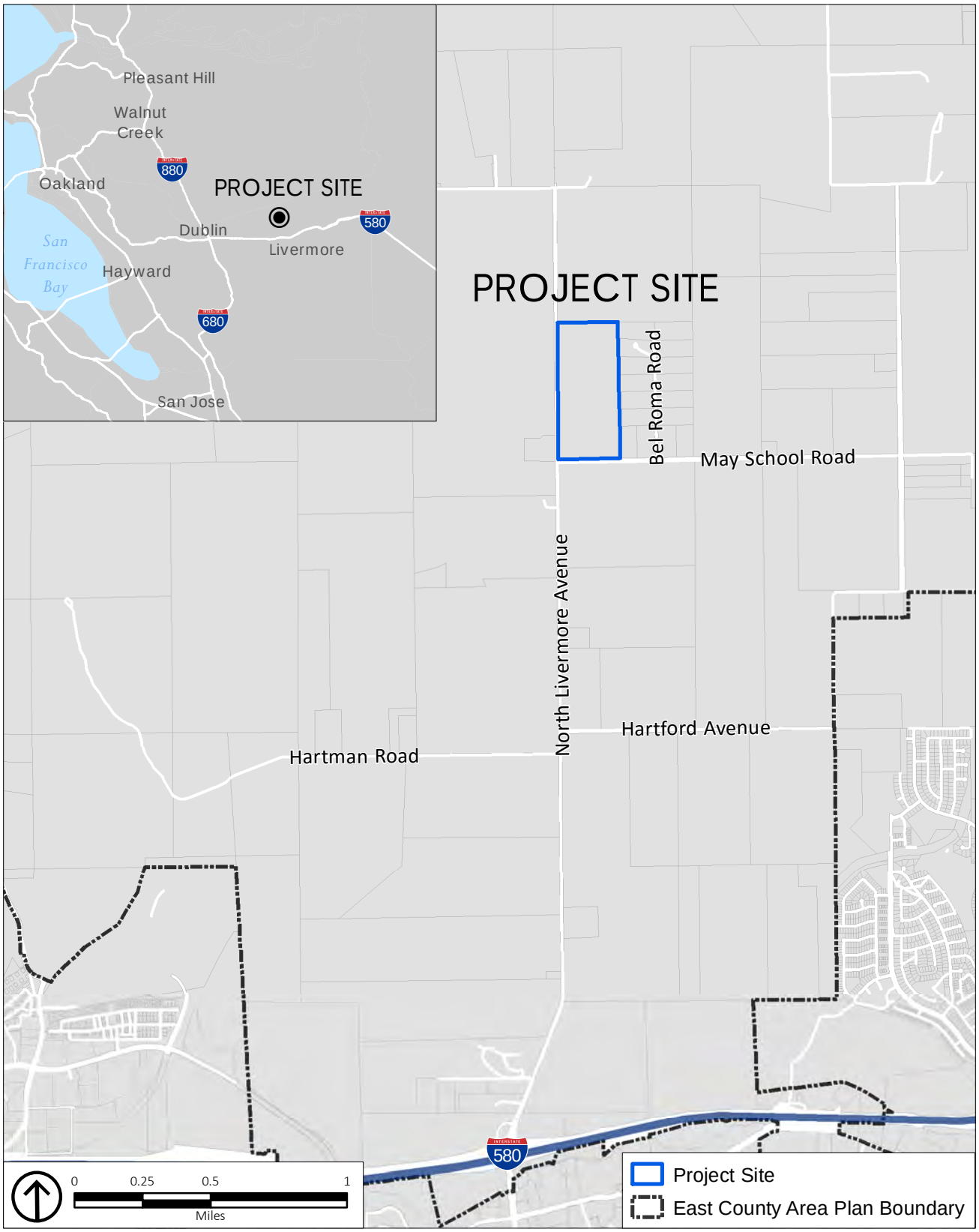

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Figure 4-2
Aerial of Project Site and Surrounding Area

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Gavin Newsom
Governor

Notice of Preparation

January 11, 2019

To: Reviewing Agencies

Re: Livermore Community Solar Farm Project (PLN 2016-00049)
SCH# 2018092012

Attached for your review and comment is the Notice of Preparation (NOP) for the Livermore Community Solar Farm Project (PLN 2016-00049) draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Damien Curry
Alameda County
224 W. Winton Avenue, Room 111
Hayward, CA 94544

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Attachments
cc: Lead Agency

Document Details Report
State Clearinghouse Data E

SCH# 2018092012
Project Title Livermore Community Solar Farm Project (PLN 2016-00049)
Lead Agency Alameda County

Type NOP Notice of Preparation

Description SunWalker Energy, the project applicant, is proposing the Livermore Community Solar Farm project to develop a 58.7-acre solar PV facility with a capacity of 6 MW alternating current on the 71.64-acre parcel located at 4871 North Livermore Ave in Alameda County. The proposed project also includes the installation of a 5-ft earth berm planted with native shrubs around the perimeter of the project site. Site preparation and installation activities for the proposed project would not necessitate the removal of any on-site trees.

Lead Agency Contact

Name Damien Curry
Agency Alameda County
Phone (510) 670-6684 **Fax**
email
Address 224 W. Winton Avenue, Room 111
City Hayward **State** CA **Zip** 94544

Project Location

County Alameda
City Livermore
Region
Cross Streets North Livermore Ave and May School Rd
Lat / Long 37° N / 121° W
Parcel No. 902-0002-003
Township **Range** **Section** **Base**

Proximity to:

Highways 580, 84
Airports Livermore Municipal
Railways
Waterways
Schools Andrew N. Christensen
Land Use large parcel ag/ag district

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Noise; Traffic/Circulation; Landuse; Other Issues

Reviewing Agencies Resources Agency; Department of Conservation; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Wildlife, Region 3; Native American Heritage Commission; Public Utilities Commission; Caltrans, Division of Aeronautics; California Highway Patrol; Caltrans, District 4; Regional Water Quality Control Board, Region 2

Date Received 01/11/2019 **Start of Review** 01/11/2019 **End of Review** 02/11/2019

Note: Blanks in data fields result from insufficient information provided by lead agency.

Print Form

Appendix C

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH # 2018092012

Project Title: Livermore Community Solar Farm Project (PLN-2016-00049)

Lead Agency: Alameda County — Contact Person: Damien Curry

Mailing Address: 224 West Winton Avenue, Room 111 — Phone: (510) 670-6684

City: Hayward — Zip: 94544 — County: Alameda

Project Location: County: Alameda — City/Nearest Community: Livermore

Cross Streets: North Livermore Avenue and May School Road — Zip Code: 94551

Longitude/Latitude (degrees, minutes and seconds): 121 ° 76 ′ ____ ″ N / 37 ° 74 ′ ____ ″ W Total Acres: 71.64

Assessor's Parcel No.: 902-0002-003 — Section: ____ Twp.: ____ Range: ____ Base: ____

Within 2 Miles: State Hwy #: 580, 84 — Waterways: n/a

Airports: Livermore Municipal Airport — Railways: ____ — Schools: Andrew N. Christensen

Document Type:

CEQA: ☒ NOP ☐ Draft EIR
☐ Early Cons ☐ Supplement/Subsequent EIR
☐ Neg Dec (Prior SCH No.) ____
☐ Mit Neg Dec Other: ____

NEPA: ☐ NOI Other: ☐ Joint Document
☐ EA ☐ Final Document
☐ Draft EIS
☐ FONSI

Local Action Type:

☐ General Plan Update	☐ Specific Plan	☐ Rezone	☐ Annexation
☐ General Plan Amendment	☐ Master Plan	☐ Prezone	☐ Redevelopment
☐ General Plan Element	☐ Planned Unit Development	☒ Use Permit	☐ Coastal Permit
☐ Community Plan	☐ Site Plan	☐ Land Division (Subdivision, etc.)	☐ Other: ____

Development Type:

☐ Residential:	Units ____	Acres ____		☐ Transportation:	Type ____
☐ Office:	Sq.ft. ____	Acres ____	Employees ____	☐ Mining:	Mineral ____
☐ Commercial:	Sq.ft. ____	Acres ____	Employees ____	☒ Power:	Type Solar Facility MW 6
☐ Industrial:	Sq.ft. ____	Acres ____	Employees ____	☐ Waste Treatment:	Type ____ MGD ____
☐ Educational:				☐ Hazardous Waste:	Type ____
☐ Recreational:				☐ Other:	____
☐ Water Facilities:	Type ____ MGD ____				

Project Issues Discussed in Document:

☒ Aesthetic/Visual	☐ Fiscal	☐ Recreation/Parks	☐ Vegetation
☒ Agricultural Land	☐ Flood Plain/Flooding	☐ Schools/Universities	☐ Water Quality
☒ Air Quality	☐ Forest Land/Fire Hazard	☐ Septic Systems	☐ Water Supply/Groundwater
☒ Archeological/Historical	☐ Geologic/Seismic	☐ Sewer Capacity	☐ Wetland/Riparian
☒ Biological Resources	☐ Minerals	☐ Soil Erosion/Compaction/Grading	☐ Growth Inducement
☐ Coastal Zone	☒ Noise	☐ Solid Waste	☒ Land Use
☐ Drainage/Absorption	☐ Population/Housing Balance	☐ Toxic/Hazardous	☐ Cumulative Effects
☐ Economic/Jobs	☐ Public Services/Facilities	☒ Traffic/Circulation	☒ Other: Utilities

Present Land Use/Zoning/General Plan Designation:

Large Parcel Agriculture/ Agricultural District

Project Description: *(please use a separate page if necessary)*

SunWalker Energy, the project applicant, is proposing the Livermore Community Solar Farm project to develop a 58.7- acre solar photovoltaic (PV) facility with a capacity of 6 megawatt (MW) alternating current (AC) on the 71.64-acre parcel located at 4871 North Livermore Avenue in Alameda County. The proposed project also includes the installation of a 5-foot earth berm planted with native shrubs around the perimeter of the project site. Site preparation and installation activities for the proposed project would not necessitate the removal of any on-site trees.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

NOP Distribution List

County: Alameda CM SCH# 2018092012

Resources Agency

- [ ] **Resources Agency**
  Nadell Gayou
- [ ] **Dept. of Boating & Waterways**
  Denise Peterson
- [ ] **California Coastal Commission**
  Allyson Hitt
- [ ] **Colorado River Board**
  Elsa Contreras
- [ ] **Dept. of Conservation**
  Crina Chan
- [ ] **Cal Fire**
  Dan Foster
- [ ] **Central Valley Flood Protection Board**
  James Herota
- [ ] **Office of Historic Preservation**
  Ron Parsons
- [ ] **Dept of Parks & Recreation**
  Environmental Stewardship Section
- [ ] **S.F. Bay Conservation & Dev't. Comm.**
  Steve Goldbeck
- [ ] **Dept. of Water Resources**
  Resources Agency
  Nadell Gayou

Fish and Game

- [ ] **Depart. of Fish & Wildlife**
  Scott Flint
  Environmental Services Division
- [ ] **Fish & Wildlife Region 1**
  Curt Babcock
- [ ] **Fish & Wildlife Region 1E**
  Laurie Harnsberger
- [ ] **Fish & Wildlife Region 2**
  Jeff Drongesen
- [ ] **Fish & Wildlife Region 3**
  Craig Weightman
- [ ] **Fish & Wildlife Region 4**
  Julie Vance
- [ ] **Fish & Wildlife Region 5**
  Leslie Newton-Reed
  Habitat Conservation Program
- [ ] **Fish & Wildlife Region 6**
  Tiffany Ellis
  Habitat Conservation Program
- [ ] **Fish & Wildlife Region 6 I/M**
  Heidi Calvert
  Inyo/Mono, Habitat Conservation Program
- [ ] **Dept. of Fish & Wildlife M**
  William Paznokas
  Marine Region

Other Departments

- [ ] **California Department of Education**
  Lesley Taylor
- [ ] **OES (Office of Emergency Services)**
  Monique Wilber
- [ ] **Food & Agriculture**
  Sandra Schubert
  Dept. of Food and Agriculture
- [ ] **Dept. of General Services**
  Cathy Buck
  Environmental Services Section
- [ ] **Housing & Comm. Dev.**
  CEQA Coordinator
  Housing Policy Division

Independent Commissions,Boards

- [ ] **Delta Protection Commission**
  Erik Vink
- [ ] **Delta Stewardship Council**
  Anthony Navasero
- [ ] **California Energy Commission**
  Eric Knight
- [ ] **Native American Heritage Comm.**
  Debbie Treadway
- [ ] **Public Utilities Commission**
  Supervisor
- [ ] **Santa Monica Bay Restoration**
  Guangyu Wang
- [ ] **State Lands Commission**
  Jennifer Deleong
- [ ] **Tahoe Regional Planning Agency (TRPA)**
  Cherry Jacques

Cal State Transportation Agency CalSTA

- [ ] **Caltrans - Division of Aeronautics**
  Philip Crimmins
- [ ] **Caltrans – Planning HQ LD-IGR**
  Christian Bushong
- [ ] **California Highway Patrol**
  Suzann Ikeuchi
  Office of Special Projects

Dept. of Transportation

- [ ] **Caltrans, District 1**
  Rex Jackman
- [ ] **Caltrans, District 2**
  Marcelino Gonzalez
- [ ] **Caltrans, District 3**
  Susan Zanchi
- [ ] **Caltrans, District 4**
  Patricia Maurice
- [ ] **Caltrans, District 5**
  Larry Newland
- [ ] **Caltrans, District 6**
  Michael Navarro
- [ ] **Caltrans, District 7**
  Dianna Watson
- [ ] **Caltrans, District 8**
  Mark Roberts
- [ ] **Caltrans, District 9**
  Gayle Rosander
- [ ] **Caltrans, District 10**
  Tom Dumas
- [ ] **Caltrans, District 11**
  Jacob Armstrong
- [ ] **Caltrans, District 12**
  Maureen El Harake

Cal EPA

Air Resources Board

- [ ] **Airport & Freight**
  Jack Wursten
  - [ ] **Transportation Projects**
    Nesamani Kalandiyur
  - [ ] **Industrial/Energy Projects**
    Mike Tollstrup
- [ ] **California Department of Resources, Recycling & Recovery**
  Kevin Taylor/Jeff Esquivel
- [ ] **State Water Resources Control Board**
  Regional Programs Unit
  Division of Financial Assistance
- [ ] **State Water Resources Control Board**
  Cindy Forbes – Asst Deputy
  Division of Drinking Water
- [ ] **State Water Resources Control Board**
  Div. Drinking Water #_____
- [ ] **State Water Resources Control Board**
  Student Intern, 401 Water Quality Certification Unit
  Division of Water Quality
- [ ] **State Water Resouces Control Board**
  Phil Crader
  Division of Water Rights
- [ ] **Dept. of Toxic Substances Control Reg. #**_____
  CEQA Tracking Center
- [ ] **Department of Pesticide Regulation**
  CEQA Coordinator

Regional Water Quality Control Board (RWQCB)

- [ ] **RWQCB 1**
  Cathleen Hudson
  North Coast Region (1)
- [ ] **RWQCB 2**
  Environmental Document Coordinator
  San Francisco Bay Region (2)
- [ ] **RWQCB 3**
  Central Coast Region (3)
- [ ] **RWQCB 4**
  Teresa Rodgers
  Los Angeles Region (4)
- [ ] **RWQCB 5S**
  Central Valley Region (5)
  - [ ] **RWQCB 5F**
    Central Valley Region (5)
    Fresno Branch Office
  - [ ] **RWQCB 5R**
    Central Valley Region (5)
    Redding Branch Office
- [ ] **RWQCB 6**
  Lahontan Region (6)
  - [ ] **RWQCB 6V**
    Lahontan Region (6)
    Victorville Branch Office
- [ ] **RWQCB 7**
  Colorado River Basin Regic
- [ ] **RWQCB 8**
  Santa Ana Region (8)
- [ ] **RWQCB 9**
  San Diego Region (9)

- [ ] **Other** _____

_____

_____

- [ ] _____
  Conservancy

Last Updated 5/22/18

Livermore Community Solar Farm Project

EIR Public Scoping Meeting January 29, 2019
Comments

Thank you for attending tonight's meeting. The purpose of the meeting is to brief local residents and business leaders on the project, and hear community comments and concerns, and summarize next steps. Your comments and/or questions are important. Please complete this form with your comments and/or questions. Thank you.

Name (please print): MERLIN NEWTON Organization/Business: _____

Address: 4742 BEL ROMA RD City: LVMR State: CA Zip: 94551

Phone: 925-216-4183 Fax: _____ Email: FFI166@YAHOO.COM

COMMENTS / QUESTIONS:

- WATER
- AESTHETICS
- WILDLIFE

Comments may also be submitted at:

E-mail: damien.curry@acgov.org

Or

By mail: Alameda County, Planning Department
Attention: Damien Curry, Planner III
224 W. Winton Avenue, Room 111
Hayward, CA 94544

Livermore Community Solar Farm Project

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Name (please print): Citlali Ott Organization/Business: _____

Address: 4757 Bel Roma Rd City: Livermore State: CA Zip: 94551

Phone: 925-580-0554 Fax: _____ Email: citlali.bldg@gmail.com

COMMENTS / QUESTIONS:

STORM WATER RUN-OFF IN AN AREA THAT IS CURRENTLY PRONE WITH FREQUENT STREET FLOODING.

GROUND WATER USE / POSSIBLE CONTAMINATION

IMPERVIOUS SURFACE / RAIN WATER ABSORTION

SCENIC CORRIDOR

LOSS OF GRAZING LAND

ENDANGERED SPECIES

Comments may also be submitted at:

E-mail: damien.curry@acgov.org

Or

By mail: Alameda County, Planning Department
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Name (please print): Neil Donat Organization/Business: _____

Address: 4706 Bel Roma Rd City: Livermore State: CA Zip: 94551

Phone: 510-889-0707 Fax: _____ Email: neildonat@hotmail.com

COMMENTS / QUESTIONS:

Concerned about water - both the runoff from rain & water consumption for washing the panels and watering vegetation

This land is identified as an area of concern as to quality & contamination

Wildlife - we have fox, coyotes & other species living in the area
- also look at the impact on native birds -

Scenic Corridor - designated by Ala. Co as such in 1966
these will have negative impact of the scenic elements of the valley

I would like to have alternative sites considered. Even areas against the mountains rather than right in the middle of the valley

Check into the Williamson Act and whether a solar farm meets that criteria.

We aware of other farms are proposed and the cumulative effect is significant

Comments may also be submitted at:

E-mail: damien.curry@acgov.org

Or

By mail: Alameda County, Planning Department
Attention: Damien Curry, Planner III
224 W. Winton Avenue, Room 111
Hayward, CA 94544

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Name (please print): Greg Howe Organization/Business: Neighbor

Address: 4761 Bel Roma Rd City: Livermore State: Ca Zip: 94551

Phone: 925 400 3303 Fax: _____ Email: Howe83@att.com

COMMENTS / QUESTIONS:

How are rats and mice going to be kept away from our properties. Many will be disrupted and cause damage to our homes.

Birds are effected by high temperatures above solar panels which are spread out over large open areas will be hard for birds to avoid.

Comments may also be submitted at:

E-mail: damien.curry@acgov.org

Or

By mail: Alameda County, Planning Department
Attention: Damien Curry, Planner III
224 W. Winton Avenue, Room 111
Hayward, CA 94544

Livermore Community Solar Farm Project

EIR Public Scoping Meeting January 29, 2019
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Name (please print): K & L Cabeceiras Organization/Business: _____

Address: Bel Roma Rd City: Livermore State: _____ Zip: 94551

Phone: _____ Fax: _____ Email: Lynne.Cabeceiras@gmail.com

COMMENTS / QUESTIONS:

Concerned especially about water and its effects on our water supply.

What happened to No Livermore being designated a scenic corridor?

Land is/should be zoned for agricultural use. This project should be placed in a commercial or light industrial use property.

Please study effects on animals, especially raptors

Very concerned about future solar farm projects and more adverse effects.

Please specifically address ground water and drainage. How will it be effected specifically by this project to surrounding neighborhoods?

Comments may also be submitted at:

E-mail: damien.curry@acgov.org

Or

By mail: Alameda County, Planning Department
Attention: Damien Curry, Planner III
224 W. Winton Avenue, Room 111
Hayward, CA 94544

January 22, 2019

VIA EMAIL: DAMIEN.CURRY@ACGOV.ORG
Mr. Damien Curry
Alameda County, Planning Department
224 W. Winton Avenue, Room 111
Hayward, CA 94544

Dear Mr. Curry:

NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT FOR THE LIVERMORE COMMUNITY SOLAR FARM PROJECT, PLN2016-00049

The Department of Conservation's (Department) Division of Land Resource Protection (Division) has reviewed the Notice of Preparation of an Environmental Impact Report for the Livermore Community Solar Farm Project (Project) submitted by the County of Alameda (County). The Division monitors farmland conversion on a statewide basis and administers the California Land Conservation (Williamson) Act and other agricultural land conservation programs. We offer the following comments and recommendations with respect to the proposed project's potential impacts on agricultural land and resources.

Project Description

The proposed project would develop a 58.7-acre solar photovoltaic (PV) facility with a capacity of 6 megawatt (MW) alternating current (AC) on the 71.64-acre parcel located at 4871 North Livermore Avenue in Alameda County. Construction of the proposed project is expected to occur in two phases over a one-year period. Phase 1 would be located on the southern portion of the project site adjacent to May School Road, with an area of 30.8 acres. Phase 2 would be located on the northern portion of the project site adjacent to North Livermore Avenue, encompassing 27.9 acres. The project site is designated Large Parcel Agriculture, and is under a Williamson Act contract.

Department Comments

The initial study states, "The adopted Alameda County Uniform Rules for Williamson Act include photovoltaic power generation as a use compatible with on-site agricultural uses." [1]; however, the initial study does not mention the acreage limitation as stated in the County's Uniform Rules

[1] Alameda County Livermore Community Solar Farm Initial Study, Environmental Analysis, Agricultural and Forestry Resources, page 5-20, http://www.acgov.org/cda/planning/landuseprojects/documents/LivermoreCommunitySolarFarm_InitalStudy.pdf

and Procedures, Rule 2 Compatible Uses[2]. The Department of Conservation is concerned that the project as proposed exceeds this maximum acreage requirement.

The Department suggests that the applicant file for non-renewal of the current Williamson Act contract, and wait until the contract's non-renewal status has ended and the contract has expired before moving forward with the proposed development of the project. However, if the applicant wishes to proceed with the project before that time they may consider contract cancellation. Cancellation of the proposed project site would prevent the proposed use from conflicting with existing law. Please refer to our website for further information regarding contract non-renewal, cancellation, and other contract removal methods.[3]

Conclusion

The Department recommends the following discussion under the Agricultural Resources section of the Environmental Impact Report:

- Type, amount, and location of farmland conversion resulting directly and indirectly from implementation of the proposed project.
- Impacts on any current and future agricultural operations in the vicinity; e.g., land-use conflicts, increases in land values and taxes, loss of agricultural support infrastructure such as processing facilities, etc.
- Incremental impacts leading to cumulative impacts on agricultural land. This would include impacts from the proposed project, as well as impacts from past, current, and likely future projects.
- Compliance with the County's Williamson Act Uniform Rule 2, II.E.3.b.
- Potential contract resolutions for land in an agricultural preserve and/or enrolled in a Williamson Act contract.

Thank you for giving us the opportunity to comment on the Notice of Preparation of an Environmental Impact Report for the Livermore Community Solar Farm Project. Please provide this Department with notices of any future hearing dates as well as any staff reports pertaining to this project. If you have any questions regarding our comments, please contact Farl Grundy, Environmental Planner at (916) 324-7347 or via email at Farl.Grundy@conservation.ca.gov.

Sincerely,

Monique Wilber
Conservation Program Support Supervisor

[2] Alameda County, Community Development Agency, General Plans Ordinances & Policies, Williamson Act Program, Documents, Uniform Rule 2 Compatible Uses, II.E.3.b, page 2-12, https://www.acgov.org/cda/planning/landuseprojects/documents/Uniform_Rule_2_Compatible_Uses_10-11-11.pdf

[3] http://www.conservation.ca.gov/dlrp/wa/Pages/removing_contracts.aspx

STATE OF CALIFORNIA Gavin Newsom, Governor
NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone (916) 373-3710
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov
Twitter: @CA_NAHC

January 25, 2019

Damien Curry
Alameda County
2254 W. Winton Avenue, Room 111
Hayward, CA 94544

RE: SCH# 2018092012 Livermore Community Solar Farm Project (PLN 2016-00049), Alameda County

Dear Mr. Curry:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:
   a. A brief description of the project.
   b. The lead agency contact information.
   c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
   d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).
   a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
   a. Alternatives to the project.
   b. Recommended mitigation measures.
   c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:
   a. Type of environmental review necessary.
   b. Significance of the tribal cultural resources.
   c. Significance of the project's impacts on tribal cultural resources.
   d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
   a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
   b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:
    a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
    b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:
    a. Avoidance and preservation of the resources in place, including, but not limited to:
        i. Planning and construction to avoid the resources and protect the cultural and natural context.
        ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
    b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
        i. Protecting the cultural character and integrity of the resource.
        ii. Protecting the traditional use of the resource.
        iii. Protecting the confidentiality of the resource.
    c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
    d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).
    e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).
    f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
    a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.
    b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
    c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
    a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
    b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
    a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
    b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
    c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Gayle.Totton@nahc.ca.gov.

Sincerely,

for Gayle Totton
Associate Governmental Program Analyst

cc: State Clearinghouse

LIVERMORE
CALIFORNIA

February 11, 2019

Damien Curry, Planner
Alameda County Planning Department
224 West Winton Avenue, Room 111
Hayward, CA 94544

Subject: Livermore Community Solar Farm Notice of Preparation

Dear Mr. Curry:

Thank you for the opportunity to review the Notice of Preparation (NOP) for the project-level Environmental Impact Report (EIR) for the Livermore Community Solar Farm project. The project would develop a 6.0 megawatt (MW) solar photovoltaic (PV) facility on 57.8 acres of a 71.64-acre site located at the northeast corner of North Livermore Avenue and May School Road. The City does generally support the use of clean energy alternatives such as solar facilities.

The NOP identifies ten topic areas to be addressed in the EIR. The City agrees that the project's potential impacts in these topic areas warrant analysis and identification of mitigation measures. In addition, the City remains concerned about the issues identified in our October 10, 2018 letter on the IS/MND, namely agriculture/Williamson Act and biological impacts.

If you have any further questions, please contact me at (925) 960-4450, or Susan Frost, Special Projects Coordinator, at (925) 960-4434.

Sincerely,

Steve Stewart
Planning Manager

cc: Steve Riley, Principal Planner
Susan Frost, Special Projects Coordinator

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, ZONE 7
100 NORTH CANYONS PARKWAY • LIVERMORE, CA 94551 • PHONE (925) 454-5000 • FAX (925) 454-5727

February 7, 2019

Damien Curry
Alameda County Planning Department
224 West Winton Avenue, Room 111
Hayward, CA 94544
Sent by e-mail to: damien.curry@acgov.org

Re: *Comments Livermore Community Solar Farm NOP*

Dear Mr. Curry,

Zone 7 Water Agency (Zone 7, or Zone 7 of the Alameda County Flood Control and Water Conservation District) has reviewed the referenced document in the context of Zone 7's mission to provide water supply, flood protection, and groundwater and stream management within the Livermore-Amador Valley. Following are our comments for your consideration.

1. **Groundwater Management.** The project area lies over a groundwater basin (Livermore Valley Groundwater Basin) that is used for municipal, industrial, and domestic and irrigation water supply. To support protection of groundwater quality, the project should be consistent with or comply with appropriate plans and regulations such as Zone 7's Salt and Nutrient Management Plan and the Sustainable Groundwater Management Ordinance, the State's Water Recycling Policy (and associated orders), the State's storm water protection measures, and the County's Water Wells Ordinance. We encourage you to review Zone 7's Groundwater Management Plan and the annual reports available on our website at http://www.zone7water.com/publications-reports/reports-planning-documents; these reports likely have more specific and more up-to-date information than what you may find in California Department of Water Resources' Bulletin 118, which was referenced in the earlier Initial Study. Contact Matt Katen at (925) 454-5071 for additional information.

2. **Impervious Surface.** The total impervious area identified in the IS/MND should include any impervious areas created by the solar modules, maintenance roads, driveways, proposed rain tanks, and other new facilities.

   New development and the expansion of existing development may impose a burden on the existing flood protection and storm drainage infrastructure within the Zone 7 service area. Developments creating new impervious areas within the Livermore-Amador Valley are subject to the assessment of the Development Impact Fee for Flood Protection and Storm Water Drainage. These fees are collected for Zone 7 by the local governing agency: 1) upon approval of final map for public improvements creating new impervious areas; and/or 2) upon issuance of a building or use permit required for site improvements creating new impervious areas. Fees are dependent on whether post-project impervious area conditions are greater than pre-project conditions and/or whether fees have previously been paid. Please refer to Zone 7's Flood Protection & Storm Water Drainage

Development Impact Fee Ordinance and additional information at: http://www.zone7water.com/permits-a-fees . Contact Jeff Tang at (925) 454-5075 for additional information.

3. **Wells Records.** Our records indicate there are 2 water wells in the project area and one active Zone 7 program monitoring well in the proximity. The approximate locations are shown on the attached Well Location map. Please immediately notify Zone 7 if any other wells exist in the project area. All well locations should be field verified and noted on the plans. If any of the wells are to be decommissioned, a well destruction permit must be obtained from Zone 7 before starting the work. A drilling permit must also be obtained for any other water well or soil boring work that may be planned for this project. The Zone 7 drilling permit application and the permit fee schedule can be downloaded from our website: www.zone7water.com, or requested by email sent to wellpermits@zone7water.com. Additional information can be obtained by contacting Michelle Parent at (925) 454-5077.

We appreciate the opportunity to comment on this project. If you have any questions on this letter, please feel free to contact me at (925) 454-5005 or via email at erank@zone7water.com .

Sincerely,

Elke Rank

Elke Rank

cc: Carol Mahoney, Amparo Flores, Joe Seto, Jeff Tang, Matt Katen, file

Attachments (2) – well location map and table

Zone 7 Water Agency
100 North Canyons Parkway, Livermore, CA

Livermore Community Solar Project
Well Map

Zone 7 Water Agency - Well Records Search Results 2-4-2019

Livermore Community Solar Project Wells

Well_numbe *	Use	Address	City	Status	Remark	AsParNum	Driller	Category	SubCategory
2S/2E 21F 1	domestic	5459 North Livermore	Livermore	unknown				well-supply	domestic
2S/2E 21N 1	domestic	4871 North Livermore Avenue	Livermore	unknown		902 0002 003 00		well-supply	domestic
2S/2E 28D 2	monitor	May School Road near North Livermore	Livermore	active	Located by white post marker		USGS HEW	well-static	monitor

LAW OFFICES OF
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ASARKAR@GPSLLP.COM

January 25, 2019

Via Certified U.S. Mail No. 7018 0360 0002 3396 0765
And E-mail

Damien Curry
Alameda County Planning Department
224 West Winton Avenue, Room 111
Hayward, CA 94544
E-mail: Damien.Curry@acgov.org

Re: Livermore Community Solar Farm

Mr. Curry:

This law firm represents Robert Howe and John Bowles, each owners of residences located on Bel Roma Road adjacent to the proposed Livermore Community Solar Farm project (the "***Project***"). Reference is made to the Alameda County Livermore Community Solar Farm Initial Study dated September 2018 (the "***Initial Study***"); our October 4, 2018 Letter sent to you via E-mail and Certified Mail (the "***October 4 Letter***"), and the County of Alameda Notice of Preparation – Environmental Impact Report issued on January 11, 2019 (the "***Notice of Preparation***").

Firstly, we agree with the decision that the Project be the subject of a thorough environmental impact report ("***EIR***") and detailed analysis under CEQA. We also note and appreciate that the Notice of Preparation considers some of the issues that we had included in our October 4 Letter.

In supplement to our October 4 Letter, we would like to submit the following issues addressed in the scope of the EIR:

1. While we understand that the noise from water deliveries is scheduled to be analyzed under the EIR, we would like to see an analysis of the Project's impact on existing roads and road surfaces, particularly from daily and regular water deliveries, construction activities, and maintenance activities for the Project.

2. We would like to see the impact that the Project will have on local wildlife, and in

particular local and native raptors (eg. red tail hawks, golden eagles, and owls).

3. In the October 4 Letter we requested information regarding the potential use of Unmanned Aircraft or drones for security for the Project. If plans for such devises are are in place, we would like the EIR to address the environmental impacts of such Unmanned Aircraft or drones on the Project and surrounding areas, including without limitation any noise impacts and any impact on wildlife. If no such plans are in place, we would like to see some guarantees to neighbors that these devices will not be used for security on the Project.

4. In the October 4 Letter we requested information regarding the creation of a Moat or Trench near the residential properties abutting the Project. If such plans are in place, we would like the EIR to address the environmental impacts of digging or excavating any moat or trench near abutting residential properties, including without limitation any potential accumulation of water therein. If no such plans are in place, we would like to see some guarantees to neighbors that such trenches or moats will not be excavated.

5. We would like the EIR to address any potential increases in the fire risk to the Project as well as neighboring properties which arise from or relate to the plan to plant additional native vegetation on the property on which the Project lies.

Finally, although not an issue which needs be addressed in the EIR, we would like to reiterate our point raised in Section 1 of our October 4 Letter that this Project does not comply with the County's Uniform Rules and implementation of the Williamson Act. We hereby request that the County address the lack of compliance of the Project therewith.

Thank you for your attention to this matter.

Very truly yours,

GREENAN, PEFFER, SALLANDER & LALLY LLP

Andy Sarkar

AS/cdh
cc: Client

Curry, Damien, CDA

From: Merlin Newton Sr. <ffiigg@yahoo.com>
Sent: Monday, January 28, 2019 1:10 PM
To: Curry, Damien, CDA
Subject: NOP of EIR for Solar Project

To: Damien Curry
Alameda County Planning Department
224 West Winton Avenue, Room 111
Hayward, CA 94544

January 28, 2019

From: Merlin Newton Sr.
Linda Newton
4742 Bel Roma Road
Livermore, CA 94551

Subject: Notice of Preparation (NOP) of the Draft Environmental Impact Report (EIR) for the Livermore Community Solar Project.

My wife and I live directly behind the proposed solar project and want to see the EIR include or address, but not be limed to, the following areas of concern:

Water Quality:

The 58.7 acres of solar arrays being proposed by the Alameda County Planning Department (ALCOPD), if approved, will be constructed above the "May School Road Groundwater Basin" which supplies water to area residents for drinking, irrigation, and livestock. ALCOPD and ZONE 7 have identified the May School Groundwater Basin as an "Area of Special Concern" due to high nitrate concentrations which is one purpose for developing the Onsite Wastewater Systems Ordinances and Regulations (OWTS) for Septic Systems. The "ALCOPD's Solar Study" noted the Impact on "Hydrology and Water" would be "Less Than Significant", but failed to mention "specifically" the May School groundwater basin is on its list of "Area of Special Concern":https://www.acgov.org/aceh/landuse/areas_of_concern.htm. Alameda County has very strict policies regarding dirt, septic systems and other materials in order to prevent any soil or ground water contamination, yet a solar project which will impact ground water already compromised is OK. The standard "Less Than Significant" mentioned in the Negative Mitigation Declaration would only be reached if ALL necessary Negative Mitigation steps are strictly followed. "Less than Significant" is not good enough when the May School Ground Water is already compromised.

Aesthetics:

The "Mitigated Negative Declaration" study acknowledges there will be "substantial degradation of the visual quality or character in the vicinity of the project site". Adding a berm, cyclone fencing, and plants will not reduce the substantial degradation and will have a negative impact on property values, scenic rural corridor, views, natural habit and wildlife. In 1966 ALAMEDA COUNTY adopted, "The ALameda County General Plan Scenic Route Element", which serves as a guide for the Protection and Enhancement of SCENIC VALUES along designated routes in other county areas visible from scenic routes. There is nothing scenic

about about a 44 football field size solar facility on N. Livermore Ave and May School Road. The General Plan Scenic Route Element specifically identifies North Livermore Avenue as a "Scenic Rural-Recreation Route". They're are many rural roads within the county which are not designated scenic corridors, yet North Livermore Road, a Scenic Rural-Recreation Route, is not being afforded the Protection and Enhancement specified in the Alameda County's "Scenic Route Element" General Plan.

Wildlife Habitat:

I and many of my neighbors have been experiencing an large increase/inundation of ground squirrels, mice, rats etc since the recent PG&E construction started on North Livermore. Although I cannot say with certainty the two are directly related, I can say with certainty the wildlife on the the 71 acre agricultural land, directly behind me, will impact me directly. The wildlife will be flushed out of the property and into nearby properties. More importantly, how will the construction and maintenance of the property impact the natural wildlife habitat, which is PART and PARCEL of the designated "Scenic Rural-Recreation Route".

Merlin Newton Sr.

Curry, Damien, CDA

From: Merlin Newton Sr. <ffiigg@yahoo.com>
Sent: Thursday, January 31, 2019 8:48 PM
To: Curry, Damien, CDA
Subject: NOP of EIR

To: Damien Curry
Alameda County Planning Department
224 West Winton Avenue, Room 111
Hayward, CA 94544

January 31, 2019

From: Merlin Newton Sr.
Linda Newton
4742 Bel Roma Road
Livermore, CA 94551

Subject: Notice of Preparation (NOP) of the Draft Environmental Impact Report (EIR) for the Livermore Community Solar Project.

My wife and I live directly behind the proposed solar project and want to see the EIR include or address, but not be limed to, the following areas of concern:

Water:

#1 As part of the EIR, I would like to see the "well water" tested and analyzed of residents who will be affected by the Solar Project on N. Livermore Ave and May School Rd to determine the state of the water and to create a base line for any changes in the ground water, prior to any solar development.

#2 I would also like to have the "May School Road Groundwater Basin" tested and analyzed to determine its current state and to create a baseline for any changes in the water, prior to any solar development. The May School Groundwater Basin is currently on Alameda County and Zone-7's "Area of Special Concern" due to high nitrates, and therefore, should not be subject to any further contamination however slight.

Please include these comments with my original comments I submitted on January 28th, 2019.

Merlin Newton Sr.

Curry, Damien, CDA

From: Dane Lowry <dane@rgwconstruction.com>
Sent: Monday, February 4, 2019 4:34 PM
To: Curry, Damien, CDA
Subject: RE: Solar NOP of EIR

Hi Damien

Just have a few questions about the Industrial Solar Plant that is being proposed of May School Road in Livermore.

1. Who will be receiving the power from the Solar Plant?
2. Who will pay for the Solar Plant?
3. Is this a project that is required to be done by the County so they can say they are going green?

Why not have these solar panels placed alongside the Freeway or down the median of the Freeway. There is a lot of space going over the Altamont between East and West lanes. There are many large parking lots that could have these panels placed over them. Bridges are another great place for solar panels. All the land around Livermore and Sandia labs. I would tend to believe the last resort would be open space and if that was the case the foot hills next to the Freeway would be a much better choice. Why not keep our valley looking pristine until a final master plan comes out. Once the Industrial Solar Farm is in place it will be very hard to remove it.

Dane Lowry

Curry, Damien, CDA

From: Robert W. Selna <rselna@Wendel.com>
Sent: Thursday, February 7, 2019 3:51 PM
To: Curry, Damien, CDA
Subject: PLN2016-00049 -- Comments on the scope and content of the EIR and the initial study

Mr. Curry,

I'm writing to provide comments on the scope and content of the EIR related to PLN2016-00049, Livermore Community Solar Farm Project ("Project").

My comments relate to the Initial Study's ("IS") approach to analyzing Aesthetics, starting in page 5-1 of the IS. The IS found that the Project would either have less-than-significant impacts or less-than-significant impacts with mitigation.

However, the IS seems to ignore scenic and visual resource protections in the Alameda General Plan and East Count Area Plan as follows:

1) North Livermore Ave. – Scenic Rural Recreation Route: The IS notes that the proposed Project is located directly adjacent the Scenic Rural-Recreation Route (SRRR)that includes North Livermore Ave., but states that any visual or scenic impairment will be addressed by the fact that the solar arrays and fencing will be "concealed by" a landscape buffer that will take five years to mature.

the IS states that 5-year plantings will "conceal" the Project's solar arrays. However, IS Figure 5-7 shows that initial plantings do little to cover the arrays, let alone conceal them. As a result, the scenic and visual quality of the area is impaired by the arrays, which are inconsistent with the natural topography, and which impair the view of the of the Brushy Peak ridgeline to the East. While the IS implies that it is acceptable for the SRRR to be impaired for some number of years up to five years, the five-year grace period is not included in the General Plan Scenic Route Element. Finally, while the mature landscaping may screen the arrays, it also screens part of the Brushy Peak ridgeline, which is not permitted in the SRRR.

2) East County Area Plan Policy 114/115 – landscaping shall screen undesirable views and development shall blend with the environment of the area where located: Due to the screening problem above, the arrays violated Policy 114 and 115.

No matter how one might describe them, solar arrays do not blend with unimproved agricultural land and ridgelines like the ones in North Livermore. The IS states that the solar arrays are consistent with ECAP Policies 114 and 15 because the arrays would be "concealed by the proposed landscape buffer with 5-year plantings." The IS implies that the policies intend that screening obscure structures that appear unnatural or undesirable within five years of the structures being developed. But, that's not what the policies says. There is no timeframe. The policies intend that the screening occur from inception. The IS ignores this and relies on the 5-year plantings as a solution. The IS provides renderings where the solar arrays are plainly visible. It's not clear from the IS renderings that the landscaping would EVER "conceal" the arrays, but we know for certain from the IS that the County believes it to be acceptable that the arrays go un-screened for some period of years.

3) East County Area Plan Policy 116 – development shall be located and designed to conform with rather than change natural landforms: The alteration of natural topography, vegetation, and other characteristics by grading, excavating, filling or other development activity shall be minimized. Inconsistent with Policy 116, IS Section 5.3 (I)(c) (page 5-7) specifically calls for grading and building an "earth berm" (Section 4.2.5 Landscaping) that the landscaping meant to obscure the arrays would be planted in. The earth berm would seem to directly contradict East County Area Plan Policy

116. An earth berm is not a natural land form and will, no doubt, detract from the scenic and visual character east of North Livermore Ave.

In short, the IS section on aesthetics lists the County's visual and scenic protections, but then ignores the fact that the proposed project fails to conform with them.

Thank you,

Robert Selna

WENDEL ROSEN BLACK & DEAN LLP

Robert W. Selna
Attorney at Law

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1111 Broadway, 24th Floor | Oakland, CA 94607
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APPENDIX B:
INITIAL STUDY

ALAMEDA COUNTY

Livermore Community Solar Farm Initial Study

September 2018 | Screencheck Draft

PLACEWORKS

ALAMEDA COUNTY

Livermore Community Solar Farm Initial Study

September 2018 | Screencheck Draft

Submitted By:

PlaceWorks
1625 Shattuck Avenue, Suite 300
Berkeley, California 94709
510.848.3815

In Association with:

LSA Associates, Inc.

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1. Introduction

This document is an Initial Study for the Livermore Community Solar Farm project (proposed project or project) prepared by Alameda County to determine if the project may have a significant effect on the environment. Under the California Environmental Quality Act (CEQA), if a proposed project is to be carried out by a nongovernmental person or entity, the public agency such as a City or County shall act as the Lead Agency with responsibility for preparing a Negative Declaration or an EIR for the project. Pursuant to Section 15051 of the State CEQA Guidelines, Alameda County is the Lead Agency for the proposed project.

The proposed project would develop a 3.0 megawatt (MW) alternating current (AC) solar photovoltaic (PV) facility on a 71.64-acre site located at 4871 North Livermore Avenue in Alameda County. The proposed solar PV facility would introduce a total of 23,316 solar modules with associated tracking and mounting systems, connective wire, control center, inverters, and a meteorological station to the project site. Construction of the proposed project is expected to occur in two phases over a one-year period and would introduce approximately 1,370 square feet of impervious surface to the project site. Phase I of the solar PV facility would be located on the southern portion of the project site adjacent to May School Road, and would encompass 30.8 acres. Phase 2 of the solar PV facility would be located on the northern portion of the project site adjacent to North Livermore Avenue, and encompass 27.9 acres. The property owner would continue to lease the property to allow live-stock to graze underneath and around the solar panels.

1.1 REPORT ORGANIZATION

This initial Study is organized into the following chapters:

Chapter 1: Introduction. This chapter provides an introduction and overview of the Initial Study document.

Chapter 2: Executive Summary. This chapter summarizes the findings of the Initial Study and recommended mitigation measures.

Chapter 3: Initial Study Checklist. This chapter summarizes pertinent information for the proposed project, including the lead agency contact information, proposed project location, East County Area Plan designation, and Zoning designation.

Chapter 4: Project Description. This chapter includes a description of the location and setting of the proposed project, along with its principal components, as well as a description of the policy setting and implementation process for the proposed project.

Chapter 5: Environmental Analysis and Findings. This chapter is divided into 19 sections that correspond to CEQA Guidelines Appendix F, Energy Conservation, and Appendix G, Environmental Checklist, as amended per Assembly Bill 52 (Tribal Cultural Resources) and the California Supreme Court in a December 2015 opinion [*California Building Industry Association (CBIA) v. Bay Area Air Quality Management District (BAAQMD)*, 62 Cal. 4th 369 (No. S 213478)]. Each section in this chapter identifies and discusses anticipated impacts from the proposed project, providing substantiation of the findings made. The chapter concludes with the determination, based on the analysis contained in this Initial Study, that a Mitigated Negative Declaration is appropriate for the proposed project.

Chapter 6: Organizations and Persons Consulted. This chapter presents a list of County and consultant team members that contributed to the preparation of the Initial Study.

Chapter 7: Mitigation Monitoring or Reporting Program. This chapter identifies the recommended mitigation measures categorized by impact area.

2. Executive Summary

Alameda County (County) prepared an Initial Study for the Livermore Community Solar Farm project (proposed project or project) to determine if the project may have a significant effect on the environment. Under the California Environmental Quality Act (CEQA), if a proposed project is to be carried out by a nongovernmental person or entity, the public agency such as a City or County shall act as the Lead Agency with responsibility for preparing a Negative Declaration or an Environmental Impact Report (EIR) for the project. Pursuant to Section 15051 of the State CEQA Guidelines, the County is the Lead Agency for the proposed project.

This Initial Study was prepared pursuant to the requirements of CEQA[1] and the CEQA Guidelines[2] to determine if approval of the identified discretionary actions and related subsequent development could have a significant effect on the environment (i.e., significant impact). Alameda County, as the lead agency, has reviewed and revised as necessary all submitted drafts, technical studies, and reports to reflect its own independent judgment, including reliance on applicable County technical personnel and review of all technical subconsultant reports. Information for this Initial Study was obtained from on-site field observations; discussions with affected agencies; analysis of adopted plans and policies; review of available studies, reports, data, and similar literature in the public domain; and specialized environmental assessments (e.g., biological resources).

The 30-day public comment period for the Initial Study started on September 6, 2018 and comments were accepted through October 8, 2018.

2.1 FINDINGS

The Initial Study identifies and discusses anticipated impacts from the proposed project as outlined in the CEQA Guidelines Appendix F, Energy Conservation, and Appendix G, Environmental Checklist, as amended by Assembly Bill 52 (Tribal Cultural Resources) and the California Supreme Court in a December 2015 opinion [*California Building Industry Association (CBIA) v. Bay Area Air Quality Management District (BAAQMD)*, 62 Cal. 4th 369 (No. S 213478)]. The following includes a summary of the findings based on the analysis contained in Chapter 5, Environmental Analysis, of this Initial Study.

[1] The CEQA Statute is found at California Public Resources Code, Division 13, Sections 21000 to 21177.
[2] The CEQA Guidelines are found at California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000 to 15387.

2.2 SUMMARY OF PROPOSED PROJECT

The proposed project would develop a 58.7 acre solar photovoltaic (PV) facility with a capacity of 6 Megawatt (MW) alternating current (AC) on the 71.64-acre parcel at 4871 North Livermore Avenue in Alameda County.[3,4] Construction of the proposed project is expected to occur in two phases over a one-year period. Phase I would be located on the southern portion of the project site adjacent to May School Road, and encompass 30.8 acres. Phase 2 would be located on the northern portion of the project site adjacent to North Livermore Avenue, and encompass 27.9 acres.

2.3 SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Under CEQA, a significant impact on the environment is defined as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the proposed project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance.

The proposed project has the potential to generate significant environmental impacts in a number of areas. As shown on Table 2-1, all potentially significant impacts would be reduced to a less-than-significant level if the mitigation measures identified in this Initial Study are adopted and implemented.

Table 2-1 summarizes the conclusions of the environmental analysis contained in this Initial Study and presents a summary of impacts and mitigation measures identified. It is organized to correspond with the environmental issues discussed in Chapter 5, Environmental Analysis. Table 2-1 is arranged in four columns: 1) environmental impact; 2) significance without mitigation; 3) mitigation measures; and 4) significance with mitigation. For a complete description of potential impacts, please refer to the specific discussions in Chapter 5, Environmental Analysis.

[3] The capacity of the system would be 3.0 Megawatts (MW) which means the power output at peak performance would be 3.0 MW.

[4] Alternating current is the form in which electric power is delivered to businesses and residences, and it is the form of electrical energy that consumers typically use.

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
AESTHETICS			
AES (a): The proposed project would not have a substantial adverse effect on a scenic vista.	LTS	N/A	N/A
AES (b): The proposed project would not substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway.	LTS	N/A	N/A
AES (c): The proposed project could degrade the existing visual character or quality of the site and its surroundings.	S	**AES (c):** The project applicant shall ensure that the proposed landscape buffer is adequately irrigated and maintained throughout the life of the project. Should any of the proposed landscape plants not survive the initial planting or expire at any time during the life of the project, the applicant shall provide replacement plantings to properly conceal the proposed solar arrays	LTS
AES (d): The proposed project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	LTS	N/A	N/A
AGRICULTURAL AND FORESTRY RESOURCES			
AG (a): The proposed project would not 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.	NI	N/A	N/A
AG (b): The proposed project would not conflict with existing zoning for agricultural use, or a Williamson Act contract.	LTS	N/A	N/A
AG (c): The proposed project would not conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).	N	N/A	N/A
AG (d): The proposed project would not result in the loss of forest land or conversion of forest land to non-forest use.	NI	N/A	N/A
AG (e): The proposed project would not 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 of conversion of forest land to non-forest use.	LTS	N/A	N/A

LTS = Less Than Significant; S = Significant; NI = No Impact

EXECUTIVE SUMMARY

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
AIR QUALITY			
AQ (a): The proposed project would not conflict with or obstruct implementation of the applicable air quality plan.	LTS	N/A	N/A
AQ (b): The proposed project could result in significant air quality impacts associated with fugitive dust during construction.	S	**AQ (b):** The Applicant shall require their construction contractor to comply with the following BAAQMD Best Management Practices for reducing construction emissions of PM_{10} and $PM_{2.5}$: ▪ Water all active construction areas at least twice daily or as often as needed to control dust emissions. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever possible. ▪ Apply water twice daily or as often as necessary to control dust, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites. ▪ Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer). ▪ Sweep public streets daily (with water sweepers using reclaimed water if possible) in the vicinity of the project site, or as often as needed, to keep streets free of visible soil material. ▪ Hydro-seed or apply non-toxic soil stabilizers to inactive construction areas. ▪ Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (e.g., dirt, sand). ▪ Limit vehicle traffic speeds on unpaved roads to 15 mph. ▪ Replant vegetation in disturbed areas as quickly as possible. ▪ Install sandbags or other erosion control measures to prevent silt runoff from public roadways.	LTS
AQ (c): The proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project area is in non-attainment under applicable federal or State	LTS	N/A	N/A

LTS = Less Than Significant; S = Significant; NI = No Impact

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
ambient air quality standards.			
AQ (d): The proposed project would not expose sensitive receptors to substantial pollutant concentrations.	LTS	N/A	N/A
AQ (e): The proposed project would not create or expose a substantial number of people to objectionable odors.	LTS	N/A	N/A
BIOLOGICAL RESOURCES			
BIO (a-1): The proposed project could result in significant impacts to individual California tiger salamander in the remote instance individuals were to disperse onto the site in the future in advance of or during construction.	S	**BIO (a-1): Ensure Avoidance of California tiger salamander.** The following measures shall be implemented to ensure avoidance of individual California tiger salamander (CTS) in the remote instance individuals were to disperse onto the site in the future in advance of or during construction: ▪ Amphibian exclusion fencing shall be installed 14 days prior to the start of construction and maintained until construction of the proposed project is complete. Such fencing shall run along the perimeter of the area of disturbance. Silt fence material may be used to also provide erosion control, however, per CTS standards, it must be at least 36 inches in height (at least 36 inches above ground and buried at least 6 inches below the ground) and stakes must be placed on the inside of the project (side on which work will take place). ▪ Pre-construction surveys for CTS shall be conducted prior to initiation of ground disturbing activities. Surveys are to be conducted by qualified biologists with experience surveying for CTS. Prior to initiating surveys, water trucks will spray the work area to influence emergence. Watering will occur at dusk, trucks will make a single pass, and the qualified biologist will survey the watered area for one hour following the spraying. If individuals are found, work shall not commence until they are moved out of the construction zone to an area approved by the California Department of Fish and Wildlife (CDFW). ▪ A qualified biologist with experience surveying for CTS shall be present during initial ground disturbing activities. ▪ To avoid entrapment of animals during construction, pipes or similar structures shall be capped if stored overnight. Construction	LTS

LTS = Less Than Significant; S = Significant; NI = No Impact

EXECUTIVE SUMMARY

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
		personnel shall inspect open trenches at the beginning and end of each workday for trapped CTS individuals. If individuals are found, an approved biologist shall be relocated by a qualified biologist. ▪ Tightly woven fiber netting or similar material shall be used for erosion control or other purposes to ensure amphibians do not get trapped. Plastic mono-filament netting (erosion control matting), rolled erosion control products, or similar material shall not be used.	
BIO (a-2): The proposed project could result in significant impacts to individual California red-legged frog in the remote instance individuals were to disperse onto the site in the future in advance of or during construction.	S	**BIO (a-2): Ensure Avoidance of California Red-legged Frog.** The following measures shall be implemented in locations within 100 feet of any drainage or seasonal wetland on the site to ensure avoidance of individual California red-legged frog (CRLF) in the remote instance individuals were to disperse onto the site in the future in advance of or during construction: ▪ Amphibian exclusion fencing shall be installed 14 days prior to the start of construction and maintained until construction of the proposed project is complete. Such fencing shall run along the perimeter of the area of disturbance. Silt fence material may be used to also provide erosion control, however, per CRLF standards, it must be at least 36 inches in height (at least 36 inches above ground and buried at least 6 inches below the ground) and stakes must be place on the inside of the project (side on which work will take place). ▪ Pre-construction surveys for CRLF shall be conducted prior to initiation of project activities (including fence installation) and within 48 hours of the start of ground disturbance activities following completion of exclusion fence installation. Surveys are to be conducted by qualified biologists with experience surveying for CRLF. ▪ All workers shall be trained by the qualified biologist to understand the remote potential for occurrence of this listed species, need to avoid any potential inadvertent take, and process to follow if a frog is encountered, that all work must stop and the qualified biologist must determine whether it is CRLF before work proceeds. ▪ No earth disturbing activities shall take place during rain events	LTS

LTS = Less Than Significant; S = Significant; NI = No Impact

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
		when there is potential for accumulation greater than 0.25 inch in a 24-hour period. In addition, no earth disturbing activities shall occur for 48 hours following rain events in which 0.25 inch of rain accumulation within 24 hours. ▪ Tightly woven fiber netting or similar material shall be used for erosion control or other purposes to ensure amphibians do not get trapped. Plastic mono-filament netting (erosion control matting), rolled erosion control products, or similar material shall not be used.	
BIO (a-3): The proposed project could result in significant impacts to special-status plant species known to occur in the project vicinity.	S	**BIO (a-3)**: A qualified botanist shall conduct appropriately-timed rare plant surveys during late April and early May to confirm absence of any special-status plant species on the site. The survey shall focus on the special-status plant species considered to have a remote probability for occurrence on the project site. The surveys shall be completed and a report of findings submitted to the County before the onset of any initial ground-disturbing activity or construction associated with project implementation. If any special-status plant species are encountered, then any occurrence(s) shall be avoided or potential impacts adequately mitigated as part of potential future project development. The qualified botanist shall develop and implement a Special-Status Plant Species Mitigation and Monitoring Program (SSPSMMP). The SSPSMMP shall only be required if a listed species or those with a ranking of 1A, 1B or 2 of the California Native Plant Society (CNPS) Inventory are encountered during the preconstruction survey. Potential impacts on any species with a ranking of 3 and 4 of the CNPS Inventory would not be considered significant and no additional mitigation would be required for these species if encountered during the systematic survey(s). The SSPMMP shall be prepared in consultation with the CDFW and shall be approved by Alameda County prior to any initial ground-disturbing activity or construction. The SSPMMP shall be based on the status and vulnerability of the species present, with avoidance of all or a majority of any populations on the site the preferred method of mitigation. Where complete or even partial avoidance of any special-status plant populations on the site is considered infeasible, options	LTS

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EXECUTIVE SUMMARY

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
		for mitigation may include a program to salvage and reestablish the population at an alternative, suitable location. Details of any salvage and habitat recreation effort shall include the following criteria and performance standards measures may include: ▪ Collection of seeds during the appropriate developmental stage of the plan. ▪ Procedures for sowing techniques appropriate to the life cycle of the plant. ▪ Preparation of a maintenance and monitoring plan specific to the environmental conditions necessary for survival of the new population. Maintenance and monitoring shall be provided for a minimum of five years to determine success of re-seeding and habitat creation, and need for additional preservation. ▪ Identification of funding sources to provide implementation of the maintenance and monitoring plan in consultation with the qualified plant ecologist, landscape architect, and civil engineer. ▪ In addition, preservation of another existing occurrence of the affected special-status plant species shall be required if monitoring indicates that the reestablishment efforts have not been successful after five years. The preservation program shall provide for permanent protection of a different existing population in Alameda County, which is equal or larger in size than that encountered on the site (minimum 1:1 replacement), through land acquisition or use of a conservation easement. Any off-site mitigation lands shall include establishment of a management endowment as necessary to provide for long-term management of the preserved population.	
BIO (a-4): Ground disturbing activities associated with the proposed project could result in significant impacts to active nests resulting in the incidental loss of fertile eggs or nestlings or nest abandonment.	S	**BIO (a-4):** Ground disturbing activities shall be performed in compliance with the Migratory Bird Treaty Act and relevant sections of the California Department of Fish and Wildlife (CDFW) code to avoid loss of nests in active use. This shall be accomplished by scheduling ground disturbing activities outside of the bird nesting season (which occurs from February 1 to August 31) to avoid possible impacts on nesting birds. Alternatively, ground disturbing activities cannot be scheduled during the non-nesting season (September 1 to January 31), a pre-construction nesting survey shall be conducted. The	LTS

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
		pre-construction nesting survey shall include the following: ▪ A qualified biologist (Biologist) shall conduct a pre-construction nesting bird (both passerine and raptor) survey within seven calendar days prior to ground disturbing activities. ▪ If no nesting birds or active nests are observed, no further action is required ground disturbing activities shall occur within seven calendar days of the survey. ▪ If any active nests are encountered, the Biologist shall determine an appropriate disturbance-free buffer zone to be established around the nest location(s) until the young have fledged. Buffer zones vary depending on the species (i.e., typically 75 to 100 feet for passerines and 300 feet for raptors) and other factors such as ongoing disturbance in the vicinity of the nest location. If necessary, the dimensions of the buffer zone shall be determined in consultation with the CDFW. ▪ Orange construction fencing, flagging, or other marking system shall be installed to delineate the buffer zone around the nest location(s) within which no construction-related equipment or operations shall be permitted. Continued use of existing facilities such as surface parking and site maintenance may continue within this buffer zone. ▪ Construction activities shall be restricted from the buffer zone until the Biologist has determined that young birds have fledged and the buffer zone is no longer needed. ▪ A survey report of findings verifying that any young have fledged shall be submitted by the Biologist for review and approval by the County prior to initiation of any construction activities within the buffer zone. Following written approval by the County construction within the nest-buffer zone may proceed.	
BIO (b): The proposed project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife (CDFW) or United States Fish and Wildlife Service (USFWS)	NI	N/A	N/A

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EXECUTIVE SUMMARY

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
BIO (c): Grading and other improvement activities associated with the proposed project could result in significant direct and indirect impacts to two potential season wetlands.	S	**BIO (c):** The project applicant shall realign the proposed perimeter swale to provide a 25 foot buffer between the potential wetland and the proposed swale. Prior to the initiation of ground disturbing activities, temporary orange construction fencing shall be installed around the potential wetland features to prohibit inadvertent damage to the potential wetland features during construction activities.	LTS
BIO (d): The proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	LTS	N/A	N/A
BIO (e): The proposed project would not conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.	LTS	N/A	N/A
CULTUAL RESOURCES			
CULT (a): The proposed project would not cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5.	NI	N/A	N/A
CULT (b): Grading and other improvement activities associated with the proposed project could impact unknown archaeological resources.	S	**CULT (b)**: If any prehistoric or historic subsurface cultural resources are discovered during ground-disturbing activities, all work within 50 feet of the resources shall be halted and a qualified archaeologist shall be consulted to assess the significance of the find according to CEQA Guidelines Section 15064.5. If any find is determined to be significant, representatives from the County and the archaeologist would meet to determine the appropriate avoidance measures or other appropriate mitigation. All significant cultural materials recovered shall be, as necessary and at the discretion of the consulting archaeologist, subject to scientific analysis, professional museum curation, and documentation according to current professional standards. In considering any suggested mitigation proposed by the consulting archaeologist to mitigate impacts to historical resources or unique archaeological resources, the County shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, proposed project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g., data recovery) would be instituted. Work may proceed on other	LTS

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
		parts of the project site while mitigation for historical resources or unique archaeological resources is being carried out.	
CULT (c): Grading and other improvement activities associated with the proposed project could impact unknown paleontological resources or unique geologic features.	S	**CULT (c)**: In the event that fossils or fossil-bearing deposits are discovered during construction, excavations within 50 feet of the find shall be temporarily halted or diverted. The contractor shall notify a qualified paleontologist to examine the discovery. The paleontologist shall document the discovery as needed, in accordance with Society of Vertebrate Paleontology standards (Society of Vertebrate Paleontology 1995), evaluate the potential resource, and assess the significance of the finding under the criteria set forth in CEQA Guidelines Section 15064.5. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the project proponent determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project based on the qualities that make the resource important. The plan shall be submitted to the County for review and approval prior to implementation.	LTS
CULT (d): Grading and other improvement activities associated with the proposed project could impact unknown human remains interred outside of dedicated cemeteries.	S	**CULT (d):** Procedures of conduct following the discovery of human remains have been mandated by Health and Safety Code Section 7050.5, Public Resources Code Section 5097.98 and the California Code of Regulations Section 15064.5(e) (CEQA). According to the provisions in CEQA, if human remains are encountered at the site, all work in the immediate vicinity of the discovery shall cease and necessary steps to ensure the integrity of the immediate area shall be taken. The Alameda County Coroner shall be notified immediately. The Coroner shall then determine whether the remains are Native American. If the Coroner determines the remains are Native American, the Coroner shall notify the Native American Heritage Commission (NAHC) within 24 hours, who will, in turn, notify the person the NAHC identifies as the Most Likely Descendant (MLD) of any human remains. Further actions shall be determined, in part, by the desires of the MLD. The MLD has 48 hours to make recommendations regarding the disposition of the remains following notification from the NAHC of the discovery. If the MLD does not make recommendations within 48 hours, the owner shall, with	LTS

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EXECUTIVE SUMMARY

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
		appropriate dignity, reinter the remains in an area of the property secure from further disturbance. Alternatively, if the owner does not accept the MLD's recommendations, the owner or the descendent may request mediation by the NAHC.	
TRIBAL CULTURAL RESOURCES			
TCR (a): Grading and other improvement activities associated with the proposed project could impact unknown Tribal Cultural Resources.	S	**TCR (a-1):** Implement Mitigation Measure CULT (b). **TRC (a-2)**: Implement Mitigation Measure CULT (c).	LTS
GEOLOGY AND SOILS			
GEO (a): Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving: i) Strong seismic ground shaking; ii) Seismic-related ground failure, including liquefaction; iii) Landslides, mudslides or other similar hazards.	NI	N/A	N/A
GEO (b): The proposed project would not in substantial soil erosion or the loss of topsoil.	LTS	N/A	N/A
GEO (c): The proposed project would not 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.	NI	N/A	N/A
GEO (d): The proposed project would not located on expansive soil, as defined in Section 1803.5.3 of the California Building Code, creating substantial risks to life or property.	LTS	N/A	N/A
GEO (e): The proposed project would not have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of wastewater.	NI	N/A	N/A
GREENHOUSE GAS EMISSIONS			
GHG (a): The proposed project would not directly and indirectly generate greenhouse gas emissions that would result in an increase in community emissions from baseline conditions that would have a significant impact on the environment.	LTS	N/A	N/A

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
GHG (b): The proposed project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	LTS	N/A	N/A
HAZARDS AND HAZARDOUS MATERIALS			
HAZ (a): The proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	LTS	N/A	N/A
HAZ (b): The proposed project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	LTS	N/A	N/A
HAZ (c): The proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25-miles of an existing or proposed school.	NI	N/A	N/A
HAZ (d): The proposed project would not be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would not create a significant hazard to the public or the environment.	NI	N/A	N/A
HAZ (e): The proposed project is not located within an airport land use plan or, where such a plan has not been adopted, is not within two miles of a public airport or public use airport, and would not result in a safety hazard for people residing or working in the project area.	NI	N/A	N/A
HAZ (f): The proposed project is not within the vicinity of a private airstrip, and would not the project result in a safety hazard for people residing or working in the project area.	NI	N/A	N/A
HAZ (g): The proposed project would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.	NI	N/A	N/A
HAZ (h): The proposed project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.	NI	N/A	N/A

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
HYDROLOGY AND WATER QUALITY			
HYDRO (a): The proposed project would not violate any water quality standards or discharge requirements.	LTS	N/A	N/A
HYDRO (b): The proposed project would not 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.	LTS	N/A	N/A
HYDRO (c): The proposed project would not 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 amount of surface runoff in a manner which would result in substantial erosion or siltation on- or off-site.	LTS	N/A	N/A
HYDRO (d): Implementation of the proposed project would not 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.	LTS	N/A	N/A
HYDRO (e): The proposed project would not create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems.	LTS	N/A	N/A
HYDRO (f): The proposed project would not otherwise substantially degrade water quality.	LTS	N/A	N/A
HYDRO (g): The proposed project would not 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.	NI	N/A	N/A
HYDRO (h): The proposed project would not place within a 100-year flood hazard area structures which would impede or redirect flood flows.	NI	N/A	N/A
HYDRO (i): The proposed project would not 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.	NI	N/A	N/A
HYDRO (j): The proposed project would not be inundated by seiche, tsunami, or mudflow.	NI	N/A	N/A

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
LAND USE AND PLANNING			
LU (a): The proposed project would not physically divide an established community.	LTS	N/A	N/A
LU (b): The proposed project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.	LTS	N/A	N/A
LU (c): The proposed project would not conflict with any applicable habitat conservation plan or natural community conservation plan.	LTS	N/A	N/A
MINERAL RESOURCES			
MR (a): The proposed project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.	NI	N/A	N/A
MR (b): The proposed project would not result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.	NI	N/A	N/A
NOISE			
NOISE (a): The proposed project would not cause exposure of people 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.	LTS	N/A	N/A
NOISE (b): The proposed project would not cause exposure of people to, or generation of, excessive groundborne vibration or groundborne noise levels.	LTS	N/A	N/A
NOISE (c): The proposed project would not cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the proposed project.	LTS	N/A	N/A
NOISE (d): The proposed project would cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.	LTS	N/A	N/A

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EXECUTIVE SUMMARY

TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
NOISE (e): The proposed project would be within an airport land use plan or, where such a plan has not been adopted, within two 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.	LTS	N/A	N/A
NOISE (f): The proposed project would be located within the vicinity of a private airstrip, and would not expose people residing or working in the project area to excessive noise levels.	LTS	N/A	N/A
POPULATION AND HOUSING			
POP (a): The proposed project would not induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).	NI	N/A	N/A
POP (b): The proposed project would not displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere.	NI	N/A	N/A
POP (c): The proposed project would not displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.	NI	N/A	N/A
PUBLIC SERVICES			
PS (a): The proposed project would not result in the need for new or physically altered fire protection facilities, police protection facilities, school facilities, or library facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.	NI	N/A	N/A
PARKS AND RECREATION			
PR (a): The proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.	NI	N/A	N/A
PR (b): The proposed project does not include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.	NI	N/A	N/A

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
TRANSPORTATION AND CIRCULATION			
TRANS (a): The proposed project would not 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.	LTS	N/A	N/A
TRANS (b): The proposed project would not 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.	LTS	N/A	N/A
TRANS (c): The proposed project would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.	NI	N/A	N/A
TRANS-(d): The proposed project would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	LTS	N/A	N/A
TRANS (e): The proposed project would not result in inadequate emergency access.	NI	N/A	N/A
TRANS (f): The proposed project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	NI	N/A	N/A
UTILITIES AND SERVICE SYSTEMS			
UTIL (a): The proposed project would not exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.	NI	N/A	N/A
UTIL (b): The proposed project would not require or result in the construction of new water facilities or expansion of existing facilities, the construction of which would cause significant environmental effects.	NI	N/A	N/A

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TABLE 2-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
UTIL (c): The proposed project would not require 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.	LTS	N/A	N/A
UTIL (d): The proposed project would have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.	LTS	N/A	N/A
UTIL (e): The proposed project would not result in the determination by the wastewater treatment provider, which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	NI	N/A	N/A
UTIL (f): The proposed project would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.	LTS	N/A	N/A
UTIL (g): The proposed project would comply with federal, State, and local statutes and regulations related to solid waste.	LTS	N/A	N/A
UTIL (h): The proposed project would not result in a substantial increase in natural gas and electrical service demands, and would not require new energy supply facilities and transmission infrastructure or capacity enhancing alterations to existing facilities.	NI	N/A	N/A

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3. Initial Study Checklist

1.	**Title:**	Livermore Community Solar Farm Project PLN2016-00049
2.	**Lead Agency Name and Address:**	Alameda County Planning Department 224 West Winton Avenue, Room 111 Hayward, CA 94544
3.	**Contact Person and Phone Number:**	Damien Curry, Planner II (510) 670-6684
4.	**Location:**	4871 North Livermore Avenue Livermore, CA 94550
5.	**Applicant's Name and Address:**	SunWalker Energy 1901 Harrison Street, Suite 1100 Oakland, CA 94612 (650) 387-7261
6.	**General Plan Land Use Designations:**	Large Parcel Agriculture
7.	**Zoning:**	Agricultural District (A-District)
8.	**Description of Project:**	See Project Description in Chapter 3
9.	**Surrounding Land Uses and Setting:**	See Project Description in Chapter 3
10.	**Other Required Approvals:**	See Project Description in Chapter 3

11. **Have California Native American Tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun?:** Alameda County has not received any request from any Tribes in the geographic area with which it is traditionally and culturally affiliated with or otherwise to be notified about projects in Alameda County.

INITIAL STUDY CHECKLIST

Environmental Factors Potentially Affected

The environmental factors listed below would be affected by the proposed project, involving at least one impact that is a Potentially Significant Impact, as indicated by the checklist on the following pages.

■ Aesthetics	❒ Agriculture & Forestry Resources	■ Air Quality
■ Biological Resources	■ Cultural Resources	■ Tribal Cultural Resources
❒ Geology & Soils	❒ Greenhouse Gas Emissions	❒ Hazards & Hazardous Materials
❒ Hydrology & Water Quality	❒ Land Use	❒ Mineral Resources
❒ Noise	❒ Population & Housing	❒ Public Services
❒ Recreation	❒ Transportation/Traffic	❒ Utilities & Service Systems
❒ Mandatory Findings of Significance		

Determination:

On the basis of this initial evaluation:

❒ I find that the proposed project COULD NOT have a significant effect on the environment and a NEGATIVE DECLARATION will be prepared.

☑ I find that, although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the City. A MITIGATED NEGATIVE DECLARATION will be prepared.

❒ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT (EIR) will be prepared.

❒ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

❒ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature	Date
Printed Name	Title

4. Project Description

SunWalker Energy, the project applicant, is proposing the Livermore Community Solar Farm project (proposed project or project), to develop a 58.7-acre solar photovoltaic (PV) facility with a capacity of 6 megawatt (MW) alternating current (AC) on the 71.64-acre parcel located at 4871 North Livermore Avenue in Alameda County.[1,2] Construction of the proposed project is expected to occur in two phases over a one-year period. Phase I would be located on the southern portion of the project site adjacent to May School Road, and encompass 30.8 acres. Phase 2 would be located on the northern portion of the project site adjacent to North Livermore Avenue, and encompass 27.9 acres.

This chapter provides a detailed description of the proposed project, including the location, setting, characteristics of the project site, a project construction schedule, and required permits and approvals. Additional descriptions of the environmental setting discussions are included in Chapter 4, Environmental Analysis and Findings, of this Initial Study.

4.1 PROJECT SITE LOCATION AND SITE CHARACTERISTICS

4.1.1 PROJECT SITE LOCATION AND SETTING

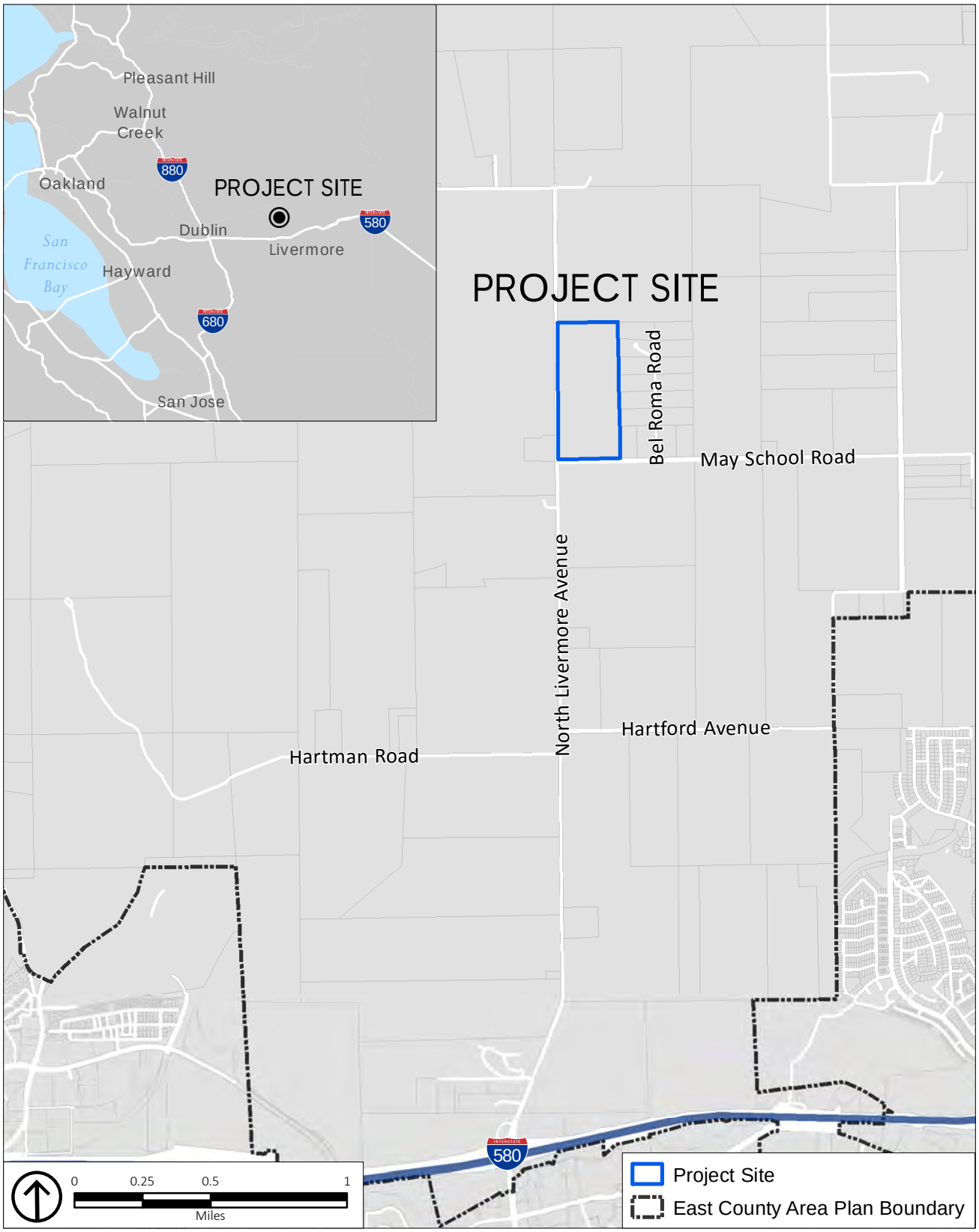
As shown on Figure 4-1, the project site is located in the northeast area of unincorporated Alameda County. Alameda County is bordered by Contra Costa County to the north, San Joaquin County to the east, Santa Clara County to the south, and the City and County of San Francisco to the west. Regional access to Alameda County is provided via Interstate-80 (I-80), I-880, I-680, and I-580. Direct access to the project site is provided via the I-580 interchange at North Livermore Avenue.

As shown on Figure 4-2, the project site is located in a rural agricultural area north of the I-580 on the corner of North Livermore Avenue and May School Road. The project site is bounded by agricultural land to the north, south, and west, and single-family housing to the east. In addition, a PG&E power station is located opposite North Livermore Avenue from the project site on the corner of North Livermore Avenue and May School Road. Local access to the project site is provided via Manning Road, May School Road, and North Livermore Avenue.

The closest public airport to the project site is Livermore Municipal Airport, located 4.5 miles southwest of the project site in the City of Livermore. The closest private aircraft facility is the PG&E Livermore Training

[1] The capacity of the system would be 3.0 Megawatts (MW) which means the power output at peak performance would be 3.0 MW.

[2] Alternating current is the form in which electric power is delivered to businesses and residences, and it is the form of electrical energy that consumers typically use.



Source: ESRI, 2017; PlaceWorks, 2018.

Figure 4-1
Regional and Vicinity Location

Source: Google Earth, PlaceWorks, 2018.

0 1,000
Scale (Feet)

Project Site

Figure 4-2
Aerial of Project Site and Surrounding Area

Center Heliport located approximately 4 miles southeast of the proposed project site.[3] The ValleyCare Medical Center Heliport is located 7 miles southwest of the project site in the City of Pleasanton, and Byron Airport, a public-use airport, is located at 550 Eagle Court in Byron, approximately 9 miles northeast of the project site.[4]

4.1.2 EXISTING SITE CONDITIONS

The 71.64-acre site is assigned Assessor's Parcel Number (APN) 902-0002-003. The project site is generally undeveloped with the exception of an existing 1,100-square-foot single-family home and associated structures located on the southwest corner of the project site. The remainder of the project site is undeveloped and actively grazed by livestock. Existing vegetation is largely comprised of non-native grasses, mature eucalyptus along the perimeter of the property, and a single wetland feature along the northern boundary of the existing single-family home.

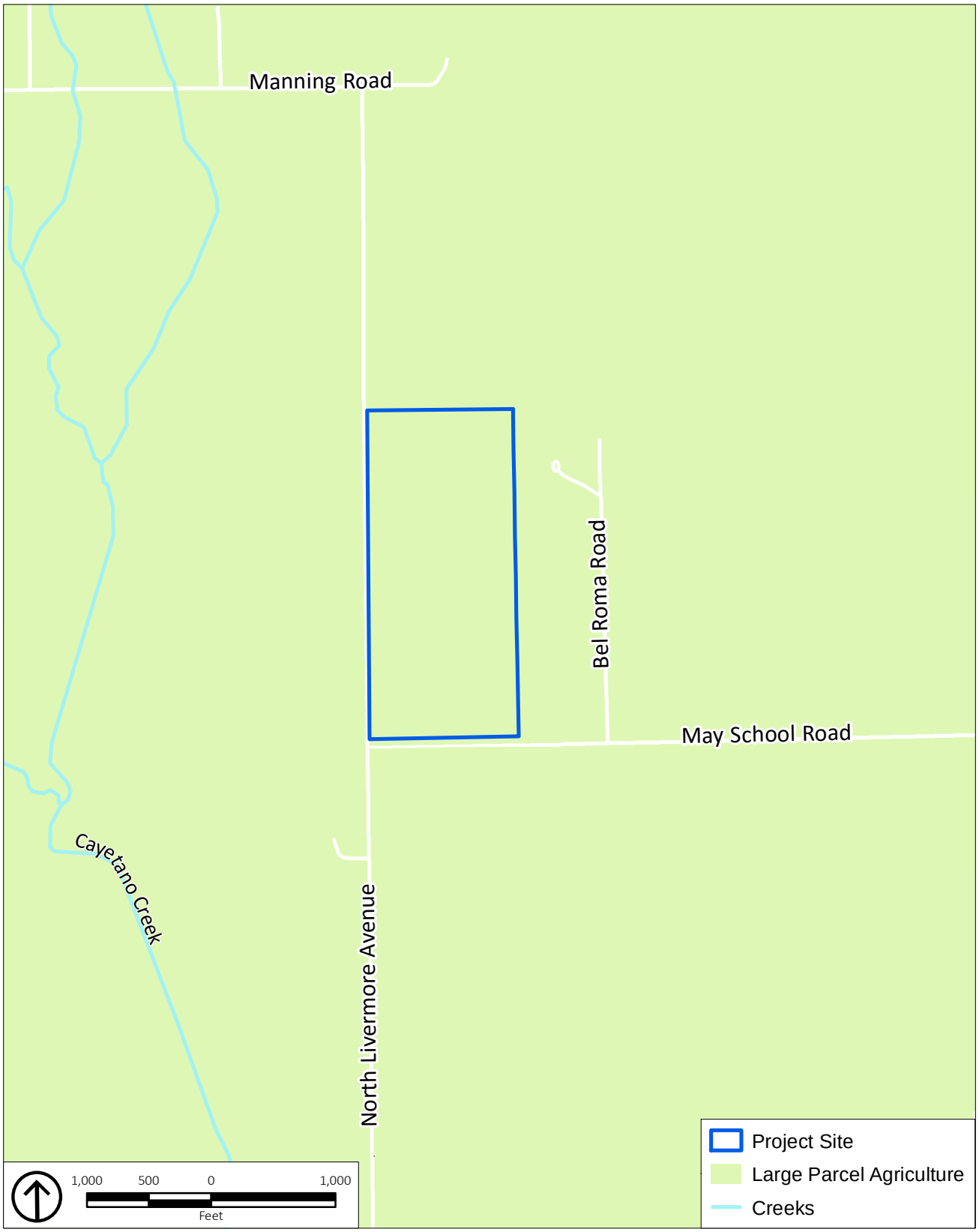
4.1.3 GENERAL PLAN AND ZONING DESIGNATION

4.1.3.1 GENERAL PLAN

The Alameda County General Plan consists of countywide elements and three Area Plans; the *Castro Valley Area Plan*, the *Eden Area Plan*, and the *East County Area Plan*. Each Area Plan contains land use and circulation elements for their respective geographic areas, as well as area-specific goals, policies, and actions pertaining to open space, conservation, safety, and noise. The countywide elements include housing, conservation, open space, noise, safety, and scenic route elements. Each countywide element contains goals, policies, and actions that apply to the entire unincorporated area.[5] The project site is located within the *East County Area Plan* (ECAP), as amended in 2000 by voter approved Measure D. The Planning Area encompasses 418 square miles of eastern Alameda County including the cities of Dublin, Livermore, Pleasanton, a portion of Hayward, and surrounding unincorporated areas. The subject parcel is located outside of the Urban Growth Boundary.

As shown on Figure 4-3, the ECAP designates the project site as Large Parcel Agriculture. This designation permits agricultural uses, agricultural processing facilities (for example wineries, olive presses), limited agricultural support service uses (for example animal feed facilities, silos, stables, and feed stores), secondary residential units, visitor-serving commercial facilities (by way of illustration, tasting rooms, fruit stands, bed and breakfast inns), recreational uses, public and quasi-public uses, solid waste landfills and related waste management facilities, quarries, windfarms and related facilities, utility corridors, and similar uses compatible with agriculture.

[3] Airnav.com, accessed March 29, 2018.
[4] AirNav, Airport information, http://www.airnav.com/airports/us/CA, accessed on February 23, 2018.
[5] Alameda County Community Development Agency Planning Department, Alameda County General Plan Annual Report for 2016, pages 1 and 2.



Source: Alameda County, 2017; PlaceWorks, 2018.

Figure 4-3
East County Area Plan Land Use

4.1.3.2 ZONING

As shown on Figure 4-4, the project site is zoned Agricultural (A) District. Per Alameda County Municipal Code (ACMC) Section 17.06.030, the uses permitted in the A zoning district include one-family dwelling or one-family mobile home; one secondary dwelling unit; crop, vine or tree farm, truck garden, plant nursery, greenhouse, apiary, aviary, hatchery, horticulture; raising or keeping of poultry, fowl, rabbits, sheep or goats or similar animals; grazing, breeding or training of horses or cattle; winery or olive oil mill; fish hatcheries; and public or private hiking trails. Per ACMC Section 17.06.040 conditional uses may also include privately owned wind-electric generators.

4.2 PROPOSED PROJECT

4.2.1 PROJECT COMPONENTS

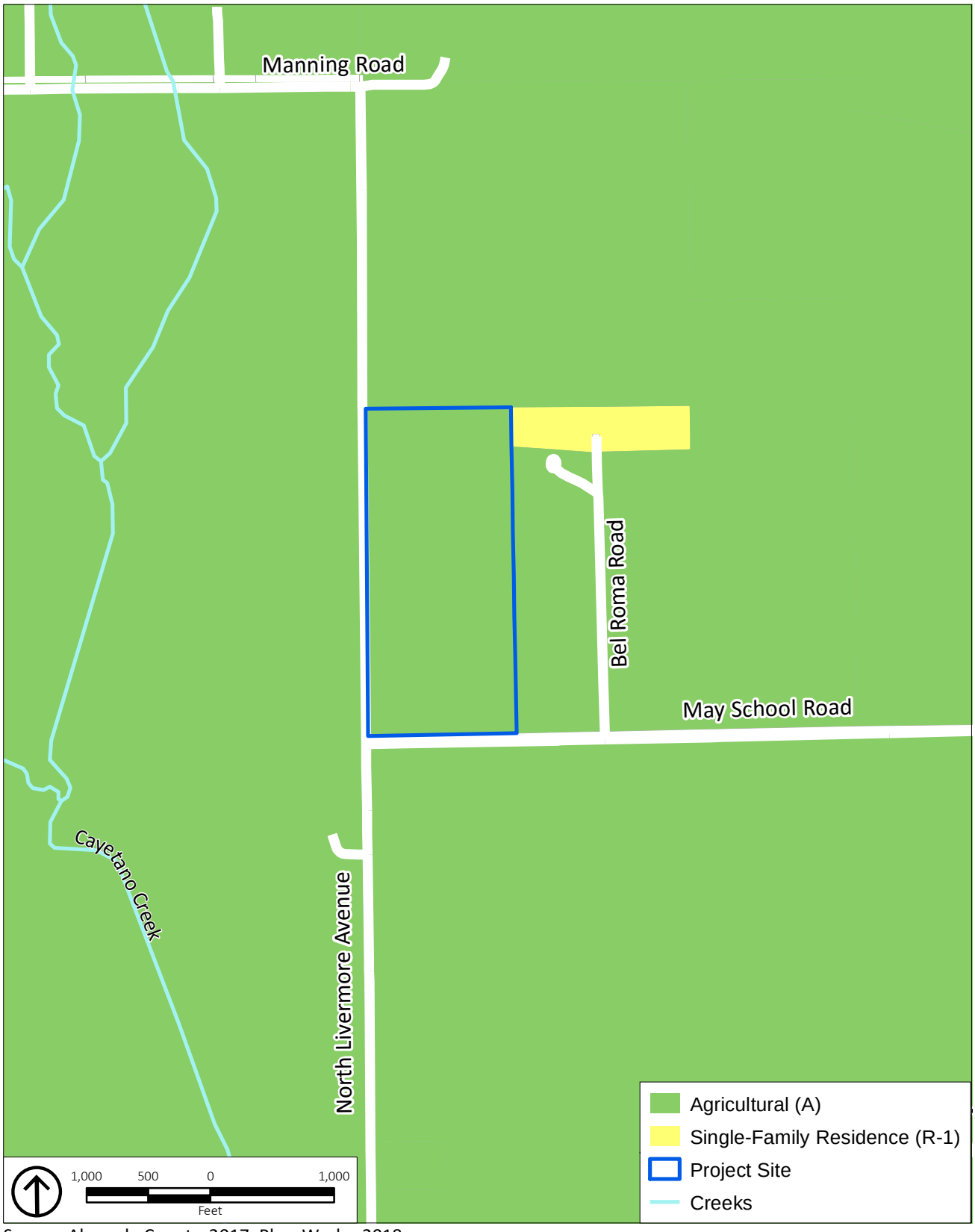
The proposed PV facility would include specially designed panels that convert solar energy, or sunlight, into electricity. The iridescent blue panels that are used to capture sunlight, called modules, would be linked together to form an array. Each array requires an inverter which is necessary to convert direct current (DC) power into AC which is the form of electrical energy that consumers typically use. In total, the proposed project would include 23,316 PV modules, 48 inverters, four transformers, tracking and mounting systems, connective wire, a control center, and a meteorological station. Additional on-site components include two 20,250 gallon AQUABLOX® D-Raintanks® and two 5,000 gallon water tanks.[6] The non-reflective equipment would be painted in neutral colors, prior to delivery.

4.2.2 SITE PREPARATION AND SOLAR INSTALLATION

No demolition activities would occur as part of the proposed project. The existing single-family home, associated structures, and existing fence along the perimeter of the property would remain on-site and no changes to these structures are proposed. Construction of the proposed project is expected to occur in two phases over a one-year period. Phase I would be located on the southern portion of the project site adjacent to May School Road, and encompass 30.8 acres. Phase 2 would be located on the northern portion of the project site adjacent to North Livermore Avenue, and encompass 27.9 acres. Each phase is anticipated to take between 4 and 6 months, and will employ approximately 25 people.

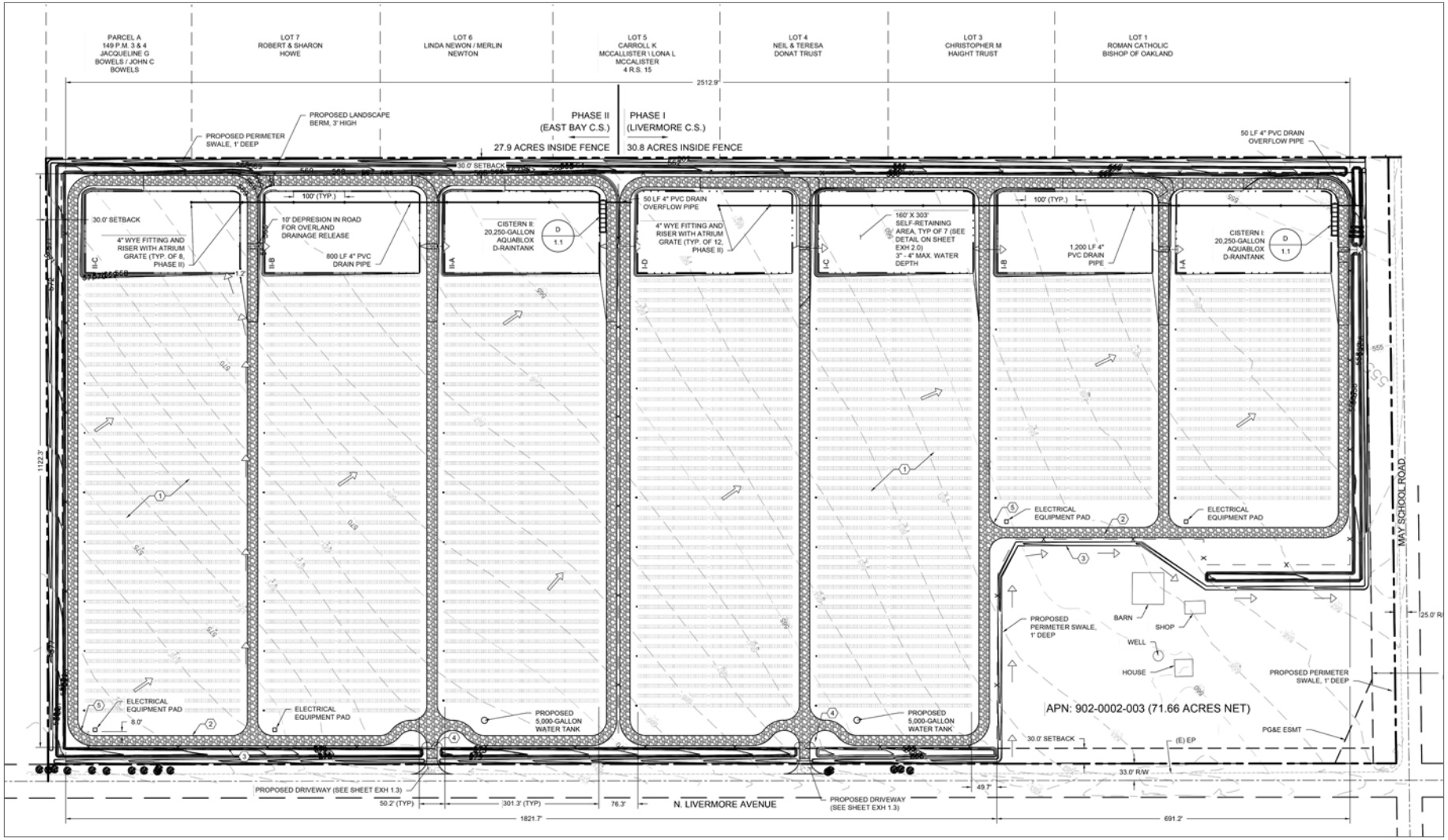
Site preparation would involve grading and earthwork to construct the electrical pads, basin, swale, and berm. The proposed project would introduce approximately 1,370 square feet of concrete to construct four electrical pads for use as a base for the inverters. As shown on Figure 4-5, the proposed project would construct seven detention basins along the eastern boundary of the project site, requiring the removal of approximately 11,853 cubic yards of soil. Each detention basin would measure 160 feet in the east to west direction and 303 feet in the north to south direction. A swale with a maximum bottom width of 1-foot would be constructed along the inside perimeter of the existing fence requiring the removal

[6] An AQUABLOX D-Raintank is a lightweight structural water catchment system manufactured using lightweight recycled materials, http://www.rainxchange.com/products/aquablox.php, accessed February 27, 2018.



Source: Alameda County, 2017; PlaceWorks, 2018.

Figure 4-4
Existing Zoning



Source: Blue Oak Energy, 2018.

0 400
Scale (Feet)

PROPERTY LINE
RIGHT OF WAY
OFFSET
565 (E) MAJOR CONTOUR
562 (E) MINOR CONTOUR
565 (N) MAJOR CONTOUR
562 (N) MINOR CONTOUR
OVERLAND DRAINAGE RELEASE DIRECTION
PROPOSED DIVERTED DRAINAGE
SOLAR TRACKER
(N) CLASS 2 AGGREGATE BASE (AB)
(N) ASPHALT CONCRETE
(N) FENCE

Figure 4-5
Proposed Site Plan

of approximately 1,383 cubic yards of soil. Installation of the AQUABLOX® D-Raintanks® will require a total of 350 cubic yards of excavation. Additional earthwork activities include the construction of a 3-foot earth berm along the inside perimeter of the proposed swale requiring the addition of 10,000 cubic yards of soil. In addition to the existing fence, a 6-foot chain link fence with safety signage would be constructed along the perimeter of the solar arrays. The total earthwork for the proposed project would be 13,536 cubic yards. The soil removed from the project site would be utilized as fill for the proposed earth berm, accordingly the total cut and fill of soil would be balanced and no export of material is required. Up to 15 different vehicles are expected to be stored on-site during the construction phase of the project. Construction equipment and vehicles include graders, compactors, trenchers, excavators, water trucks, dump trucks, loaders, skid steers, backhoes, pile drivers, forklifts, and pickup trucks. Site preparation and construction activities would be implemented as required under the ACMC Chapter 16.36, Grading Erosion and Sediment Control, and Section 17.64.150, Stormwater management.

As shown on Figure 4-5, Phase I of the proposed project would include installation of 134 rows of PV solar arrays comprised of 11,658 solar modules on the 30.8 acre site. Phase 2 of the proposed project would also install 134 rows of PV solar arrays comprised of 11,658 solar modules on the 27.9 acre site. The majority of the solar equipment would be delivered to the project site and assembled in situ. A total of 210 haul trips would be required to deliver the project materials to the project site. Installation of the solar arrays would be non-permanent. Ground screws would be installed 6 feet into the ground using lightweight machinery to drill. The solar modules would be mounted onto the ground screws and held approximately 5 feet above the ground by a lightweight metal frame. The support frame would touch the ground at only three points: two small wheels, approximately 1-foot in diameter, and an earth screw which is approximately 4 feet long by 6 inches wide. The wheels and earth screw would be mounted on the vertices of a lightweight steel triangular structure parallel to the ground which would serve as the “base” of the structure. A small electric motor would move the structure in an arc at a very slow pace; approximately 0.002 miles per hour, and the wheel would work to stabilize the solar modules. This mechanism allows the module’s PV system to track the sun’s movement across the sky. At maximum tilt, the solar arrays would reach a maximum height of 7 feet. An electrical-powered video surveillance system would be installed on-site for security purposes. The system would connect to a central system at the equipment pad.

4.2.3 SITE ACCESS

Access to the project site would be provided via two gated unpaved driveways located on North Livermore Avenue. Emergency access may also be available along adjacent ranch roads. In addition, a 20-foot-wide all weather pervious internal maintenance road will be constructed to provide access to all project components. The proposed access road would be overlaid with 5,211 cubic yards of crushed aggregate rock. The crushed aggregate rock would be delivered to the project site, requiring a total of 193 haul trips.

4.2.4 LIGHTING

Existing sources of lighting in the vicinity of the project include streetlights along area roadways and exterior lighting from nearby residential development. No on-site lighting is proposed as part of the project.

4.2.5 LANDSCAPING

As described above, existing vegetation on the project site is largely comprised of non-native grasses, mature eucalyptus along the perimeter of the property, and a single wetland feature along the northern boundary of the existing single-family home. Site preparation and installation activities would not necessitate the removal of any existing trees. As shown on Figures 4-6 to 4-10, the proposed project would introduce a total of 805 native shrubs ranging in height from 8 to 15 feet, at maturity. Proposed shrubs include California native Sugar bush (*Rhus ovata*), Toyon (*Heteromeles arbutifolia*), Pacific sunset flannel bush (*Fremontodendron pacific sunset*), Island bush poppy (*Dendromecon harfordii*), and Howard McMinn manzanita (*Arctostaphylos densiflora*). As shown on Figure 4-11, native shrubs would be planted within the previously described earth berm proposed for the site perimeter. The native shrubs would serve as a 5-foot buffer to screen views of the PV facility from the public right-of-way. The proposed landscape would also include plantings of mature vines along the proposed 6-foot chain link fence.

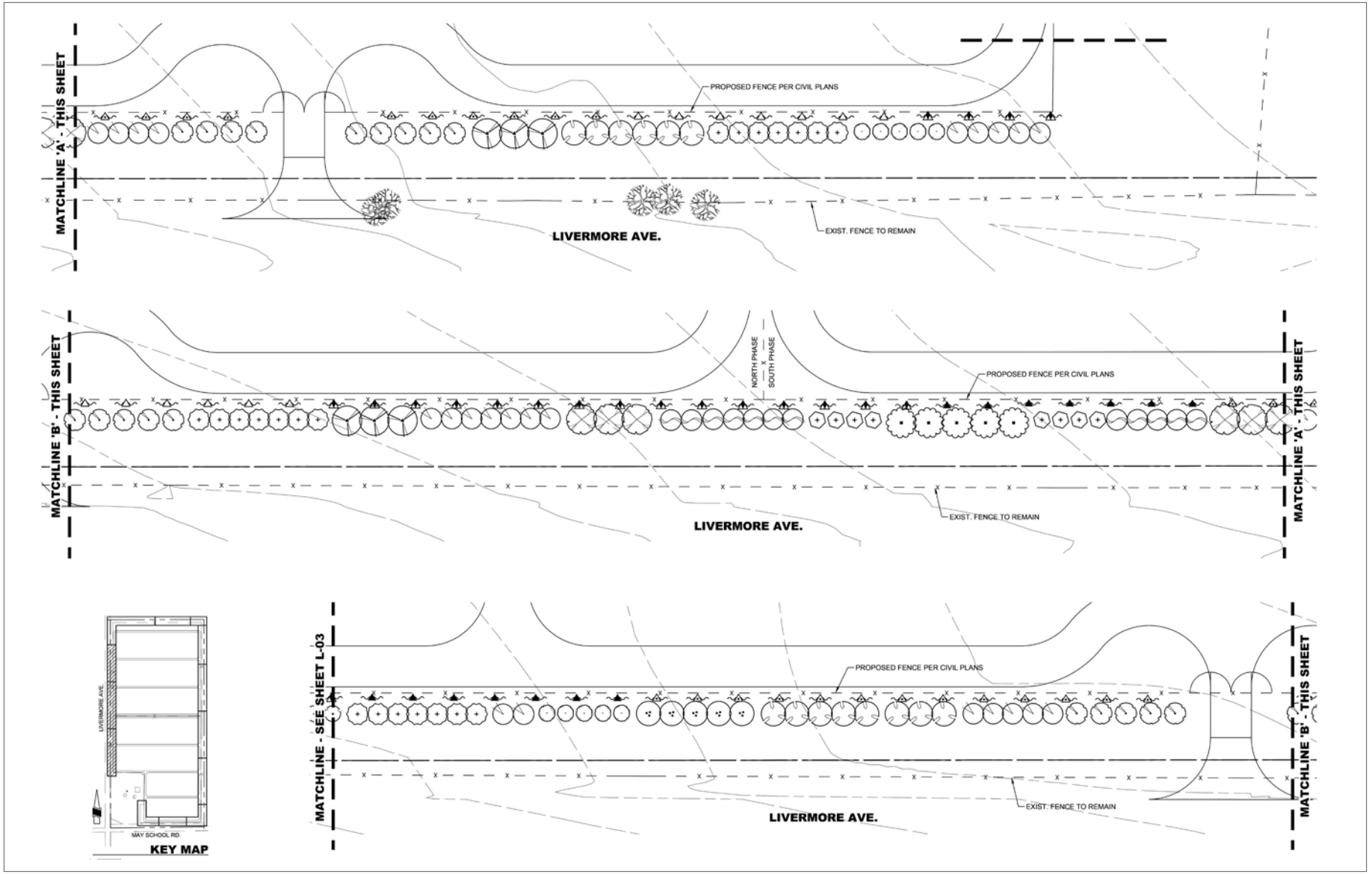
All required landscaping would use plant material compliant with the State Water Conservation water use classification of landscape species plant materials list, the State Water Resources Board's bio-infiltration plant lists, and EBMUD plant materials list where required, and would be installed and maintained in accordance with a CA WELO-compliant Landscape Plan. The irrigation system would include a low precipitation rate irrigation system consisting exclusively of drip irrigation. Connecting to the two on-site 20,250 gallon AQUABLOX® D-Raintanks®, the system would have an automatic controller, flow sensor, and multiple start times. Water for project operation and irrigation would be replenished from a fire hydrant located approximately 2.8 miles southeast of the project site at the corner of Ames Street and Martingale Lane in the County of Alameda. All potable water would be delivered to the project site approximately 206 times per year via a 5,000-gallon water truck; no connections to municipal water or sewer service are proposed.

4.2.6 AGRICULTURAL USES ON THE PROPERTY

As described above, the undeveloped portion of the project site is actively grazed by livestock. On-site grazing would continue to occur as part of the proposed project per the Williamson Act contract. The landowner would continue to lease the property to grazers in the surrounding area. Access to the project site would be provided via the lease agreement to allow livestock to graze beneath and around the solar modules.

4.2.7 UTILITIES

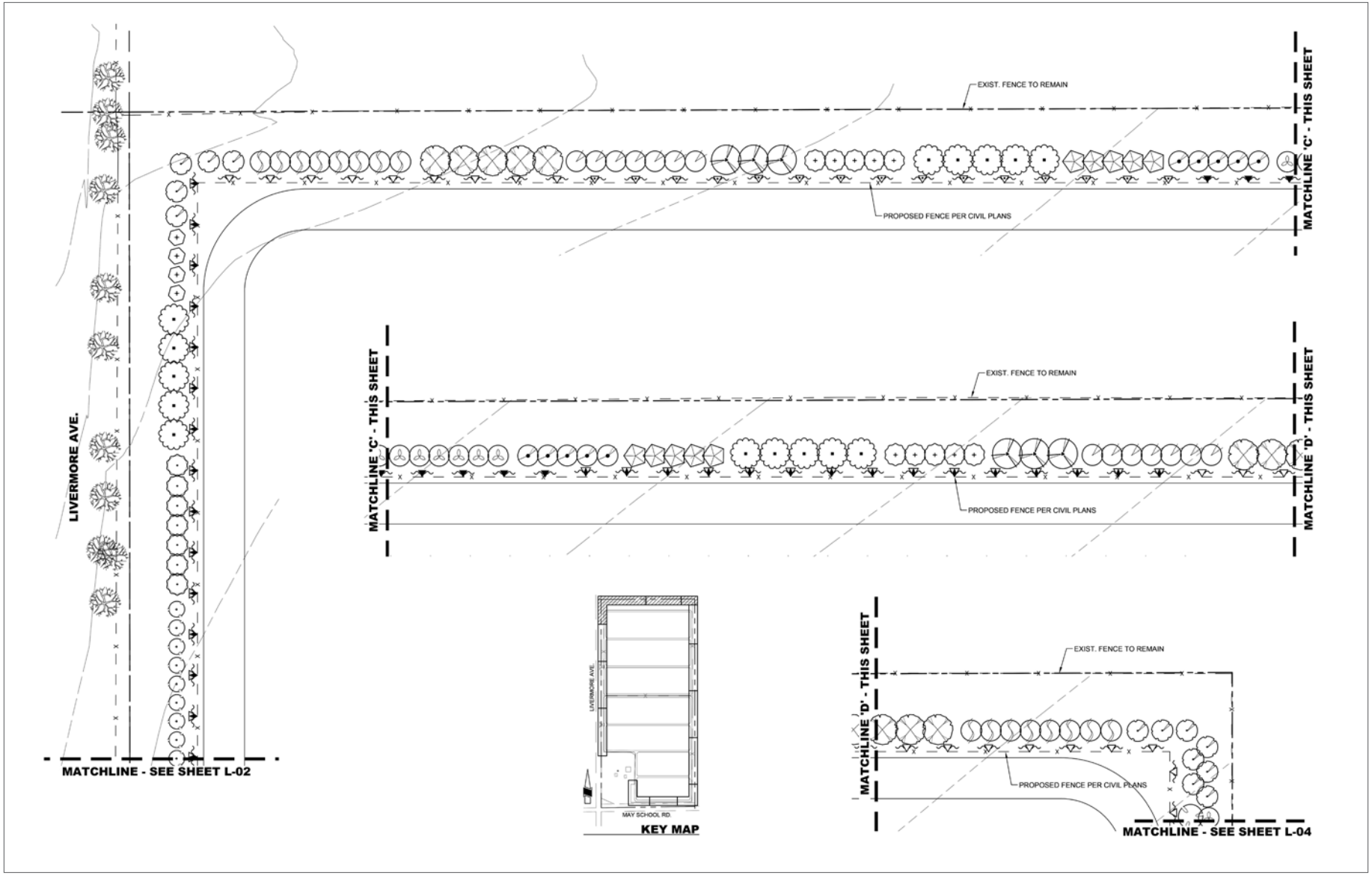
The existing single-family home located on the southwest corner of the project site has existing connections to PG&E, well water, and a septic tank. There is no active irrigation system on the project site. The proposed project would not disrupt these services. The proposed PV facility would not require connections to municipal water or sewer service. As described above, water for project operation and irrigation would be brought in by truck and stored in an on-site tank. The proposed PV facility would connect to an existing PG&E distribution line.



Source: Blue Oak Energy, 2018.

0 80
Scale (Feet)

Figure 4-6
Proposed Landscape Plan – North Livermore Avenue



Source: Blue Oak Energy, 2018.

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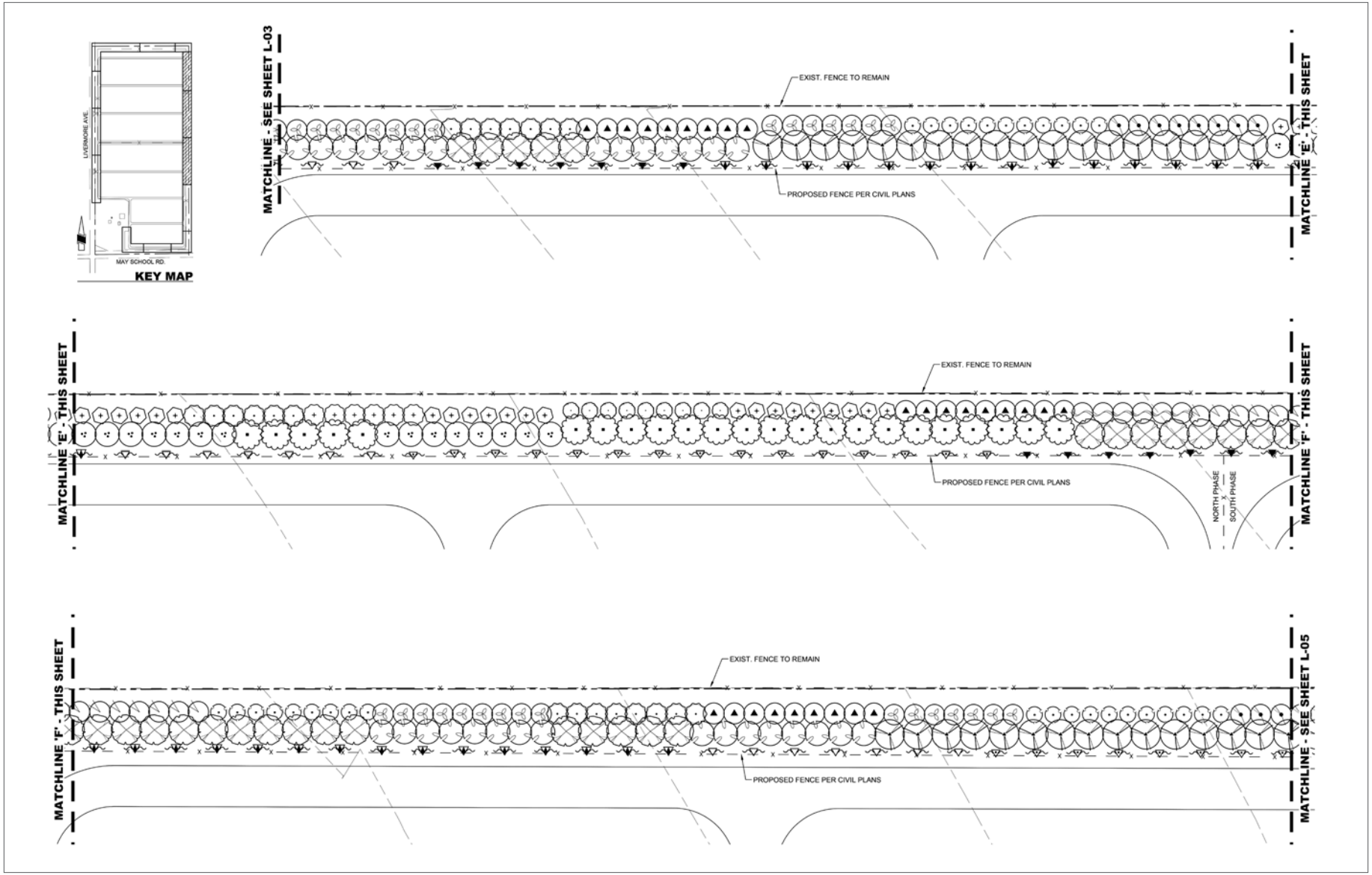
Scale (Feet)

Figure 4-7
Proposed Landscape Plan – Northern Boundary



Source: Blue Oak Energy, 2018.

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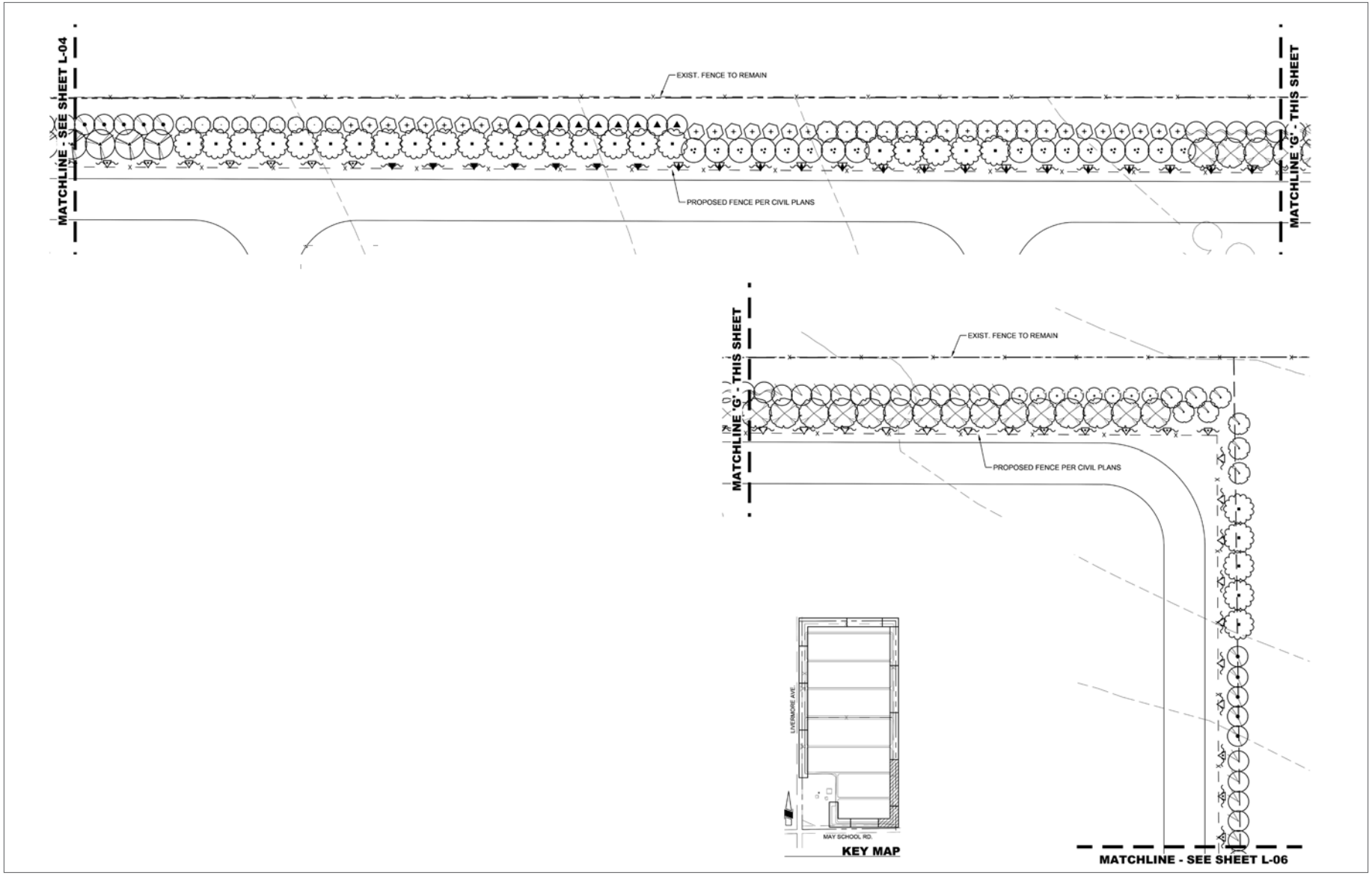
Scale (Feet)

Figure 4-8
Proposed Landscape Plan – Northeast Boundary



Source: Blue Oak Energy, 2018.

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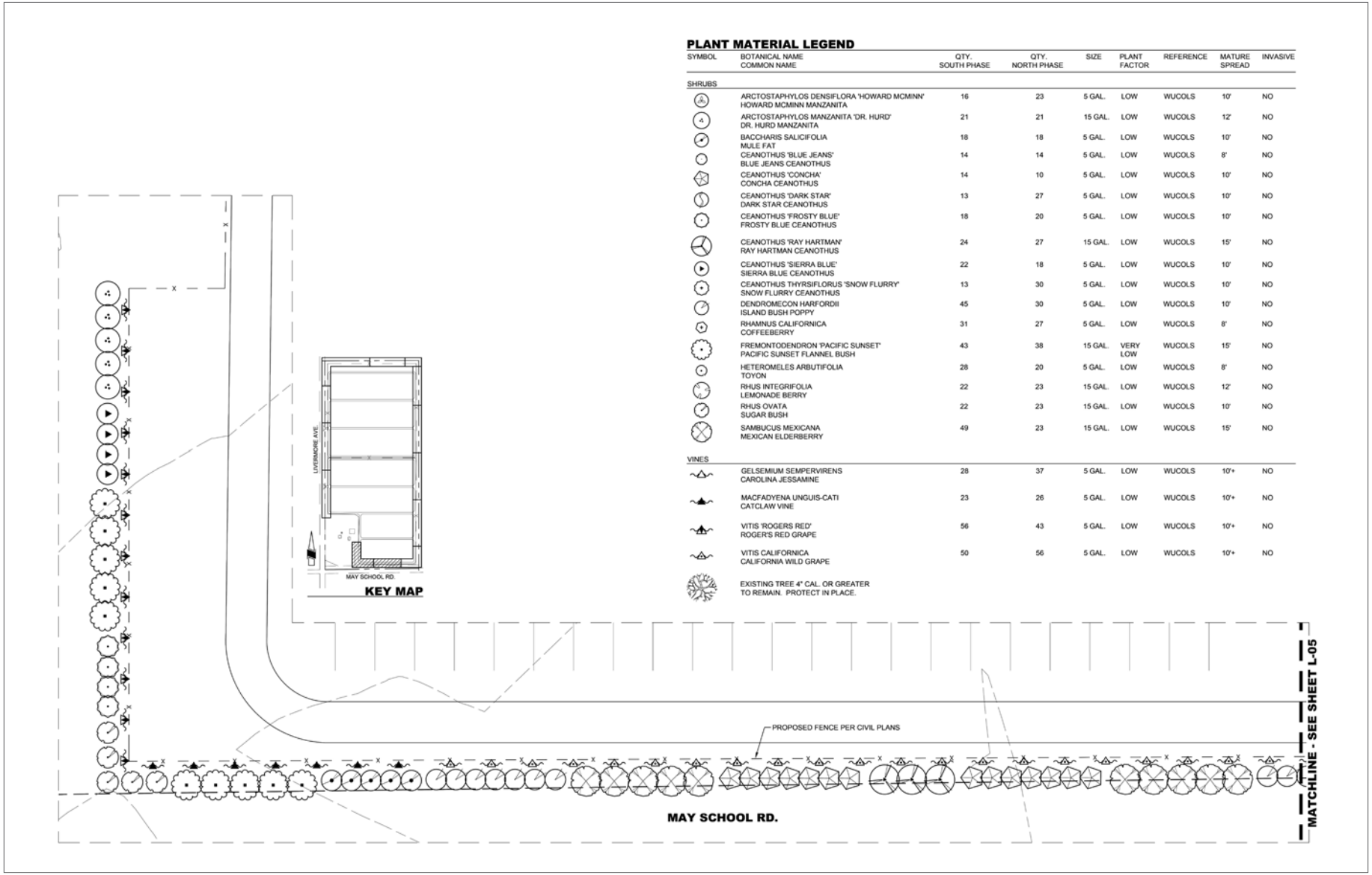
Scale (Feet)

Figure 4-9
Proposed Landscape Plan – Southeast Boundary



Source: Blue Oak Energy, 2018.

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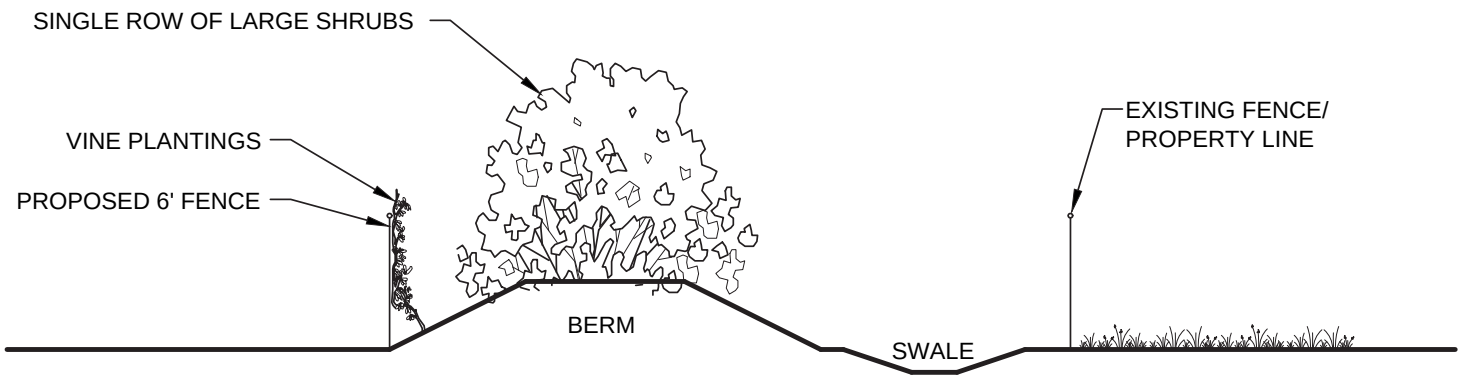
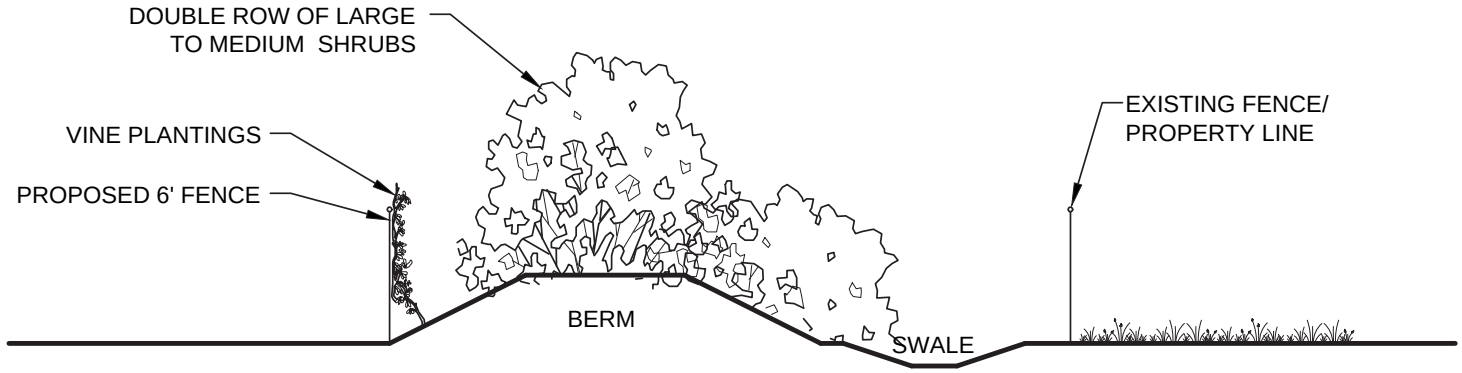
Scale (Feet)

Figure 4-10
Proposed Landscape Plan – May School Road



Landscape Buffer Section - North, South, and West Boundaries



Landscape Buffer Section - East Boundary

Source: Rick Engineering Company, 2018.

Figure 4-11
Proposed Landscape Buffer

4.3 REQUIRED APPROVALS

The proposed project would require approval of the Mitigated Negative Declaration and the project by the East Alameda County Board of Zoning Adjustments Planning Commission and Board of Supervisors. The county would be responsible for issuing required permits including a conditional use permit to allow the operation of the PV facility on the project site, building permit, grading permit, encroachment permit, and fire clearance and approval. The proposed project would also be subject to a hydrant meter permit from the City of Livermore Water District.

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5. Environmental Analysis

5.1 INTRODUCTION

This section describes the existing environmental conditions in the project area and environmental impacts that could occur with implementation of the proposed project pursuant to Appendix F, Energy Conservation, and Appendix G, Environmental Checklist, of the CEQA Guidelines as amended per Assembly Bill 52 (Tribal Cultural Resources) and the California Supreme Court in a December 2015 opinion [*California Building Industry Association (CBIA) v. Bay Area Air Quality Management District (BAAQMD)*, 62 Cal. 4th 369 (No. S 213478)]. Where appropriate, this Initial Study includes a general discussion of the environmental effects associated with potential future installation of the proposed PV facility on the project site.

5.2 SOURCES

All documents cited in this analysis and used in its preparation are hereby incorporated by reference into this Initial Study. Copies of documents referenced herein are available for review at the Alameda County Planning Department (224 West Winton Avenue, Room 111, Hayward, CA 94544), the East County Office Martinelli Center (3585 Greenville Road, Livermore, CA, 94550), and on the County website (https://www.acgov.org/cda/planning/).

5.3 ENVIRONMENTAL ANALYSIS AND FINDINGS

I. Aesthetics

Would the proposed project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	❒	❒	■	❒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	❒	❒	■	❒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	❒	■	❒	❒
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	❒	❒	■	❒

ENVIRONMENTAL SETTING

Regulatory Setting

State

California Scenic Highway Program

The California Scenic Highway Program, maintained by the California Department of Transportation (Caltrans), protects State scenic highway corridors from changes which would diminish the aesthetic value of lands adjacent to the highways. There are no State-designated scenic highways in the vicinity of the project site. The nearest State-designated Scenic Highway, Interstate 680 (I-680), is located approximately 9 miles east of the project site.[1]

California Building Code

The State of California provides a minimum standard for building design and outdoor lighting standards through Title 24 of the California Code of Regulations (CCR). The California Building Code is located in Part 2 of Title 24. The California Building Code is updated every three years, and the current 2016 California Building Code went into effect in January 2017. It is generally adopted on a jurisdiction-by-jurisdiction basis, subject to further modification based on local conditions. The California Building Code has been adopted for use by Alameda County pursuant to the Alameda County Municipal Code (ACMC) Chapter 15.08.

Local

Alameda County General Plan

The Alameda County General Plan Scenic Route Element (Countywide Scenic Route Element), adopted in 1966, identifies and defines the countywide scenic route system and serves as a guide for the protection and enhancement of scenic values along designated routes and in other County areas visible from scenic routes. The Countywide Scenic Route Element defines three types of scenic routes within the County; (1) Scenic Freeways and Expressways, (2) Scenic Thoroughfares, and (3) Scenic Rural-Recreation Route. The Countywide Scenic Route Element designates I-580, located approximately 3 miles south of the project site, as a Scenic Freeway, and North Livermore Avenue, located directly adjacent to the project site, as a Scenic Rural-Recreation Route.[2] Pursuant to the development standards outlined in the Countywide Scenic Route Element, no building or structure of more than one story in height is permitted in corridors along scenic routes with outstanding distant views above the roadbed.[3]

[1] California Department of Transportation website, Officially Designated State Scenic Highways, http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/, accessed on April 18, 2018.

[2] Alameda County, Scenic Route Element of the General Plan, https://www.acgov.org/cda/planning/generalplans/documents/Scenic_Route_Element_General_Plan_1966.pdf, pages 3 to 7, accessed on April 18, 2018.

[3] [3] Alameda County, Scenic Route Element of the General Plan, https://www.acgov.org/cda/planning/generalplans/documents/Scenic_Route_Element_General_Plan_1966.pdf, page 18, accessed on April 18, 2018.

The Countywide Scenic Route Element includes the following principles specific to visual resources and applicable to the proposed project.

- Establish Architectural and Site Design Review: Architectural and site design review by the appropriate local jurisdiction should be provided for each site and for all new or altered structures so that particular considerations will be given to appearances that will enhance scenic qualities from the scenic routes. Originality in landscape and construction design should be encouraged. Such designs should be in keeping with cityscape and natural skyline and reflect the density, movement and activities of the population.
- Use Landscaping to Increase Scenic Qualities of Scenic Route Corridors: Landscaping should be designed and maintained in scenic route corridors to provide added visual interest, to frame scenic views, and to screen unsightly views.

East County Area Plan

The East County Area Plan (ECAP) includes the following policies specific to visual resources and applicable to the proposed project.

- Policy 105: The County shall preserve the following major visually-sensitive ridgelines largely in open space use:
  1. The ridgelines of Pleasanton, Main, and Sunol Ridges west of Pleasanton;
  2. The ridgelines above Schafer, Shell, Skyline, Oak, and Divide Ridges west of Dublin and the ridgelines above Doolan Canyon east of Dublin;
  3. The ridgelines above Collier Canyon and Vasco Road and the ridgelines surrounding Brushy Peak north of Livermore;
  4. The ridgelines above the vineyards south of Livermore;
  5. The ridgelines above Happy Valley south of Pleasanton.
- Policy 112: The County shall require development to maximize views of the following prominent visual features:
  1. The major ridgelines listed in Policy 105;
  2. Brushy Peak, Donlan Peak, and Mount Diablo; and
  3. Cresta Blanca, near Arroyo Road South of Livermore.
- Policy 114: The County shall require the use of landscaping in both rural and urban areas to enhance the scenic quality of the area and to screen undesirable views. Choice of plants should be based on compatibility with surrounding vegetation, drought-tolerance, and suitability to site conditions; and in rural areas, habitat value and fire retardance.
- Policy 115: In all cases appropriate building materials, landscaping and screening shall be required to minimize the visual impact of development. Development shall blend with and be subordinate to the environment and character of the area where located, so as to be as unobtrusive as possible and not detract from the natural, open space or visual qualities of the area. To the maximum extent practicable, all exterior lighting must be located, designed and shielded so as to confine direct rays to the parcel where the lighting is located.

- **Policy 116:** To the maximum extent possible, development shall be located and designed to conform with rather than change natural landforms. The alteration of natural topography, vegetation, and other characteristics by grading, excavating, filling or other development activity shall be minimized. To the extent feasible, access roads shall be consolidated and located where they are least visible from public view points.
- **Policy 117:** The County shall require that where grading is necessary, the off-site visibility of **cut and fill slopes** and drainage improvements is minimized. Graded slopes shall be designed to simulate natural contours and support vegetation to blend with surrounding undisturbed slopes.
- **Policy 118:** The County shall require that grading avoid areas containing large stands of mature, healthy **vegetation**, scenic natural formations, or natural watercourses.
- **Policy 119:** The County shall require that access roads be sited and designed to **minimize grading.**
- **Policy 215:** The County shall manage development and conservation of land within East County **scenic highway corridors** to maintain and enhance scenic values.

Alameda County Municipal Code

ACMC Chapter 17.104, Scenic Route Corridors, identifies the adopted scenic route corridors along roads and highways located within the County. The adopted scenic route corridors are located along Redwood Road from San Lorenzo Creek to Camino Alta Mira, I-238 between the I-580 interchange and I-880 interchange, and I-580 from 149th Avenue to I-238.[4]

Existing Conditions

The project site is located in a rural agricultural area within Alameda County and is generally bounded by agricultural land to the north, south, and west, and single-family housing to the east. Local access to the project site is provided via Manning Road, May School Road, and North Livermore Avenue. The project site is actively grazed by livestock and is generally undeveloped with the exception of an existing 1,100-square-foot single-family home and associated structures located on the southwest corner of the project site. Existing views along May School Road, Bel Roma Road, and North Livermore Avenue are shown in Figures 5-1 to 5-3. The view locations relative to the project boundary are shown on Figure 5-4.

Scenic corridors can be defined as an enclosed area of landscape, viewed as a single entity that includes the total field of vision visible from a specific point, or a series of points along a linear transportation route. Public view corridors are areas in which short-range, medium-range, and long-range views are available from publicly accessible viewpoints, such as from county roads. ACMC Chapter 17.104, Scenic Route Corridors, identifies the adopted scenic route corridors along roads and highways located within the County. The closest scenic corridor to the project site is the section of I-580 from 149th Avenue to I-238 located approximately 9.5 miles west of the project site.[5]

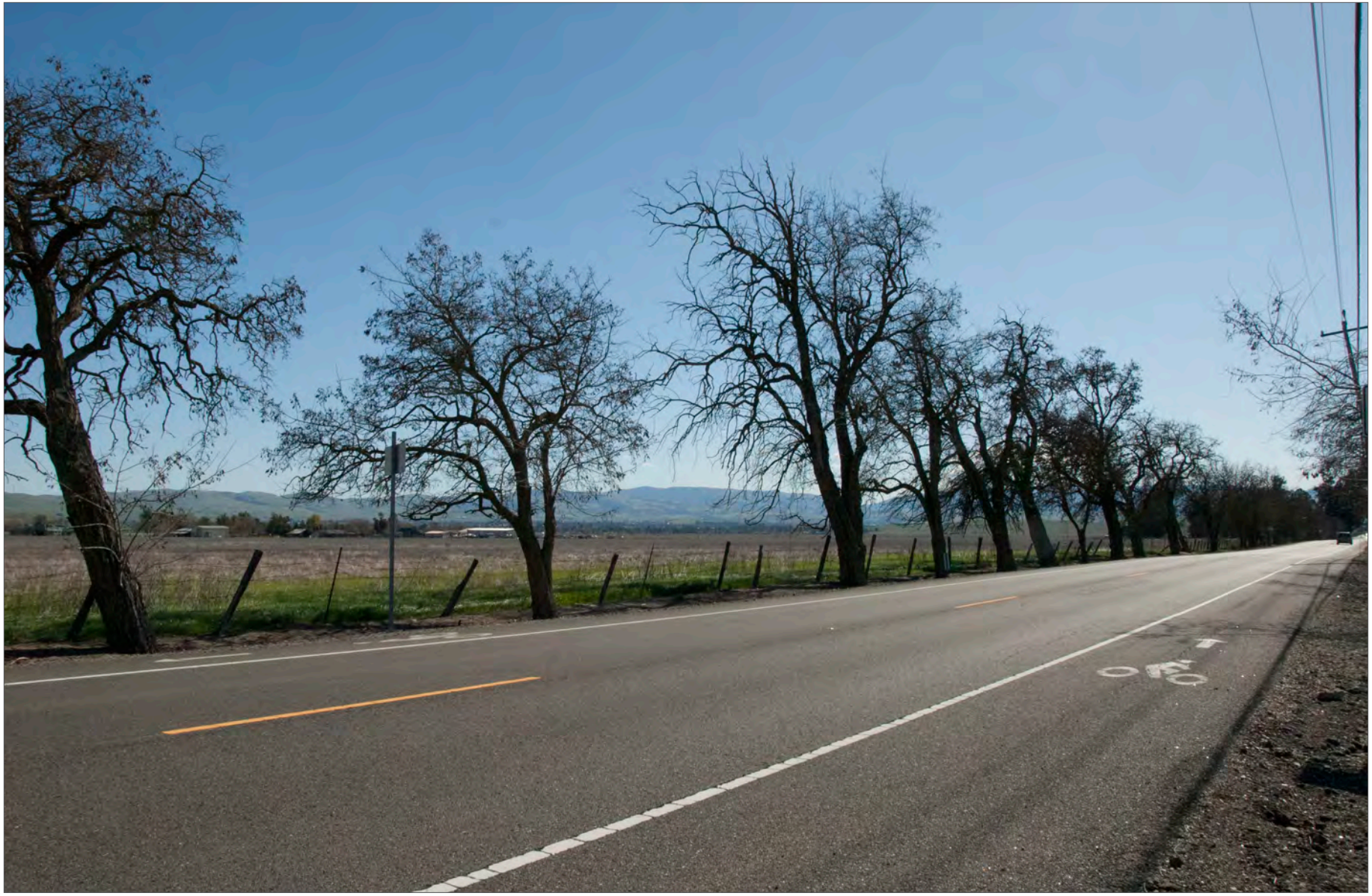
[4] Alameda County Municipal Code, Title 17 (Zoning), Chapter 17.104 (Scenic Route Corridors).
[5] Alameda County Municipal Code, Title 17 (Zoning), Chapter 17.104 (Scenic Route Corridors).

Source: PlaceWorks 2018.

Figure 5-1
Existing View May School Road

Source: PlaceWorks 2018.

Figure 5-2
Existing View Bel Roma Road



Source: PlaceWorks 2018.

Figure 5-3
Existing View North Livermore Avenue

Source: Google Earth, 2018.

Project Site

Figure 5-4
View Locations

Scenic vistas are generally interpreted as long-range views of a specific scenic feature (e.g., open space lands, mountain ridges, bay, or ocean views). Public views are those which can be seen from vantage points that are publicly accessible, such as streets, freeways, parks, and vista points. These views are generally available to a greater number of persons than private views. Private views are those views that can be seen from vantage points located on private property. Private views are not necessarily considered to be impacted when interrupted by land uses on adjacent properties. The ECAP and Countywide Scenic Route Element designate major visually-sensitive ridgelines, scenic routes, and scenic corridors throughout the County. The project site is not directly located on a major visually-sensitive ridgeline; however, long-range views of the scenic ridgelines can be seen from the project site. Specifically, the ridgelines above Collier Canyon and Vasco Road are visible to the north, ridgelines surrounding Brushy Peak are visible to the east, ridgelines above the vineyards south of the City of Livermore are visible to the south, and Doolan Canyon is visible to the west.

A scenic road is defined as a highway, road, drive, or street that, in addition to its transportation function, provides opportunities for the enjoyment of natural and human-made scenic resources. Scenic roads direct views to areas of exceptional beauty, natural resources or landmarks, or historic or cultural interest. The nearest State-designated Scenic Highway, I-680, is located approximately 9 miles east of the project site.[6] The nearest County-designated Scenic Freeway, I-580, is located approximately 3 miles south of the project site, and the nearest County-designated Scenic Rural-Recreation Route, North Livermore Avenue, is directly adjacent to the project site.[7]

Light pollution refers to all forms of unwanted light in the night sky, including glare, light trespass or spill to adjacent sensitive receptors (e.g., residential development), sky glow, and over-lighting. Views of the night sky are an important part of the natural environment. Excessive light and glare can be visually disruptive to humans and nocturnal animal species. Light pollution within the project area is minimal, and is restricted primarily to street lighting along the roadway and indoor and outdoor lighting associated with the existing single-family home located on the southwest corner of the project site. No on-site lighting is proposed as part of the project.

Discussion

a) *Would the proposed project have a substantial adverse effect on a scenic vista?*

Scenic corridors can be defined as an enclosed area of landscape, viewed as a single entity that includes the total field of vision visible from a specific point, or a series of points along a linear transportation route. As discussed above, the proposed project is not located near a designated scenic corridor;[8] however, in compliance with the Countywide Scenic Route Element, the proposed project includes a landscape buffer to provide visual interest, frame scenic views, and screen unsightly views. Accordingly, no impact would occur in this respect.

[6] California Department of Transportation website, Officially Designated State Scenic Highways, http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/, accessed on April 18, 2018.

[7] Alameda County, Scenic Route Element of the General Plan, https://www.acgov.org/cda/planning/generalplans/documents/Scenic_Route_Element_General_Plan_1966.pdf, pages 3 to 7, accessed on April 18, 2018.

[8] Alameda County Municipal Code, Title 17 (Zoning), Chapter 17.104 (Scenic Route Corridors).

Scenic vistas are generally interpreted as long-range views of a specific scenic feature (e.g., open space lands, mountain ridges, and bay or ocean views). The ECAP Polices 105 and 112 designate major visually-sensitive ridgelines and prominent visual features within the County, some of which can be seen from the project site. For the purposes of this analysis, the long-range views to the ridgelines above Collier Canyon and Vasco Road to the north, ridgelines surrounding Brushy Peak to the east, ridgelines above the vineyards south of the City of Livermore to the south, and Doolan to the west, are considered scenic vistas.

As discussed in Chapter 4, Project Description, the proposed PV facility would install solar arrays and associated structures designed to convert solar energy, or sunlight, into electricity on the project site. Installation of the solar arrays would be non-permanent and all non-reflective equipment would be painted in neutral colors. The proposed project would also construct a 5-foot landscape buffer comprised of 805 native shrubs ranging in height from 8 to 15 feet, at maturity, along the perimeter of the project site to screen views of the PV facility from the public right-of-way. The primary components of the proposed project that could affect long-range views to the surrounding ridgelines are the solar arrays and the transformers. At maximum tilt the height of the solar arrays would be approximately 8 feet above the finished grade elevations. The four transformer units would each be approximately 7 feet tall, the concrete pad would be about 1-foot plus the transformer itself would be about 6 feet.

The solar arrays would be the most visible component of the project site at project completion. However, as shown in Figures 5-5 to 5-7, long-range views to the surrounding ridgelines would still be visible from the public right-of-way. In addition, consistent with ECAP Policies 114 and 115 which directs the County to require the use of landscaping in both rural and urban areas to enhance the scenic quality of the area, screen undesirable views, and minimize the visual impact of development, the solar arrays would be concealed by the proposed landscape buffer with 5-year plantings as shown in Figures 5-8 to 5-10. Therefore, the proposed project would not result in a substantial adverse effect on a scenic vista and the impact would be ***less than significant***.

b) *Would the proposed project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?*

A scenic road is defined as a highway, road, drive, or street that, in addition to its transportation function, provides opportunities for the enjoyment of natural and human-made scenic resources. The proposed project is not located along a State-designated Scenic Highway;[9] therefore no impact would occur in this respect. However, the project site is located on North Livermore Avenue which is a County-designated Scenic Rural-Recreation Route.[10] Pursuant to the development standards outlined in the Countywide Scenic Route Element, no building or structure of more than one story, or approximately 10 feet, in height is permitted in corridors along scenic routes with outstanding distant views above the roadbed.[11] As

[9] California Department of Transportation website, Officially Designated State Scenic Highways, http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/, accessed on April 18, 2018.

[10] Alameda County, Scenic Route Element of the General Plan, https://www.acgov.org/cda/planning/generalplans/documents/Scenic_Route_Element_General_Plan_1966.pdf, pages 3 to 7, accessed on April 18, 2018.

[11] Alameda County, Scenic Route Element of the General Plan, https://www.acgov.org/cda/planning/generalplans/documents/Scenic_Route_Element_General_Plan_1966.pdf, page 18, accessed on April 18, 2018.

Source: PlaceWorks 2018.

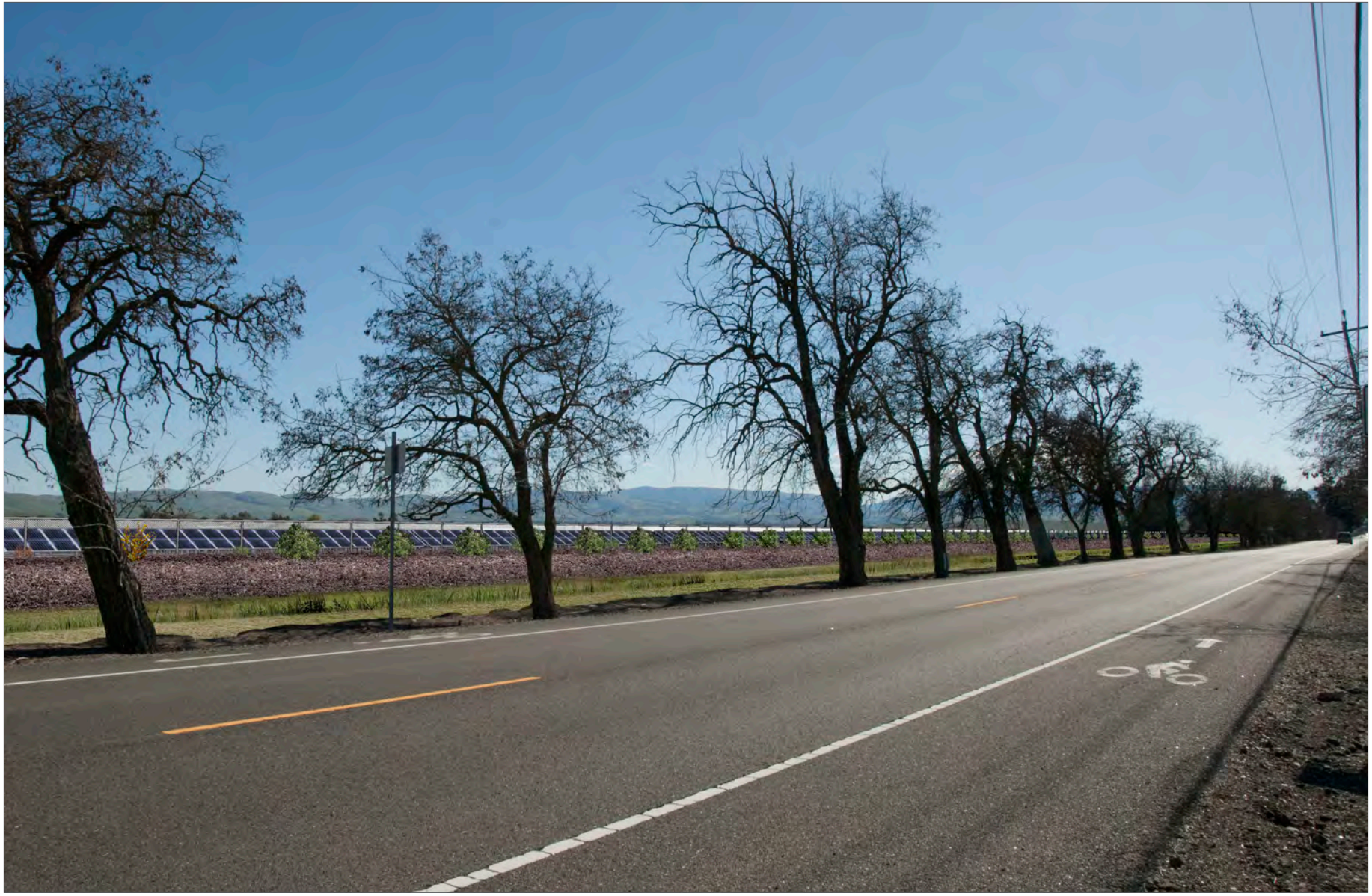
Figure 5-5

Visual Simulation at Project Completion with Initial Plantings: May School Road

Source: PlaceWorks 2018.

Figure 5-6

Visual Simulation at Project Completion with Initial Plantings: Bel Roma Road



Source: PlaceWorks 2018.

Figure 5-7

Visual Simulation at Project Completion with Initial Plantings: North Livermore Avenue

Source: PlaceWorks 2018.

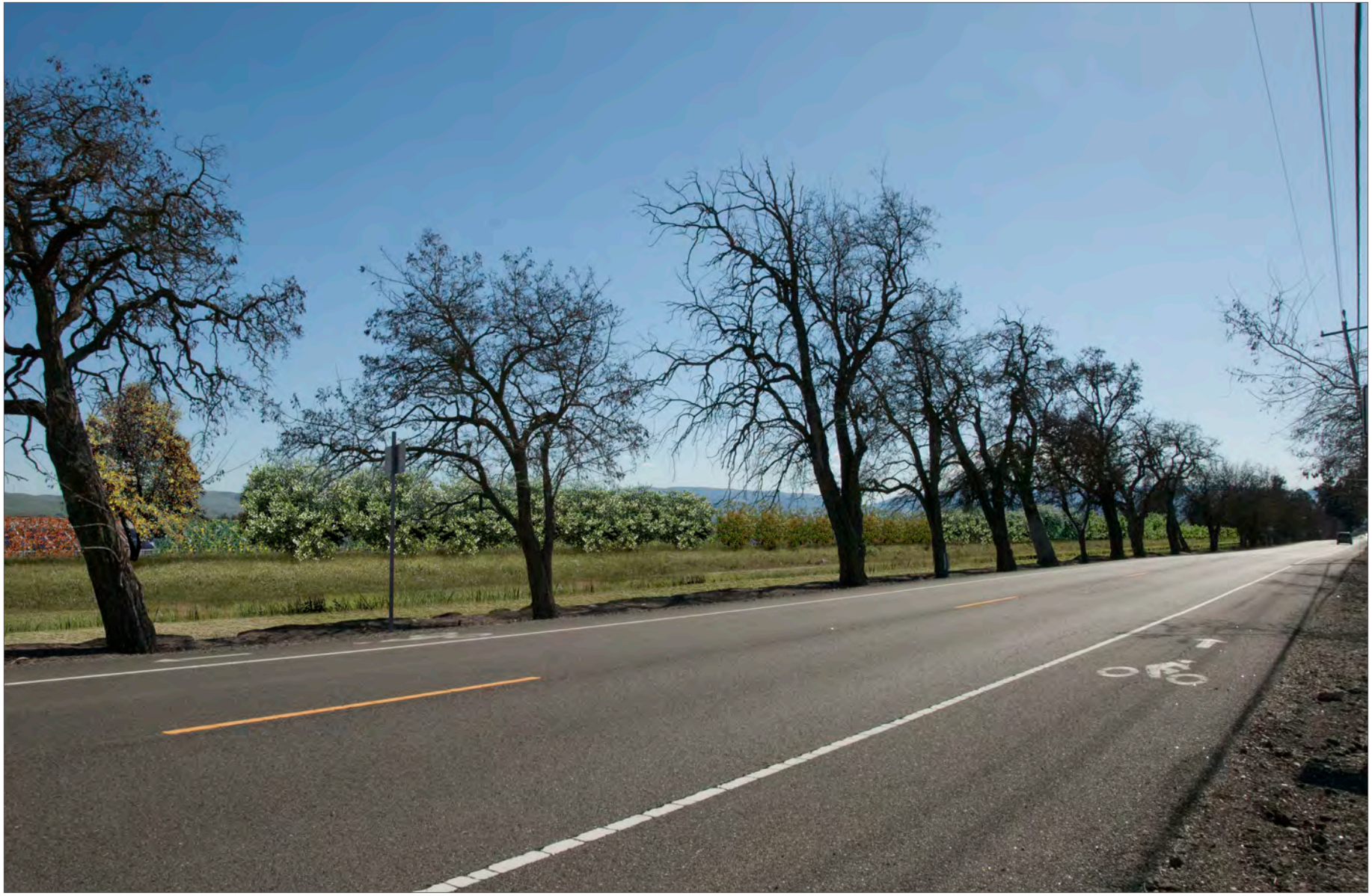
Figure 5-8

Visual Simulation at Project Completion with 5-Year Plantings: May School Road

Source: PlaceWorks 2018.

Figure 5-9

Visual Simulation at Project Completion with 5-Year Plantings: Bel Roma Road



Source: PlaceWorks 2018.

Figure 5-10

Visual Simulation at Project Completion with 5-Year Plantings: North Livermore Avenue

discussed in Criterion (a) of this section, the maximum height of the proposed project would be approximately 8 feet which is consistent with the development standards outlined in the Countywide Scenic Route Element. In addition, the solar arrays would be concealed by the proposed landscape buffer with 5-year plantings as shown in Figures 5-8to 5-10. Furthermore, there are no notable trees, rock outcroppings, or historical buildings on the project site that would be affected, and the project would not alter long-range views to the ridgelines or other natural features. Therefore, the proposed project would not substantially damage scenic resources within State-designated Scenic Highway or County-designated Scenic Rural-Recreation Route and the impact would be ***less than significant***.

c) *Would the proposed project substantially degrade the existing visual character or quality of the site and its surroundings?*

The project site is actively grazed by livestock and is generally undeveloped with the exception of an existing single-family home on the southwest corner of the project site. The surrounding area is characterized by agricultural land to the north, south, and west, and single-family housing to the east. Installation of the proposed PV facility would represent a change in the existing visual character of the project site and its surrounding; however, consistent with ECAP Policies 114 and 115 the solar arrays would be concealed by the proposed landscaped buffer with 5-year plantings. Additionally, pursuant with ECAP Policies 118 and 119, the proposed grading plan for the project directs grading activities along the perimeter of the site; thereby minimizing the overall impacts to the topography of the site and ensure that on-site grazing continues after project installation. Additionally, as discussed in Criterion (b) of this section, the maximum height of the proposed project would be consistent with the development standards outlined in the Countywide Scenic Route Element. Accordingly, in order to comply with the ECAP policies, the proposed landscape buffer must be maintained throughout the life of the project, otherwise the proposed PV facility could result in a significant impact with respect to the visual character of the project area. Implementation of the following mitigation measure would ensure that the impact would be ***less than significant with mitigation***.

> Mitigation Measure AES (c): The project applicant shall ensure that the proposed landscape buffer is adequately irrigated and maintained throughout the life of the project. Should any of the proposed landscape plants not survive the initial planting or expire at any time during the life of the project, the applicant shall provide replacement plantings to properly conceal the proposed solar arrays.

d) *Would the proposed project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?*

The proposed project would not introduce new sources of indoor or outdoor lighting to the project site and would therefore not introduce new sources of nighttime light pollution to the area. However, the proposed solar PV facility would install solar arrays and associated structures designed to convert solar energy, or sunlight, into electricity on the project site. The proposed solar arrays, which are comprised of iridescent blue panels, could introduce new sources of daytime glare to the project site. PV facilities are most efficient in terms of generating electricity when they absorb as much sunlight as possible and reflect

as little sunlight as possible.[12] As such, the iridescent blue panels are textured with indentations to reduce the amount of sunlight that is reflected off the surface and are coated with anti-reflective materials that maximize light absorption.[13]Accordingly, PV facilities by design do not produce as much glare and reflectance as standard window glass, car windshields, white concrete, or snow because the design criteria is to maximize refracted light through the iridescent blue panels.[14] For these reasons, the proposed project would not create a new source of substantial light or glare and the impact would be ***less than significant.***

II. Agricultural and Forestry Resources

Would the proposed project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) 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) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	❒	❒	■	❒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	❒	❒	❒	■
d) Result in the loss of forest land or conversion of forest land to non-forest use?	❒	❒	❒	■
e) 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 of conversion of forest land to non-forest use?	❒	❒	■	❒

[12] SunShot, United States Department of Energy, Meister Consultants Group, Solar and Glare, June 2014, http://solaroutreach.org/wp-content/uploads/2014/06/Solar-PV-and-Glare-_Final.pdf, accessed on April 9, 2018.

[13] SunPower, PV Systems, Low Levels of Glare and Reflectance vs. Surrounding Environment, https://us.sunpower.com/sites/sunpower/files/media-library/white-papers/wp-pv-systems-low-levels-glare-reflectance-vs-surrounding-environment.pdf, accessed on April 9, 2018.

[14] SunPower, PV Systems, Low Levels of Glare and Reflectance vs. Surrounding Environment, https://us.sunpower.com/sites/sunpower/files/media-library/white-papers/wp-pv-systems-low-levels-glare-reflectance-vs-surrounding-environment.pdf, accessed on April 9, 2018.

ENVIRONMENTAL SETTING

Regulatory Framework

State

Land Conservation Act of 1965 (Williamson Act)

Commonly known as the Williamson Act, the State of California's Land Conservation Act of 1965 enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive a property tax assessment based upon farming and open space uses as opposed to full market value.

Farmland Mapping and Monitoring Program

The California Farmland Conservancy manages the Farmland Mapping and Monitoring Program (FMMP), which produces maps and statistical data used for analyzing impacts on California's agricultural resources. Agricultural land is rated according to soil quality and irrigation status; the best quality land is called Prime Farmland.[15]

Local

East County Area Plan

The ECAP includes the following policies specific to agricultural resources and applicable to the proposed project.

- **Policy 78:** In areas designated Large Parcel Agriculture, the County shall permit agricultural processing facilities (for example wineries, olive presses) and limited agricultural support service uses that primarily support Alameda County agriculture, are not detrimental to existing or potential agricultural uses, demonstrate an adequate and reliable water supply, and comply with the other policies and programs of the Initiative.
- **Policy 79:** The County shall require any proposal for agricultural support service uses within areas designated "Large Parcel Agriculture" or "Resource Management" to meet at a minimum the following criteria:
  - The project will not require the extension of public sewer or water.
  - The project will not detract from agricultural production on-site or in the area.
  - The project will not create a concentration of commercial uses in the area.
  - The project is compatible with and will not adversely affect surrounding uses.

[15] California Department of Conservation, The Land Conservation Act, ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2012/scl12.pdf, accessed on April 9, 2018.

Existing Conditions

The project site is designated as Large Parcel Agriculture by the ECAP and is zoned Agricultural (A) District pursuant to the ACMC. The project site is actively grazed by livestock and is generally undeveloped with the exception of an existing single-family home on the southwest corner of the project site. The project site is subject to Williamson Act contract;[16] however, pursuant to the California Department of Conservation, the project site is not considered *Prime Farmland, Unique Farmland, or Farmland of Local Importance.*[17] In addition, according to the 2006 mapping data from the California Department of Forestry and Fire Protection (CAL FIRE), the county does not contain any woodland or forest land cover.[18]

Discussion

a) *Would the proposed 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?*

The project site is actively grazed by livestock; however, it is not classified as Prime Farmland, Unique Farmland or Farmland of Statewide Importance. Therefore, there would be ***no impact***.

b) *Would the proposed project conflict with existing zoning for agricultural use, or a Williamson Act contract?*

The project site is designated Large Parcel Agriculture and zoned A District pursuant to the ACMC. The project site is used for grazing as an agricultural use, and pursuant to the Williamson Act contract, the on-site grazing would continue to during the life of, and in the same space as the proposed project. The adopted Alameda County Uniform Rules for Williamson Act include photovoltaic power generation as a use compatible with on-site agricultural uses. Accordingly, the impact would be ***less than significant***.

c) *Would the proposed project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?*

Neither the project site nor the immediately surrounding areas are zoned for forest land, timberland, or timber production. Additionally, there are no lands within Alameda County zoned for or currently featuring timberland or timber production.[19] The proposed project would therefore not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. Therefore, there would be ***no impact***.

[16] Alameda County Agricultural Preserve, Land Conservation Agreement, 1971.

[17] California Department of Conservation, California Important Farmland Finder, https://maps.conservation.ca.gov/DLRP/CIFF/, accessed on April 20, 2018.

[18] California Department of Forestry and Fire Protection (CAL FIRE) Fire and Resource Assessment Program, Land Cover map, http://frap.fire.ca.gov/data/frapgismaps/pdfs/fvegwhr13b_map.pdf, accessed on April 9, 2018.

[19] Alameda County, East County Area Plan, Land Use Diagram, page 136.

d) *Would the proposed project result in the loss of forest land or conversion of forest land to non-forest use?*

There is no forest land on the project site or in close proximity to the project site. The surrounding areas currently feature agricultural land to the north, south, and west, and single-family housing to the east. Therefore, the project would not result in the loss of forest land or conversion of forest land to non-forest use. Accordingly, there would be *no impact*.

e) *Would the proposed 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 of conversion of forest land to non-forest use?*

As detailed above, the undeveloped portion of the project site is actively grazed by livestock. Pursuant to the Williamson Act contract, on-site grazing would continue to occur as part of the proposed project. Accordingly, the proposed project would not involve changes to the existing environment that would result in the conversion of farmland to non-agricultural uses or forest land to non-forest use. Accordingly, the impact would be *less than significant.*

III. Air Quality

Would the proposed project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	❒	❒	■	❒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	❒	■	❒	❒
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project area is in non-attainment under applicable federal or State ambient air quality standards (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	❒	❒	■	❒
d) Expose sensitive receptors to substantial pollutant concentrations?	❒	❒	■	❒
e) Create objectionable odors affecting a substantial number of people?	❒	❒	■	❒

ENVIRONMENTAL SETTING

The meteorological conditions, existing ambient air quality in the vicinity of the project site, and air quality modeling is included in Appendix B, Air Quality and Greenhouse Gas Emissions Data, of this Initial Study.

Regulatory Setting

Federal

The pollutants emitted into the ambient air by stationary and mobile sources are regulated by the National Clean Air Act. Air pollutants of concern under Federal and State regulations are described below under the State regulations.

State

California Clean Air Act

The California Clean Air Act (CAA) is administered by the California Air Resources Board (CARB) at the state level under the California Environmental Protection Agency. CARB is responsible for meeting the state requirements of the Federal CAA, administering the California CAA, and establishing the California ambient air quality standards (AAQS). The California CAA requires all air districts in the state to achieve and maintain the California AAQS. CARB also regulates mobile air pollution sources such as motor vehicles. CARB is responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. CARB has established passenger vehicle fuel specifications and oversees the functions of local air pollution control districts and air quality management districts, which in turn administer air quality activities at the regional and county level. CARB also conducts or supports research into the effects of air pollution on the public and develops approaches to reduce air pollutant emissions

Regional

Bay Area Air Quality Management District

California is divided geographically into air basins for the purpose of managing the air resources of the State on a regional basis. An air basin generally has similar meteorological and geographic conditions throughout. The project site is in the San Francisco Bay Area Air Basin (SFBAAB or Air Basin), which comprises all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties; the southern portion of Sonoma County; and the southwestern portion of Solano County. The Bay Area Air Quality Management District (BAAQMD) is the regional air quality agency for the SFBAAB. Air quality in this area is determined by such natural factors as topography, meteorology, and climate, in addition to the presence of existing air pollution sources and ambient conditions.[20] Air pollutants of concern are criteria air pollutants and toxic air contaminants (TACs).

[20] Bay Area Air Quality Management District (BAAQMD), 2017, California Environmental Quality Act Air Quality Guidelines, Appendix C: Sample Air Quality Setting.

Air Pollutants of Concern

Criteria Air Pollutants

The pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and State law under the National and California CAA, respectively. Air pollutants are categorized as primary and/or secondary pollutants. Primary air pollutants are those that are emitted directly from specific sources. Carbon monoxide (CO), reactive organic gases (ROG) (also referred to as volatile organic compounds [VOC]), VOCs, nitrogen oxides (NO_x), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particular matter ($PM_{2.5}$), and lead (Pb) are primary air pollutants. All of these, except for ROGs are "criteria air pollutants," which means that AAQS have been established for them. The National and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect those "sensitive receptors" most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Toxic Air Contaminants

In addition to criteria air pollutants, both the State and federal government regulate the release of TACs. The California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant pursuant to Section 112(b) of the federal Clean Air Act (42 United States Code Section 7412[b]) is a TAC. Under State law, the California Environmental Protection Agency, acting through the CARB, is authorized to identify a substance as a TAC if it determines that the substance is an air pollutant that may cause or contribute to an increase in mortality or serious illness, or may pose a present or potential hazard to human health. The 2017 Bay Area Clean Air Plan entitled *Spare the Air – Cool the Climate*, adopted by BAAQMD on April 19, 2017, is the current comprehensive air quality management plan (AQMP).

Odors

BAAQMD Regulation 7, Odorous Substances, requires abatement of any nuisance generating an odor complaint. BAAQMD's Regulation 7, Odorous Substances, places general limitations on odorous substances and specific emission limitations on certain odorous compounds. In addition, odors are also regulated under BAAQMD Regulation 1, Rule 1-301, Public Nuisance, which states that "no person shall 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 the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause injury or damage to business or property.

Local

Alameda County General Plan

The Alameda County General Plan Community Climate Action Plan (CAP), adopted in 2014, outlines a course of action to reduce community-wide GHG emissions generated within the unincorporated areas of Alameda County. Successful implementation of the CAP will reduce GHG emissions to 15 percent below 2005 levels by 2020 and set the County on a path toward reducing emissions to 80 percent below 1990 levels by 2050. The CAP defines a path to achieve the County's GHG reduction targets and outlines the detailed implementation of steps in the following six action areas: land use, transportation, energy, water, waste, and green infrastructure.

East County Area Plan

The ECAP includes the following policies specific to air quality and applicable to the proposed project.

- Policy 291: The County shall strive to meet federal and state air quality standards for local air pollutants of concern. In the event that standards are exceeded, the County shall require appropriate mitigation measures on new development.
- Policy 300: The County shall review proposed projects for their potential to generate hazardous air pollutants.

Existing Conditions

There are no stationary sources that generate air quality emissions on the project site.

Discussion

a) *Would the proposed project conflict with or obstruct implementation of the applicable air quality plan?*

BAAQMD is directly responsible for reducing emissions from area, stationary, and mobile sources in the SFBAAB to achieve National and California AAQS. In April of 2017 BAAQMD adopted its 2017 Clean Air Plan, which is a regional and multiagency effort to reduce air pollution in the Air Basin. A consistency determination with the AQMP plays an important role in local agency project review by linking local planning and individual projects to the Clean Air Plan. It fulfills the CEQA goal of informing decision makers of the environmental efforts of the project under consideration early enough to ensure that air quality concerns are fully addressed. It also provides the local agency with ongoing information as to whether they are contributing to the clean air goals in the Clean Air Plan.

The regional emissions inventory for the SFBAAB is compiled by BAAQMD. Regional population, housing, and employment projections developed by the Association of Bay Area Governments (ABAG) are based, in part, on cities' general plan land use designations. These projections form the foundation for the emissions inventory of the Clean Air Plan. These demographic trends are incorporated into Plan Bay Area, compiled by ABAG and the Metropolitan Transportation Commission (MTC) to determine priority

transportation projects and vehicle miles traveled in the Bay Area. Projects that are consistent with the local general plan are considered consistent with the air quality-related regional plan. Large projects that exceed regional employment, population, and housing planning projections have the potential to be inconsistent with the regional inventory compiled as part of the 2017 Clean Air Plan.

The proposed project would install a PV facility on the project site. These types of facilities are not considered a regionally significant project that would affect regional vehicle miles traveled and warrant Intergovernmental Review by MTC pursuant to the CEQA Guidelines Section 15206(b)(2)(D). In addition, a PV facility would not result in the increase of population or housing foreseen in County or regional planning efforts. Therefore, the proposed project would not have the potential to substantially affect housing, employment, and population projections within the region, which is the basis of the Clean Air Plan projections. Furthermore, as described in Criterion (b) of this section, regional operation of the proposed project would not contribute to an existing air quality violation. These thresholds are established to identify projects that have the potential to generate a substantial amount of criteria air pollutants. Because the proposed project would not exceed these thresholds, the proposed project would not be considered by the BAAQMD to be a substantial emitter of criteria air pollutants. Therefore, the project would not conflict with or obstruct implementation of the 2017 Clean Air Plan, and impacts would be *less than significant*.

b) *Would the proposed project violate any air quality standard or contribute substantially to an existing or projected air quality violation?*

BAAQMD has identified thresholds of significance for criteria pollutant emissions and criteria air pollutant precursors, including ROG, NO_x, PM_{10}, and $PM_{2.5}$. Development projects below the significance thresholds are not expected to generate sufficient criteria pollutant emissions to violate any air quality standard or contribute substantially to an existing or projected air quality violation. The following describes changes in regional impacts from short-term construction activities and long-term operation of the proposed project.

Construction Emissions

Construction activities produce combustion emissions from various sources, such as on-site heavy-duty construction vehicles, vehicles hauling materials to and from the site, and motor vehicles transporting the construction crew. Site preparation activities produce fugitive dust emissions (PM_{10} and $PM_{2.5}$) from demolition and soil-disturbing activities, such as grading and excavation. Air pollutant emissions from construction activities on site would vary daily as construction activity levels change. Construction activities associated with the proposed project would result in emissions of reactive organic gases (ROG), oxides of nitrogen (NO_x), CO, PM_{10}, and $PM_{2.5}$. Because BAAQMD does not have screening criteria for PV facilities, a quantified analysis of the proposed project's construction emissions was conducted using California Emissions Estimator Model (CalEEMod) based on information available.

Fugitive Dust

Ground-disturbing activities have the potential to generate fugitive dust. Fugitive dust emissions (PM_{10} and $PM_{2.5}$) are considered to be significant unless the project implements the BAAQMD's Best Management Practices (BMPs) for fugitive dust control during construction. Fugitive PM_{10} is typically the

most significant source of air pollution from the dust generated from construction. If uncontrolled, PM_{10} and $PM_{2.5}$ levels downwind of actively disturbed areas could possibly exceed State standards. Consequently, construction-related criteria pollutant emissions are potentially *significant* in the absence of BAAQMD's BMPs for fugitive dust control.

Adherence to the BAAQMD's BMPs for reducing construction emissions of PM_{10} and $PM_{2.5}$ would ensure that ground-disturbing activities would not generate a significant amount of fugitive dust. Fugitive dust impacts would be ***less than significant*** with mitigation.

Mitigation Measure AQ (b): The applicant shall require their construction contractor to comply with the following BAAQMD Best Management Practices for reducing construction emissions of PM_{10} and $PM_{2.5}$:

- Water all active construction areas at least twice daily or as often as needed to control dust emissions. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever possible.
- Apply water twice daily or as often as necessary to control dust, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).
- Sweep public streets daily (with water sweepers using reclaimed water if possible) in the vicinity of the project site, or as often as needed, to keep streets free of visible soil material.
- Hydro-seed or apply non-toxic soil stabilizers to inactive construction areas.
- Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (e.g., dirt, sand).
- Limit vehicle traffic speeds on unpaved roads to 15 mph.
- Replant vegetation in disturbed areas as quickly as possible.
- Install sandbags or other erosion control measures to prevent silt runoff from public roadways.

Through the project Mitigation Monitoring or Reporting Program (MMRP) included as Chapter 7 of this Initial Study, the County of Alameda or their designee shall verify that these measures have been implemented during normal construction site inspections.

Construction Exhaust Emissions

Construction emissions are based on the preliminary construction schedule developed for the proposed project. The proposed project is estimated to take approximately 12 months to complete and is anticipated to be finished in the year 2019. To determine potential construction-related air quality impacts, criteria air pollutants generated by project-related construction activities are compared to the BAAQMD significance thresholds. Average daily emissions are based on the annual construction emissions

divided by the total number of active construction days. As shown in Table 5-1, criteria air pollutant emissions from construction equipment exhaust would not exceed the BAAQMD average daily thresholds. Therefore, construction-related criteria pollutant emissions from exhaust are *less than significant*.

TABLE 5-1 CONSTRUCTION-RELATED CRITERIA AIR POLLUTANT EMISSIONS ESTIMATES

	Criteria Air Pollutants (tons/year)[a]					
Year	VOC	NO_x	Fugitive PM_{10}[b]	Exhaust PM_{10}	Fugitive $PM_{2.5}$[b]	Exhaust $PM_{2.5}$
2018	<1	2	<1	<1	<1	<1
2019 Phase 1	<1	<1	<1	<1	<1	<1
2019 Phase 2	<1	2	<1	<1	<1	<1
Total	<1	4	<1	<1	<1	<1
	Criteria Air Pollutants (average lbs/day)[a]					
Average Daily Emissions[c] Phases 1 & 2	3	30	2	2	1	2
BAAQMD Average Daily Project-Level Threshold	54	54	BMPs	82	BMPs	54
Exceeds Average Daily Threshold?	**No**	**No**	**NA**	**No**	**NA**	**No**

Notes: Total emissions may not equal the sum of annual emissions shown due to rounding.
BMP = Best Management Practices;
a. Construction phasing and equipment mix are based on the preliminary information provided by the project applicant. Where specific information regarding project-related construction activities was not available, construction assumptions were based on California Emissions Estimator Model (CalEEMod) defaults, which are based on construction surveys conducted by South Coast Air Quality Management District of construction equipment and phasing for comparable projects.
b. Includes implementation of BMPs for fugitive dust control required by BAAQMD as mitigation, including watering disturbed areas a minimum of two times per day, reducing speed limit to 15 miles per hour on unpaved surfaces, and street sweeping.
c. Average daily emissions are based on the total construction emissions divided by the total number of active construction days. The total number of construction days is estimated to be 261 days.
Source: California Emissions Estimator Model (CalEEMod) 2016.3.2.

Operational Emissions

Project operation would only generate occasional trips by project maintenance workers to perform routine maintenance and repairs, and a water truck that would make deliveries to the project site approximately 206 times per year. These trips are anticipated to be sporadic and nominal (less than 10 one-way trips per day). Accordingly, long-term air pollutant emissions generated by a PV facility would be minimal, as the proposed project generates nominal vehicle trips and net negative energy use. Emissions of CO, VOCs, NO_x, and SO_2 are primarily emitted from the combustion of fossil fuels, gasoline, or diesel associated with motor vehicle usage and transportation. Ozone (O_3) is a secondary criteria air pollutant, which is formed when VOCs and NO_x undergo photochemical reactions in sunlight. Particulate emissions have several sources, including industrial, agricultural, construction, and transportation activities. Once operational, the proposed project would generate nominal operational-related criteria air pollutant emissions. Furthermore, the proposed project would be providing solar energy, contributing to the overall reduction in criteria air pollutants emitted from electricity generation and providing a cleaner alternative

to nonrenewable sources of energy. Therefore, operational phase criteria air pollutant emissions would be *less than significant*.

e) *Would the proposed project result in a cumulatively considerable net increase of any criteria pollutant for which the project area is in non-attainment under applicable federal or State ambient air quality standards (including releasing emissions which exceed quantitative thresholds for ozone precursors)?*

This section analyzes potential impacts related to air quality that could occur from a combination of the proposed project with other past, present, and reasonably foreseeable projects within the Air Basin. Any project that produces a significant project-level regional air quality impact in an area that is in nonattainment within the Air Basin adds to the cumulative impact. Accordingly, a project is considered cumulatively significant when project-related emissions exceed the BAAQMD emissions thresholds.

As described in Criterion (b) of this section, the proposed project would not have a significant long-term operational phase impact. However, without incorporation of fugitive dust control measures, construction activities associated with the proposed project could potentially result in significant regional short-term air quality impacts. Implementation of Mitigation Measure AQ (b) would ensure that required fugitive dust control measures are implemented to control project-related fugitive dust generated during construction activities. Therefore, compliance with Mitigation Measure AQ (b) would ensure that the project's contribution to cumulative air quality impacts would be *less than significant*.

c) *Would the proposed project expose sensitive receptors to substantial pollutant concentrations?*

Off-Site Community Risk and Hazards During Construction

The proposed project would elevate concentrations of TACs and $PM_{2.5}$ in the vicinity of sensitive land uses during construction activities. The BAAQMD has developed Screening Tables for Air Toxics Evaluation During Construction that evaluate construction-related health risks associated with residential, commercial, and industrial projects.[21] According to the screening tables, construction activities occurring within 328 feet (100 meters) of sensitive receptors would result in potential health risks and warrant a health risk analysis. The nearest sensitive receptors to the project site include the single-family residence on the southwest corner of the project site, the single-family residence to the north of the project site along North Livermore Avenue, and the single-family residences along Bel Roma Road to the east of the project site. Because these residences fall within the 328 feet (100 m) screening distance, project-related construction activities could result in potential health risk impacts to the sensitive receptors at these locations. Consequently, a full health risk assessment (HRA) of TACs and $PM_{2.5}$ was prepared and included as Appendix C of this Initial Study.

Sources evaluated in the HRA include off-road construction equipment and heavy-duty diesel trucks along the truck route based on the 12-month construction duration and off-road equipment list provided by the Applicant. The Environmental Protection Agency AERMOD air dispersion modeling program and the latest HRA guidance from the Office of Environmental Health Hazard Assessment (OEHHA) were used to

[21] Bay Area Air Quality Management District (BAAQMD), 2010, May. Screening Tables for Air Toxics Evaluation During Construction. Version 1.0, May.

estimate excess lifetime cancer risks, chronic noncancer hazard indices, and the $PM_{2.5}$ maximum annual concentrations at the nearest sensitive receptors. Results of the analysis are shown in Table 5-2.

TABLE 5-2 CONSTRUCTION HEALTH RISK ASSESSMENT RESULTS

	Project Level Risk		
Receptor	Cancer Risk (per million)	Chronic Hazards	Fine Particulate Matter ($\mu g/m^3$)[a]
Maximum Exposed Off-Site Resident	7.8	0.028	0.07
Threshold	10	1.0	0.30
Exceeds Threshold?	**No**	**No**	**No**

Note: Cancer risk calculated using 2015 Office of Environmental Health Hazard Assessment (OEHHA) Health Risk Assessment Guidance (HRA) guidance.
a. Microgram per cubic meter (µg/m3) is a standard unit of measurement used for particulate matter.

The results of the HRA are based on the maximum exposed receptor concentration over a 12-month construction exposure period for off-site receptors, assuming 24-hour outdoor exposure, and averaged over a 70-year lifetime. Cancer risk for the maximum exposed receptor (MER) from project-related construction emissions was calculated to be 7.8 in a million, which would not exceed the 10 in a million significance threshold. For non-carcinogenic effects, the chronic hazard index identified for each toxicological endpoint totaled less than one for all the off-site sensitive receptors. Therefore, chronic non-carcinogenic hazards are within acceptable limits. The highest $PM_{2.5}$ annual concentration of 0.07 micrograms per cubic meter ($\mu g/m^3$) is below the BAAQMD significance threshold of 0.3 $\mu g/m^3$. Therefore, the project would not expose sensitive receptors to substantial concentrations of air pollutant emissions during construction and impacts would be *less than significant*.

Carbon Monoxide Hotspots

Areas of vehicle congestion have the potential to create pockets of carbon monoxide (CO) called hotspots. These pockets have the potential to exceed the State one-hour standard of 20 parts per million (ppm) or the 8-hour standard of 9.0 ppm. Because CO is produced in the greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to ambient air quality standards is typically demonstrated through an analysis of localized CO concentrations. Hotspots are typically produced at intersections, where traffic congestion is highest because vehicles queue for longer periods and are subject to reduced speeds. The proposed project would construct a PV facility, and would only generate vehicle trips from employees and deliveries to the project site. The proposed project would not exceed BAAQMD screening criteria by increasing traffic volumes at affected intersections by more than 44,000 vehicles per hour or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited. Thus, localized air quality impacts related to mobile-source emissions would therefore be *less than significant*.

d) *Would the proposed project create objectionable odors affecting a substantial number of people?*

Construction and operation of PV facilities would not generate substantial odors or be subject to odors that would affect a substantial number of people. The type of facilities that are considered to have objectionable odors include wastewater treatments plants, compost facilities, landfills, solid waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch plants, chemical manufacturing, and food manufacturing facilities. PV facilities are not associated with foul odors that constitute a public nuisance. Furthermore, nuisance odors are regulated under BAAQMD Regulation 7, Odorous Substances, which requires abatement of any nuisance generating an odor complaint. BAAQMD's Regulation 7, Odorous Substances, places general limitations on odorous substances and specific emission limitations on certain odorous compounds. In addition, odors are also regulated under BAAQMD Regulation 1, Rule 1-301, Public Nuisance, which states that "no person shall 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 the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property." Accordingly, odor impacts from daily operation activities would be ***less than significant***.

During construction activities, construction equipment exhaust and application of asphalt and architectural coatings would temporarily generate odors. Any construction-related odor emissions would be temporary and intermittent. Additionally, noxious odors would be confined to the immediate vicinity of the construction equipment. By the time such emissions reach any sensitive receptor sites, they would be diluted to well below any level of air quality concern. Accordingly, odor impacts from construction activities would be ***less than significant***.

IV. Biological Resources

Would the proposed project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) 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 United States Fish and Wildlife Service (USFWS)?	❒	■	❒	❒
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife (CDFW) or United States Fish and Wildlife Service (USFWS)?	❒	❒	❒	■

Would the proposed project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	❒	■	❒	❒
d) 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) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	❒	❒	■	❒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	❒	❒	■	❒

Regulatory Framework

Federal

Federal Endangered Species Act (FESA)

The United States Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS) are responsible for implementation of the Federal Endangered Species Act (FESA) (16 United States Code Section 1531 *et seq.*). The act protects fish and wildlife species that are listed as threatened or endangered, and their habitats. "Endangered" species, subspecies, or distinct population segments are those that are in danger of extinction through all or a significant portion of their range, and "threatened" species, subspecies, or distinct population segments are likely to become endangered in the near future.

Section 9 of the FESA prohibits the "take" of any fish or wildlife species listed as endangered, including the destruction of habitat that prevents the species' recovery. "Take" is defined as an action or attempt to hunt, harm, harass, pursue, shoot, wound, capture, kill, trap, or collect a species. Section 9 prohibitions also apply to threatened species unless a special rule has been defined with regard to take at the time of listing.

Under Section 9 of the FESA, the take prohibition applies only to wildlife and fish species. However, Section 9 does prohibit the unlawful removal and reduction to possession, or malicious damage or destruction, of any endangered plant from federal land. Section 9 prohibits acts to remove, cut, dig up, damage, or destroy an endangered plant species in nonfederal areas in knowing violation of any State law

or in the course of criminal trespass. Candidate species and species that are proposed or under petition for listing receive no protection under FESA Section 9.

Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA), 16 United States Code Section703, prohibits killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. The MBTA protects whole birds, parts of birds, and bird eggs and nests; and prohibits the possession of all nests of protected bird species whether they are active or inactive. An active nest is defined as having eggs or young, as described by the Department of the Interior in its April 16, 2003 Migratory Bird Permit Memorandum. Nest starts (nests that are under construction and do not yet contain eggs) are not protected from destruction. All native bird species that occur on the project site are protected under the MBTA.

Clean Water Act

The federal Clean Water Act (CWA) is the primary federal law regulating water quality. Implementing the CWA is the responsibility of the United States Environmental Protection Agency (USEPA). The USEPA depends on other agencies, such as individual state government and the United States Army Corps of Engineers (USACE), to assist in implementing the CWA. The objective of the CWA is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Sections 401 and 404 apply to activities that would impact waters in the United States (such as creeks, ponds, wetlands, etc.).

Section 404

The USACE, the federal agency charged with investigating, developing, and maintaining the country's water and related resources, is responsible under Section 404 of the CWA for regulating the discharge of fill material into waters of United States and their lateral limits are defined in Part 328.3(a) of Title 33 of the Code of Federal Regulations (CFR) and include streams that are tributaries to navigable waters and adjacent wetlands. The lateral limits of jurisdiction for a non-tidal stream are measured at the line of the Ordinary High Water Mark or the limit of adjacent wetlands. Any permanent extension of the limits of an existing water of the United States, whether natural or human-made, results in a similar extension of USACE jurisdiction.[22]

In general, a USACE permit must be obtained before an individual project can place fill or grade in wetlands or other waters in the United States and mitigation for such actions will be required based on the conditions of the USACE permit. The USACE is required to consult with the USFWS and/or the NMFS under Section 7 of the FESA if the action being permitted under the CWA could affect federally listed species.

[22] Section 33 Code of Federal Regulation Part 328.5.

Section 401

Pursuant to Section 401 of the CWA, projects that require a USACE permit for discharge of dredge or fill material must obtain a water quality certification or waiver that confirms the project complies with State water quality standards, or a no-action determination, before the USACE permit is valid. State water quality is regulated and administered by the State Water Resources Control Board (SWCB). The Plan Area is within jurisdiction of the San Francisco Bay Regional Water Quality Control Board (RWQCB). In order for the applicable RWQCB to issue a 401 certification, a project must demonstrate compliance with the California Environmental Quality Act (CEQA).

State

California Endangered Species Act

The California Endangered Species Act (CESA) (California Fish and Game Code Section 2050 *et seq.*) establishes State policy to conserve, protect, restore, and enhance threatened or endangered species and their habitats. The CESA mandates that State agencies should not approve projects that jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. For projects that would affect a species that is on the federal and State lists, compliance with the FESA satisfies the CESA if the California Department of Fish and Wildlife (CDFW) determines that the federal incidental take authorization is consistent with the CESA under California Fish and Game Code Section 2080.1. For projects that would result in take of a species that is only State listed, the project proponent must apply for a take permit under Section 2081(b).

California Environmental Quality Act

The California Environmental Quality Act (CEQA) applies to "projects" proposed to be undertaken or requiring approval by State and local government agencies. Projects are defined as having the potential to have physical impact on the environment. Under Section 15380 of CEQA, a species not included on any formal list "shall nevertheless be considered rare or endangered if the species can be shown by a local agency to meet the criteria" for listing. With sufficient documentation, a species could be shown to meet the definition of rare or endangered under CEQA and be considered a "de facto" rare or endangered species.

California Fish and Game Code

Under the California Fish and Game Code, the CDFW provides protection from "take" for a variety of species. The CDFW also protects streams, water bodies, and riparian corridors through the Streambed Alteration Agreement process under Section 1601 to 1606 of the California Fish and Game Code. The California Fish and Game Code stipulates that it is "unlawful to substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream or lake" without notifying the Department, incorporating necessary mitigation, and obtaining a Streambed Alteration Agreement. CDFW's jurisdiction extends to the top of banks and often includes the outer edge of riparian vegetation canopy cover.

California Fish and Game Code Section 3503.5 prohibits "take," possession, or destruction of any raptor (e.g., bird of prey species in the orders Falconiformes and Strigiformes), including their nests or eggs. Violations of this law include destruction of active raptor nests as a result of tree removal and disturbance to nesting pairs by nearby human activity that causes nest abandonment and reproductive failure.

California Native Plant Protection Act

The California Native Plant Protection Act of 1977 prohibits importation of rare and endangered plants into California, "take" of rare and endangered plants, and sale of rare and endangered plants. The CESA defers to the California Native Plant Protection Act, which ensures that State-listed plant species are protected when State agencies are involved in projects subject to CEQA. In this case, plants listed as rare under the California Native Plant Protection Act are not protected under the CESA but rather under CEQA.

California Native Plant Society (CNPS) is a non-governmental conservation organization that has developed a list of plants of special concern in California. The following explains the designations for each plant species:[23]

- Rank 1A – Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere
- Rank 1B – Plants Rare, Threatened, or Endangered in California and Elsewhere
- Rank 2A – Plants Presumed Extirpated in California, But Common Elsewhere
- Rank 2B – Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
- Rank 3 – Plants About Which More Information is Needed - A Review List
- Rank 4 – Plants of Limited Distribution - A Watch List

Although the CNPS is not a regulatory agency and plants on these lists have no formal regulatory protection, plants with a Ranking of 1A through 2B may be considered to meet the definition of endangered, rare, or threatened species under Section 15380(d) of CEQA (see above), and impacts to these species may be considered "significant."

In addition, the CDFW recommends, and local governments may require, protection of species which are regionally significant, such as locally rare species, disjunct populations, essential nesting and roosting habitat for more common wildlife species, or plants with a CNPS Ranking of 3 and 4.

California Natural Communities

Sensitive natural communities are natural community types considered to be rare or of a "high inventory priority" by the CDFW. Although sensitive natural communities have no legal protective status under the federal ESA or CESA, they are provided some level of consideration under CEQA. Appendix G of the CEQA Guidelines identifies potential impacts on a sensitive natural community as one of six criteria to consider in determining the significance of a proposed project. While no thresholds are established as part of this criterion, it serves as an acknowledgement that sensitive natural communities are an important resource and, depending on their rarity, should be recognized as part of the environmental review process. The

[23] California Native Plant Society, 2010, The CNPS Ranking System, http://www.cnps.org/cnps/rareplants/ranking.php accessed on August 15, 2016.

level of significance of a project's impact on any particular sensitive natural community will depend on that natural community's relative abundance and rarity.

As an example, a discretionary project that has a substantial adverse effect on any riparian habitat, native grassland, valley oak woodland, and/or other sensitive natural community would normally be considered to have a significant effect on the environment. Further loss of a sensitive natural community could be interpreted as substantially diminishing habitat, depending on its relative abundance, quality and degree of past disturbance, and the anticipated impacts to the specific community type.

Porter-Cologne Water Quality Control Act

This act authorizes the RWQCB to regulate the discharge of waste that could affect the quality of the State's waters. Projects that do not require a federal permit may still require review and approval by the RWQCB. The RWQCB focuses on ensuring that projects do not adversely affect the "beneficial uses" associated with waters of the State. In most cases, the RWQCB requires the integration of water quality control measures into projects that will require discharge into waters of the State. For most construction projects, the RWQCB requires the use of construction and post-construction best management practices.

Local

East County Area Plan

The ECAP includes the following policy specific to biological resources and applicable to the proposed project.

- Policy 110: The County shall require that developments are sited to avoid or, if avoidance is infeasible, to minimize disturbance of large stands of mature, healthy trees and individual healthy trees of notable size and age. Where healthy trees will be removed, the County shall require a tree replacement program which includes a range of tree sizes, including specimen-sized trees, to achieve immediate visual effect while optimizing the long-term success of the replanting effort.
- Policy 125: The County shall encourage preservation of areas known to support special status species.
- Policy 126: The County shall encourage no net loss of riparian and seasonal wetlands.

East Alameda County Conservation Strategy

The East Alameda County Conservation Strategy (EACCS) is a collaborative document developed by multiple federal, State, and local entities, including Alameda County, to provide an effective framework to protect, enhance, and restore natural resources in eastern Alameda County, while improving and streamlining the environmental permitting process for impacts resulting from infrastructure and development projects. The EACCS study area encompasses 271,485 acres within the County and includes the cities of Dublin, Livermore, and Pleasanton. The EACCS enables project proponents to comply with federal and State regulatory requirements within a framework of comprehensive conservation goals and objectives by implementing standardized mitigation requirements. Although the EACCS does not directly result in permits from any regulatory agencies, the standardized avoidance, minimization, and mitigation measures for species and natural communities provides more certainty for project proponents and local

agencies of regulatory expectations and costs. This approach is expected to streamline the environmental permitting process, reducing the overall cost of environmental permitting and consolidating mitigation. The EACCS addresses 18 "focal species" comprised of 12 wildlife and 6 plant species that meet one of the following criteria: (1) listed under the federal ESA as threatened or endangered, or proposed for listing; (2) listed under the California ESA as threatened or endangered, or proposed for listing; (3) listed under the Native Plant Protection Act as rare; or (4) expected to be listed under the federal or State ESA in the foreseeable future.[24] Focal species with the potential to occur on the project site are included in Table 5-3 below.

Existing Conditions

The following discussion is primarily based on the documents listed below and included in Appendix D of this Initial Study:

- *Results of Biological Resource Assessment for the Proposed Livermore Community Solar Farm Facility*, prepared by LSA Associates, Inc., on June 21, 2016.
- *Sunwalker Energy Livermore Community Solar Farm Congdon's Tarplant Survey Results,* prepared by LSA Associates, Inc., on October 25, 2017.

Methodology

Available literature and mapping of biological resources was reviewed including: records maintained by the California Natural Diversity Data Base (CNDDB) of the CDFW to determine known occurrences of special-status species and sensitive natural communities in the site vicinity and the online Inventory of Rare and Endangered Plants maintained by CNPS.

A field reconnaissance survey of the site was initially conducted on April 27, 2017 to evaluate the potential for occurrence of special-status species. A follow-up survey was completed on October 3, 2017 to document the potential occurrence of Congdon's tarplant on the project site.

Plant Communities

The majority of the site is non-native annual grassland comprised of slender wild oat (*Avena barbata*), soft chess (*Bromus hordeaucus*), cut-leaved geranium (*Geranium dissectum*), foxtail barley (*Hordeum murinum*), spring vetch (*Vicia sativa*), Italian rye grass (*Festuca perennis*), canary grass (*Phalaris paradoxa*), and shamrock clover (*Trifolium dubium*). Other non-native species observed include field bindweed (*Convolvulus arvensis*), Italian thistle (*Carduus pycnocephalus*), black mustard (*Brassica nigra*), cheeseweed mallow (*Malva parviflora*), horehound (*Marrubium vulgare*), prickly lettuce (*Lactuca serriola*), rose clover (*Trifolium hirtum*), milk thistle (*Silybum marianum*), and annual bluegrass (*Poa annua*). A few native species were observed in the grassland including purple owl's clover (*Castillejo exserta*), blow wives (*Microseris douglasii*), annual lupine (*Lupinus bicolor*), fiddleneck (*Amsinckia douglasiana*), and California dandelion (*Agoseris grandiflora*).

[24] East Alameda County Conservation Strategy Steering Committee, 2010. East Alameda County Conservation Strategy, Final Draft, October.

A stand of mature blue gum trees (*Eucalyptus globulus*) line the perimeter of the single-family home. Smaller trees adjacent to the property include California buckeye (*Aesculus californica*) and mulberry (*Morus alba*).

Special-Status Species

Special-status species are plants and animals that are legally protected under the State and/or federal ESAs or other regulations, as well as other species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations, nesting or denning locations, communal roosts and other essential habitat. Special-status species receive varying degrees of legal protection under both the State and/or federal ESAs, and the CEQA. The USFWS, National Marine Fisheries Service (NOAA Fisheries), and CDFW share responsibility for protection and management of natural resources. Species with legal protection under the ESAs often represent major constraints to development, particularly when they are wide-ranging or highly sensitive to habitat disturbance and where proposed development would result in a "take" of these species. If a listed species may be affected by proposed development, the lead agency must initiate a consultation with the USFWS, NOAA Fisheries, and/or CDFW, as required by State or federal law.

Below is a summary of the special-status plant and animal species reported to occur within the vicinity of the project site.

Special Status Animal Species

A number of bird, mammal, reptile, and invertebrate species with special-status are known or suspected to possibly occur within the vicinity of the project site. Table 5-3 includes the name, status, and preferred habitat for the seven special-status animal species considered to have the highest potential for occurrence in the project vicinity, and indication of the likelihood of occurrence within the project site; these are described below. As shown in Table 5-3, the California tiger salamander or California red-legged frog have the potential to occur on the project site.

California tiger salamander

California tiger salamander (CTS) is listed by the USFWS and CDFW as threatened. It occurs in grassland and savanna habitat, breeding in vernal pools and swales, seasonal drainages and man-made ponds, and spending most of the year in subterranean refugia such as rodent burrows, cracks, and under rocks and logs. Adults migrate to suitable breeding locations with the onset of sustained rainfall, and have been reported to move considerable distances. The CNDDB records search identified nine known CTS occurrences within 2 miles of the project site, the closest of which was approximately 1.3 miles south of the project site where numerous adults were found in nocturnal surveys and pitfall traps.[25] CTS occurrences have also been recorded at Cayetano Creek approximately 1.8 miles north of the project site.

[25] A pitfall trap is a trapping pit for small animals such as insects, amphibians and reptiles.

TABLE 5-3 SPECIAL STATUS ANIMAL SPECIES WITH THE POTENTIAL TO OCCUR ON THE PROJECT SITE

Species Name	Status (Federal/State/Other)[a]	Habitat Characteristics (Occurrence within the Project Site Vicinity)
Invertebrates		
Vernal pool fairy shrimp	FT/–/– (EACCS)	Vernal pools ranging from small, clear sandstone rock pools to large, turbid, alkaline grassland valley floor pools. (not likely)
Longhorn fairy shrimp	FE/–/– (EACCS)	Vernal pools ranging from small, clear sandstone rock pools to large, turbid, alkaline grassland valley floor pools. (not likely)
Amphibians and Reptiles		
California tiger salamander	FT/ST/SSC (EACCS)	Grasslands and foothills that contain small mammal burrows for dry-season retreats and seasonal ponds and pools for breeding during the rainy season. (possible)
California red-legged frog	FT/–/SSC (EACCS)	Ponds, streams, drainages and associated uplands; requires areas of deep, still, and/or slow-moving water for breeding. (possible)
Alameda whipsnake	FT/ST/– (EACCS)	Chaparral and sage scrub with rock outcrops, deep crevices or abundant rodent burrows. (unlikely)
Birds		
Burrowing owl	–/–/SSC	Open habitats (e.g., grasslands, agricultural areas) with mammal burrows or other features (e.g., culverts, pipes, and debris piles) suitable for nesting and roosting. (possible)
Mammals		
San Joaquin kit fox	FE/ST/– (EACCS)	Annual grasslands with scattered shrubby vegetation. Loose-textured soils required for digging burrows. (unlikely)

a. Status Determinations:
FE = Listed as Endangered under federal Endangered Species Act
FT = Listed as Threatened under federal Endangered Species Act
ST = Listed as Threatened under the California Endangered Species Act
SSC: Considered a "California Species of Special Concern" by the CDFW
EACCS: Listed as a focal species under the East Alameda County Conservation Strategy
Source: LSA Associates, Inc., Results of Biological Assessment for the Proposed Livermore Community Solar Farm Facility, June 21, 2016, Table A.

The project site is devoid of ephemeral wetlands suitable for CTS breeding, and is nearly devoid of mammal burrows due to the very hard clay soils, with minimal cracking to provide refuge. However, given the presence of known and potential breeding sites within 1.3 miles of the project site, there is a possibility that CTS may use the project site for migration and dispersal.

California red-legged frog

California red-legged frog (CRLF) is listed by the USFWS as threatened and is recognized as a SSC by the CDFW. It inhabits ponds, marshes, and streams that typically support riparian vegetation, but can also be found in man-made stock ponds, near seeps, and in ephemeral streams with pools. This subspecies requires still or slow-moving water during the breeding season, where it deposits large egg masses, usually attached to submerged or emergent vegetation. Adult CRLF are capable of dispersing long distances from aquatic habitat, and may utilize ephemeral water sources during the wet season. Individuals are known to disperse during the rainy season, presumably in search of new breeding locations. They may take refuge in small mammal burrows, beneath leaf litter, or in other moist areas

during periods of inactivity or whenever it is necessary to avoid desiccation. The CNDDB records search identified 20 known occurrences within 2 miles of the project site, the closes of which is an observation of five CRLF juveniles approximately 1.3 miles to the southwest of the project site. CRLF occurrences have also been recorded 1.5 miles to the north and south of Cayetano Creek.

The project sites proximity to potential breeding habitats located at Cayetano creek increases the likelihood that CRLF could occur on the project site at certain times of the year (i.e., moving between pools, foraging). Based on the habitat conditions in the channel and in the adjacent uplands, it is anticipated that both the USFWS and CDFW will assume presence of CRLF at the site.

Special Status Plant Species

A number of plant species with special-status are known or suspected to possibly occur within the vicinity of the project site. Table 5-4 includes the name, status, and preferred habitat for the ten special-status plant species considered to have the highest potential for occurrence in the project vicinity, and indication of the likelihood of occurrence within the project site; these are described below.

Jurisdictional Waters

Although definitions vary to some degree, wetlands are generally considered to be areas that are periodically or permanently inundated by surface or ground water, and support vegetation adapted to life in saturated soil. Wetlands are recognized as important features on a regional and national level due to their high inherent value to fish and wildlife, use as storage areas for storm and flood waters, and water recharge, filtration, and purification functions. Technical standards for delineating wetlands have been developed by the USACE and the USFWS, which generally define wetlands through consideration of three criteria: hydrology, soils, and vegetation.

The CDFW, USACE, and RWQCB have jurisdiction over modifications to shorelines, open water, stream channels, river banks, and other waterbodies (see detailed descriptions under Regulatory Context). Jurisdiction of the USACE is established through the provisions of Section 404 of the CWA, which prohibits the discharge of dredged or fill material into "waters" of the United States without a permit, including wetlands and unvegetated "other waters." All three of the identified technical criteria must be met for an area to be identified as a wetland under USACE jurisdiction, unless the area has been modified by human activity. Jurisdictional authority of the CDFW over wetland areas is established under Section 1601-1606 of the Fish and Wildlife Code, which pertains to activities that would disrupt the natural flow or alter the channel, bed, or bank of any lake, river, or stream. The RWQCB is responsible for enforcing the provisions of Section 401 of the CWA, as defined by the USACE under Section 404, and for overseeing State waters as defined under the Porter-Cologne Water Quality Act. State waters typically extend to the top of a creek or river bank, or the limits of woody riparian vegetation, whichever is greater.

Formal wetland delineation was not conducted as part of the field survey; however, two potential seasonal wetland features were observed adjacent to the single-family home located on the southwest corner of the project site. Evidence of redoximorphic features, a hydric soil indicator, as well as hydrologic indicators such as algal matting, and hydrophytic vegetation were present in these areas.

TABLE 5-4 SPECIAL STATUS PLANT SPECIES EVALUATE FOR POTENTIAL TO OCCUR ON THE PROJECT SITE

Species Name	Status (federal/State/Other)a	Habitat Characteristics (Occurrence within the Project Site Vicinity/Survey Results)
Congdon's tarplant	–/–/1B.1	Congdon's tarplant is an annual herb that occurs in alkaline soils in valley and foothill grassland below 750 feet in elevation. (unlikely/not observed)
Livermore tarplant	–/SE/1B.1	Livermore tarplant is an annual herb that occurs in alkaline meadows and seeps between 490 and 610 feet in elevation. (unlikely/not observed)
Diablo helianthella	–/–/1B.2	Diablo helianthella is a perennial herb that occurs in broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland between 200 and 4,250 feet in elevation. (possible/additional surveys needed)
Caper-fruited tropidocarpum	–/–/1B.1	Caper-fruited tropidocarpum is an annual herb that occurs in alkaline hills in valley and foothill grassland below 1,500 feet in elevation. (possible/additional surveys needed)
Heartscale	–/–/1B.2	Heartscale occurs on alkaline substrates in chenopod scrub, meadows and seeps, and valley and foothill grassland habitats below 1,230 feet in elevation. (unlikely/not observed)
Brittlescale	–/–/1B.2	Brittlescale is an annual herb that occurs in alkali and clay soils in vernal pools, playas, meadows and seeps, and valley and foothill grassland below 1,000 feet in elevation. (unlikely/not observed)
Lesser saltbush	–/–/1B.1	Lesser saltscale is an annual herb that occurs in sandy, alkaline soils in chenopod scrub, playas, and valley and foothill grassland below 650 feet in elevation. (unlikely/not observed)
San Joaquin spearscale	–/–/1B.2	San Joaquin spearscale is an annual herb that occurs in alkaline soils in chenopod scrub, meadows, alkali sinks, playas, and valley and foothill grassland below 2,750 feet in elevation. (unlikely/not observed)
Alkali milkvetch	–/–/1B.2	Alkali milkvetch is an annual herb that occurs in adobe clay soil in playa and alkaline vernal pools and flats within valley grassland below 550 feet in elevation. (possible/additional surveys needed)
Saline clover	–/–/1B.2	Saline clover is an annual herb that occurs in marshes and swamps, mesic valley and foothill grassland with alkaline soils, and vernal pools below 1,000 feet in elevation. (possible/additional surveys needed)
Round-leaved filaree	–/–/1B.2	Round-leaved filaree is an annual herb that occurs in clay substrates in cismontane woodland and valley and foothill grassland between 50 and 3,900 feet in elevation. (possible/additional surveys needed)
Mt. Diablo fairy-lantern	–/–/1B.2	Mt. Diablo fairy lantern is a perennial bulbiferous herb that occurs in chaparral, cismontane and riparian woodland, and valley and foothill grassland below 2,750 feet in elevation. (possible/additional surveys needed)
Hispid salty bird's-beak	–/–/1B.1	Hispid bird's-beak is a hemiparasitic herb that occurs in alkaline meadows and seeps, playas, and valley and foothill grassland below 500 feet in elevation. (possible/additional surveys needed)
Palmate salty bird's-beak	FE/SE/1B.1	Palmate salty bird's-beak is a hemiparasitic annual herb that occurs in alkaline soils in chenopod scrub and valley and foothill grassland between 15 and 510 feet in elevation. (possible/additional surveys needed)
Prostrate vernal pool navarretia	-/--/1B.1	Prostrate vernal pool navarretia is an annual herb that occurs in mesic coastal scrub, meadows and seeps, alkaline valley and foothill grasslands, and vernal pools below 2,300 feet in elevation. (possible/additional surveys needed)

a. Status Determinations:
FE = Listed as Endangered under federal Endangered Species Act
SE = Listed as Endangered under the California Endangered Species Act
1B.1 = Listed as Plants Rare, Threatened, or Endangered in California and Elsewhere by California Native Plant Society; seriously threatened in California
1B.2 = Listed as Plants Rare, Threatened, or Endangered in California and Elsewhere by California Native Plant Society; moderately threatened in California
Source: LSA Associates, Inc., Results of Biological Assessment for the Proposed Livermore Community Solar Farm Facility, June 21, 2016, Table A.

Wildlife Corridors

A wildlife corridor is a link of wildlife habitat, generally native vegetation, which joins two or more larger areas of similar wildlife habitat. Corridors are critical for the maintenance of ecological processes including allowing for the movement of animals and the continuation of viable populations. Historically, the grasslands in eastern Alameda County were connected through the lowland valleys and stream systems through the Livermore Valley. The majority of this area has been converted to urban and agricultural uses, fragmenting and separating grassland habitat. In addition, I-580 serves as a barrier between the northern and southern parts of the County, with only a few linkages (undercrossings) under the freeway between Livermore and the Alameda/San Joaquin County line.

The grassland complex in northeastern Alameda County contains a portion of the northernmost extent of the range for San Joaquin kit fox (SJKT). The primary SJKT range in Alameda and Contra Costa Counties is in the Diablo Range along the eastern portion of the two counties. This area is characterized by annual grasslands with pockets of oak woodland and chaparral habitats. In addition, pursuant to the EACCS, there are three primary kit fox linkages that cross I-580 between the eastern edge of the City of Livermore and the Alameda/San Joaquin County line. The main "corridor" is the wide grasslands flanking I-580 between Vasco Road and Grant Line Road which is located approximately 3 miles east of the project site.

Discussion

a) *Would the proposed 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 United States Fish and Wildlife Service (USFWS)?*

There is a remote potential that the proposed project could have a substantial adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS. This consists of: 1) a remote possibility that CTS and CLRF could disperse onto the site in the future and be injured or taken during construction; 2) that occurrences of one or more special-status plant species may be present on the site and could be adversely affected if adequate controls during construction are not implemented; and 3) there is a possibility that bird nests regulated under the MBTA and CDFW code could be inadvertently disturbed during construction.

Special-Status Animal Species

Suitable habitat for special-status species known or suspected to occur in the vicinity is generally absent from the site and no impacts are anticipated for most special-status species. This includes absence of suitable habitat for CTS and CLRF. However, given the presence of known and potential breeding sites in close proximity to the project site there remains a remote potential for individual CTS and CRLF to disperse onto the site in the future, and be injured or killed during construction unless construction restrictions are implemented. Given the formal listing status of these species, this would be considered a significant impact. However, the impact would be ***less than significant*** with implementation of the following mitigation measures.

Mitigation Measure BIO (a-1): Ensure Avoidance of California Tiger Salamander. The following measures shall be implemented to ensure avoidance of individual California tiger salamander (CTS) in the remote instance individuals were to disperse onto the site in the future, in advance of or during construction:

- Amphibian exclusion fencing shall be installed 14 days prior to the start of construction and maintained until construction of the proposed project is complete. Such fencing shall run along the perimeter of the area of disturbance. Silt fence material may be used to also provide erosion control, however, per CTS standards, it must be at least 36 inches in height (at least 36 inches above ground and buried at least 6 inches below the ground) and stakes must be placed on the inside of the project boundary (side on which work will take place).
- Pre-construction surveys for CTS shall be conducted prior to initiation of ground disturbing activities. Surveys are to be conducted by qualified biologists with experience surveying for CTS. Prior to initiating surveys, water trucks will spray the work area to influence emergence. Watering will occur at dusk, trucks will make a single pass, and the qualified biologist will survey the watered area for one hour following the spraying. If individuals are found, work shall not commence until they are moved out of the construction zone to an area approved by the California Department of Fish and Wildlife (CDFW).
- A qualified biologist with experience surveying for CTS shall be present during initial ground disturbing activities.
- To avoid entrapment of animals during construction, pipes or similar structures shall be capped if stored overnight. Construction personnel shall inspect open trenches at the beginning and end of each workday for trapped CTS individuals. If individuals are found, the individual shall be relocated by a qualified biologist.
- Tightly woven fiber netting or similar material shall be used for erosion control or other purposes to ensure amphibians do not get trapped. Plastic mono-filament netting (erosion control matting), rolled erosion control products, or similar material shall not be used.

Mitigation Measure BIO (a-2): Ensure Avoidance of California Red-legged Frog. The following measures shall be implemented in locations within 100 feet of any drainage or seasonal wetland on the site to ensure avoidance of individual California red-legged frog (CRLF) in the remote instance individuals were to disperse onto the site in the future in advance of or during construction:

- Amphibian exclusion fencing shall be installed 14 days prior to the start of construction and maintained until construction of the proposed project is complete. Such fencing shall run along the perimeter of the area of disturbance. Silt fence material may be used to also provide erosion control, however, per CRLF standards, it must be at least 36 inches in height (at least 36 inches above ground and buried at least 6 inches below the ground) and stakes must be place on the inside of the project boundary (side on which work will take place).
- Pre-construction surveys for CRLF shall be conducted prior to initiation of project activities (including fence installation) and within 48 hours of the start of ground disturbance activities following completion of exclusion fence installation. Surveys are to be conducted by qualified biologists with experience surveying for CRLF.

- All workers shall be trained by the qualified biologist to understand the remote potential for occurrence of this listed species, need to avoid any potential inadvertent take, and process to follow if a frog is encountered, that all work must stop and the qualified biologist must determine whether it is a CRLF before work proceeds.
- No earth disturbing activities shall take place during rain events when there is potential for accumulation greater than 0.25 inch in a 24-hour period. In addition, no earth disturbing activities shall occur for 48 hours following rain events in which 0.25 inch of rain accumulation within 24 hours.
- Tightly woven fiber netting or similar material shall be used for erosion control or other purposes to ensure amphibians do not get trapped. Plastic mono-filament netting (erosion control matting), rolled erosion control products, or similar material shall not be used.

Special-Status Plant Species

The field reconnaissance survey of the site completed on October 3, 2017, concluded that Condgon's tarplant, Livermore tarplant, Heartscale, Brittlescale, Lesser saltbush, and San Joaquin spearscale were not present on the project site. Therefore, the potential for special-status plant species is considered unlikely or very low; however, there remains a remote possibility that other special-status plant species known to occur in the project vicinity may be present on the project site. If present, the occurrence(s) could be inadvertently lost as a result of grading and other ground disturbing activities. Depending on the location of the occurrence(s) in relation to proposed improvements associated with potential future development under the proposed project, this could be a potentially significant impact. However, the impact would be *less than significant* with implementation of Mitigation Measure BIO (a-3).

Mitigation Measure BIO (a-3): A qualified botanist shall conduct appropriately-timed rare plant surveys during late April and early May to confirm absence of any special-status plant species on the site. The survey shall focus on the special-status plant species considered to have a remote probability for occurrence on the project site. The surveys shall be completed and a report of findings submitted to the County before the onset of any initial ground-disturbing activity or construction associated with project implementation. If any special-status plant species are encountered, then any occurrence(s) shall be avoided or potential impacts adequately mitigated as part of potential future project development. The qualified botanist shall develop and implement a Special-Status Plant Species Mitigation and Monitoring Program (SSPSMMP). The SSPSMMP shall only be required if a listed species or those with a ranking of 1A, 1B or 2 of the California Native Plant Society (CNPS) Inventory are encountered during the preconstruction survey. Potential impacts on any species with a ranking of 3 and 4 of the CNPS Inventory would not be considered significant and no additional mitigation would be required for these species if encountered during the systematic survey(s).

The SSPMMP shall be prepared in consultation with the CDFW and shall be approved by Alameda County prior to any initial ground-disturbing activity or construction. The SSPMMP shall be based on the status and vulnerability of the species present, with avoidance of all or a majority of any populations on the site the preferred method of mitigation. Where complete or even partial avoidance of any special-status plant populations on the site is considered infeasible, options for mitigation may include a program to salvage and reestablish the population at an alternative, suitable

location. Details of any salvage and habitat recreation effort shall include the following criteria and performance standards measures may include:

- Collection of seeds during the appropriate developmental stage of the plan.
- Procedures for sowing techniques appropriate to the life cycle of the plant.
- Preparation of a maintenance and monitoring plan specific to the environmental conditions necessary for survival of the new population. Maintenance and monitoring shall be provided for a minimum of five years to determine success of re-seeding and habitat creation, and need for additional preservation.
- Identification of funding sources to provide implementation of the maintenance and monitoring plan in consultation with the qualified plant ecologist, landscape architect, and civil engineer.
- In addition, preservation of another existing occurrence of the affected special-status plant species shall be required if monitoring indicates that the reestablishment efforts have not been successful after five years. The preservation program shall provide for permanent protection of a different existing population in Alameda County, which is equal or larger in size than that encountered on the site (minimum 1:1 replacement), through land acquisition or use of a conservation easement. Any off-site mitigation lands shall include establishment of a management endowment as necessary to provide for long-term management of the preserved population.

Nesting Birds

There is a remote possibility that the mature stand of eucalyptus trees provides potential nesting habitat for raptors and more common bird species. In addition, the non-native annual grassland vegetation on the project site could provide nesting habitat for resident bird species. These nests would be protected under the federal MBTA and CDFW code when in active use. The MBTA prohibits killing, possessing, or trading of migratory birds, except in accordance with regulations prescribed by the USFWS; this prohibition includes whole birds, parts of birds, and bird nests and eggs. Ground disturbing activities during the breeding season could result in the incidental loss of fertile eggs or nestlings or nest abandonment if any active nests are present. This would be considered a significant impact; however, the impact would be ***less than significant*** with implementation of Mitigation Measure BIO (a-4).

Mitigation Measure BIO (a-4): Ground disturbing activities shall be performed in compliance with the Migratory Bird Treaty Act and relevant sections of the California Department of Fish and Wildlife (CDFW) code to avoid loss of nests in active use. This shall be accomplished by scheduling ground disturbing activities outside of the bird nesting season (which occurs from February 1 to August 31) to avoid possible impacts on nesting birds. Alternatively, ground disturbing activities cannot be scheduled during the non-nesting season (September 1 to January 31), a pre-construction nesting survey shall be conducted. The pre-construction nesting survey shall include the following:

- A qualified biologist (Biologist) shall conduct a pre-construction nesting bird (both passerine and raptor) survey within seven calendar days prior to ground disturbing activities.
- If no nesting birds or active nests are observed, no further action is required. Ground disturbing activities shall occur within seven calendar days of the survey.

- If any active nests are encountered, the Biologist shall determine an appropriate disturbance-free buffer zone to be established around the nest location(s) until the young have fledged. Buffer zones vary depending on the species (i.e., typically 75 to 100 feet for passerines and 300 feet for raptors) and other factors such as ongoing disturbance in the vicinity of the nest location. If necessary, the dimensions of the buffer zone shall be determined in consultation with the CDFW.
- Orange construction fencing, flagging, or other marking system shall be installed to delineate the buffer zone around the nest location(s) within which no construction-related equipment or operations shall be permitted. Continued use of existing facilities such as surface parking and site maintenance may continue within this buffer zone.
- Construction activities shall be restricted from the buffer zone until the Biologist has determined that young birds have fledged and the buffer zone is no longer needed.
- A survey report of findings verifying that any young have fledged shall be submitted by the Biologist for review and approval by the County prior to initiation of any construction activities within the buffer zone. Following written approval by the County construction within the nest-buffer zone may proceed.

b) *Would the proposed project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife (CDFW) or United States Fish and Wildlife Service (USFWS)?*

As discussed above, the majority of the project site is primarily comprised of non-native grassland. Riparian habitat, native grasslands, and other sensitive natural community types are absent from the project site. Therefore, there would be ***no impact*** on sensitive natural communities.

c) *Would the proposed project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

Grading and other improvements associated with the project implementation could result in direct and indirect effects on the two potential seasonal wetlands. Modifications to regulated waters would require appropriate authorizations from federal and State regulatory agencies, including the USACE and RWQCB under Section 404 and 401 of the CWA, and CDFW under the Streambed Alteration Agreement program. Accordingly, without mitigation, the proposed project could result in significant impacts with regards to wetlands and other waters. However, the impact would be ***less than significant*** with implementation of Mitigation Measure BIO (c).

Mitigation Measure BIO (c): The project applicant shall realign the proposed perimeter swale to provide a 25-foot buffer between the potential wetland and the proposed swale. Prior to the initiation of ground disturbing activities, temporary orange construction fencing shall be installed around the potential wetland features to prohibit inadvertent damage to the potential wetland features during construction activities.

d) *Would the proposed 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?*

As discussed above, the main corridor for the SJKT is located between Vasco Road and Grant Line Road which is located approximately 3 miles east of the project site. Accordingly, the proposed project would not create barriers or temporarily disturb the existing SJKT wildlife corridor. In addition, the project site does not serve as a wildlife nursery. Therefore, the proposed project would not result in any substantial adverse impacts on wildlife movement opportunities or native nurseries and impacts would be ***less-than-significant***.

e) *Would the proposed project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

In general, the proposed project would not conflict with any goals and policies of the Alameda County General Plan, ECAP, or conflict with any ordinances. With the exception of the mature trees which will be preserved on site, sensitive biological resources are generally absent from the site. Measures called for in Mitigations BIO (a-1) through BIO (a-4) would ensure avoidance of any special-status species in the remote instance that they disperse onto or establish new nests on the site. Accordingly, the proposed project would not conflict with any local policies or ordinances protecting biological resources and impacts would be ***less-than-significant***.

f) *Would the proposed project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

As discussed above, the EACCS provides a framework to protect, enhance, and restore natural resources in eastern Alameda County; however, the EACCS does not directly result in permits from any regulatory agencies and is not a formally adopted Habitat Conservation Plan.[26,27] Nevertheless, for the purposes of this analysis the EACCS is considered a local habitat conservation plan.

The project site is within the EACCS Conservation Zone 4 (CZ4) which encompasses a portion of the northeastern area of the county. The CZ4 is comprised of grassland, alkali meadow and scald, valley sink scrub, alkali wetland, and seasonal wetland. Conservation priorities within the CZ4 are based on the rarity of the feature and the risk of losing conservation opportunities in the future. Portions of the CZ4 include critical habitat for CRLF and known occurrences of Congdon's tarplant. As discussed in Criterion (a) of this section, suitable habitat for CRLF is absent from the site; however, given the formal listing of the species implementation of Mitigation Measure BIO (a-2) would ensure avoidance of individual of CRLF should they disperse on the site in the future. With respect to Congdon's tarplant, the field reconnaissance survey of the site completed on October 3, 2017, concluded that Condgon's tarplant was not present on

[26] East Alameda County Conservation Strategy Steering Committee, East Alameda County Conservation Strategy, Final Draft, October 2010, Section 1.3, Scope of Conservation Strategy, pages 1-7 to 1-8.

[27] East Alameda County Conservation Strategy Steering Committee, East Alameda County Conservation Strategy, Final Draft, October 2010, Figure 1-1, Study Area East Alameda County, page 1-29.

the project site. However, Mitigation Measure BIO (a-3) would ensure that any occurrence(s) shall be avoided and adequately mitigated as part of potential future project development. Accordingly, the proposed project would not conflict with the EACCS conservation strategy for CZ4 and impacts would be *less-than-significant.*

V. Cultural Resources

Would the proposed project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	❒	❒	❒	■
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	❒	■	❒	❒
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	❒	■	❒	❒
d) Disturb any human remains, including those interred outside of dedicated cemeteries?	❒	■	❒	❒

Regulatory Framework

Federal

American Indian Religious Freedom Act and Native American Graves and Repatriation Act

The American Indian Religious Freedom Act recognizes that Native American religious practices, sacred sites, and sacred objects have not been properly protected under other statutes. It establishes as national policy that traditional practices and beliefs, sites (including right of access), and the use of sacred objects shall be protected and preserved. Additionally, Native American remains are protected by the Native American Graves and Repatriation Act of 1990.

Paleontological Resources Preservation Act

The federal Paleontological Resources Preservation Act of 2002 limits the collection of vertebrate fossils and other rare and scientifically significant fossils to qualified researchers who have obtained a permit from the appropriate state or federal agency. Additionally, it specifies these researchers must agree to donate any materials recovered to recognized public institutions, where they will remain accessible to the public and to other researchers. This Act incorporates key findings of a report, *Fossils on Federal Land and*

Indian Lands, issued by the Secretary of Interior in 2000, which establishes that most vertebrate fossils and some invertebrate and plant fossils are considered rare resources.[28]

State

Public Resources Code Section 5097.5

California PRC Section 5097.5 prohibits "knowing and willful" excavation or removal of any "vertebrate paleontological site…or any other archaeological, paleontological or historical feature, situated on public lands, except with express permission of the public agency having jurisdiction over such lands." Public lands are defined to include lands owned by or under the jurisdiction of the State or any city, county, district, authority, or public corporation, or any agency thereof.

State Laws Pertaining to Human Remains

Any human remains encountered during ground-disturbing activities are required to be treated in accordance with California Code of Regulations Section 15064.5(e) (CEQA), Public Resources Code Section 5097.98, California Health and Safety Code Section 7050.5. California law protects Native American burials, skeletal remains, and associated grave goods regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Specifically, Section 7050.5 of the California Health and Safety Code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are determined to be of Native American origin, the county coroner must contact the California Native American Heritage Commission (NAHC) within 24 hours of this identification. An NAHC representative will then identify a Native American Most Likely Descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods. In addition, CEQA Guidelines Section 15064.5 specifies the procedures to be followed in case of the discovery of human remains on non-federal land. The disposition of Native American burials falls within the jurisdiction of the NAHC.

Assembly Bill 52

Assembly Bill 52 (AB 52), the Native American Historic Resource Protection Act, sets forth a proactive approach intended to reduce the potential for delay and conflicts between Native American and development interests. Projects subject to AB 52 are those that file a notice of preparation for an EIR or notice of intent to adopt a negative or mitigated negative declaration on or after July 1, 2016. AB 52 adds tribal cultural resources (TCR) to the specific cultural resources protected under CEQA. Under AB 52, a TCR is defined as a site, feature, place, cultural landscape (must be geographically defined in terms of size and scope), sacred place, or object with cultural value to a California Native American tribe that is either

[28] U.S. Department of the Interior. *Fossils on Federal & Indian Lands, Report of the Secretary of the Interior*, May 2000, https://www.blm.gov/sites/blm.gov/files/programs_paleontology_quick%20links_Assessment%20of%20Fossil%20Management%20on%20Federal%20&%20Indian%20Lands,%20May%202000.pdf, accessed on June 21, 2017.

included or eligible for inclusion in the California Register, or included in a local register of historical resources. A Native American Tribe or the lead agency, supported by substantial evidence, may choose at its discretion to treat a resource as a TCR. AB 52 also mandates lead agencies to consult with tribes, if requested by the tribe, and sets the principles for conducting and concluding consultation.

Local

East County Area Plan

The ECAP includes the following policies specific to cultural resources and applicable to the proposed project.

- **Policy 136**: The County shall identify and preserve significant archaeological and **historical resources**, including structures and sites which contribute to the heritage of East County.
- **Policy 137:** The County shall require development to be designed to avoid **cultural resources** or, if avoidance is determined by the County to be infeasible, to include implement appropriate mitigation measures that offset the impacts.

Alameda County Municipal Code

The overall purpose to ACMC Chapter 17.62, Historic Preservation Ordinance, is to outline a consistent process for making determinations of historical significance and identify significant architectural, historic, prehistoric and cultural structures, sites, resources and properties within Alameda County. ACMC Section 17.62.040, Cultural resource surveys, requires the County to maintain a list of cultural resources surveys to generate an inventory of potential historic resources collectively known as the *Alameda County Register*. The project site is located within the Historical and Cultural Resource Survey, East Alameda County, prepared by Michael R. Corbett in June 2005.[29]

Existing Conditions

Paleontological Resources

Paleontological resources (fossils) are the remains and/or traces of prehistoric plant and animal life exclusive of human remains or artifacts. Fossil remains such as bones, teeth, shells, and wood are found in the geologic deposits (rock formations) in which they were originally buried. Paleontological resources represent a limited, non-renewable, sensitive scientific and educational resource.

The potential for fossil remains at a location can be predicted through previous correlations that have been established between the fossil occurrence and the geologic formations within which they are buried. For this reason, knowledge of the geology of a particular area and the paleontological resource sensitivity of particular rock formations, make it possible to predict where fossils will or will not be encountered.

[29] Alameda County Municipal Code, Title 17 (Zoning), Chapter 17.62 (Historic Preservation Ordinance).

The natural geology of the project site is comprised of Holocene and/or Pleistocene (2.5 million years ago to present) alluvium, lake, playa, and terrace deposits. These deposits primarily consist of non-marine sedimentary rocks but can include marine deposits near the coast.[30] A previous study conducted by Far Western Anthropological Research Group Inc., indicated that buried prehistoric archaeological sites are likely to be found within or underneath Holocene-age depositional land forms. In addition, prehistoric settlements associated with these landforms tend to be located near San Francisco and San Pablo bays and along major, inland watercourses. Although Holocene-age landforms have the potential to contain buried archaeological deposits, the probability of encountering such resources varies significantly.

Archaeological Resources

At the time of European settlement, the project site was included in the territory controlled by the Costanoan or Ohlone Native Americans whose territory extended along the Pacific coast from San Francisco Bay to Point Sur and inland to the coast range of mountains. The Ohlone were hunter-gatherers and maintained organized complex social structures with as many as 30 or 40 villages consisting of up to 15 families. Sites were often situated near sources of fresh water in ecotones where plant and animal life were diverse and abundant. There are no known archaeological remains on the project site; however, given the County's rich Native American history, it is possible that prehistoric and, to a lesser extent, historic-period archeological resources could be found on the project site.

Historical Resources

Historic resources include sites, structures, districts, landmarks, or other physical evidence of past human activity generally greater than 50 years old. The project site is located within the East Alameda County Survey area which has a history of farming and ranching. The area was formally established and named Murray Township in 1853 after an early settler named Michael Murray. The population grew shortly after and settlers quickly established ranches. Trails that connected the ranchos were expanded into roads capable of carrying freight wagons, carriages, and horse and buggy traffic.[31] To recognize the importance of individual properties, historic districts, and contributing resources as key components of the County's heritage, the County compiled a list of County landmarks and contributing buildings known as the *Alameda County Register*. The project site is not recognized as a landmark nor is the single-family home identified as a contributing building.[32]

[30] California Department of Conservation, Geologic Map of California (2010), https://maps.conservation.ca.gov/cgs/gmc/, accessed on May 7, 2018.

[31] Historical and Cultural Resource Survey, East Alameda County, Michael R. Corbett, June 17, 2005.

[32] Alameda County Landmarks & Contributing Buildings, Identified in 2005-2008 Comprehensive Survey, https://www.acgov.org/cda/planning/landuseprojects/documents/phrcList.pdf, accessed on May 7, 2018.

Discussion

a) *Would the proposed project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?*

The types of cultural resources that meet the definition of historical resources under CEQA Section 21084.1 generally consist of districts, sites, buildings, structures, and objects that are significant for their traditional, cultural, and/or historical associations. Under CEQA, both prehistoric and historic-period archaeological sites may qualify based on historical associations.[33] As such, the two main historical resources that are subject to impact, and that may be impacted by implementation of the proposed project, are historical archaeological deposits and historical architectural resources. Impacts to archaeological resources are discussed under Criterion (b).

As described above, the single-family home is not considered a historical resource. Additionally, the project site is not recognized as a historic landmark.[34] With no historical resources available on the project site, there would be ***no impact.***

b) *Would the proposed project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?*

Archaeological deposits that meet the definition of historical resource under CEQA Section 21084.1 or CEQA Guidelines Section 15064.5 could be present within the project site and could be damaged or destroyed by ground-disturbing construction activities (e.g., site preparation and grading) associated with the proposed project. Should this occur, the ability of the deposits to convey their significance, either as containing information about prehistory or history, or as possessing traditional or cultural significance to Native American or other descendant communities, would be materially impaired.

As described above, Alameda County was inhabited by the Ohlone Native Americans. Therefore, it is possible that unknown buried archaeological materials could be found during ground-disturbing activities, including unrecorded Native American prehistoric archaeological materials. While the ECAP includes policies that require the protection of archeological resources, ground-disturbing activities associated with the proposed project could have the potential to uncover and damage or destroy unknown resources. Consequently, without mitigation the proposed project could result in significant impacts to archaeological resources. However, the impact would be ***less than significant*** with implementation of Mitigation Measure CULT (b).

> **Mitigation Measure CULT (b):** If any prehistoric or historic subsurface cultural resources are discovered during ground-disturbing activities, all work within 50 feet of the resources shall be halted and a qualified archaeologist shall be consulted to assess the significance of the find according to CEQA Guidelines Section 15064.5. If any find is determined to be significant, representatives from the

[33] California Code of Regulations (CCR), Title 14, Chapter 3, Section 15064.5(c), Determining the Significance of Impacts on Historical and Unique Archaeological Resources.

[34] Alameda County Landmarks & Contributing Buildings, Identified in 2005-2008 Comprehensive Survey, https://www.acgov.org/cda/planning/landuseprojects/documents/phrcList.pdf, accessed on May 7, 2018.

County and the archaeologist would meet to determine the appropriate avoidance measures or other appropriate mitigation. All significant cultural materials recovered shall be, as necessary and at the discretion of the consulting archaeologist, subject to scientific analysis, professional museum curation, and documentation according to current professional standards. In considering any suggested mitigation proposed by the consulting archaeologist to mitigate impacts to historical resources or unique archaeological resources, the County shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, proposed project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g., data recovery) would be instituted. Work may proceed on other parts of the project site while mitigation for historical resources or unique archaeological resources is being carried out.

c) *Would the proposed project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

As discussed above, previous research indicated that buried prehistoric archaeological resources are likely to be found within or underneath Holocene-age depositional land forms on the project site. Accordingly, ground-disturbing activities associated with the proposed project could disturb unrecorded fossils of potential significance and other unique features could exist; thus, resulting in damage to, or destruction of, unknown paleontological resources or unique geological features. Consequently, without mitigation the proposed project could result in significant impacts to paleontological resources. However, the impact would be ***less than significant*** with implementation of Mitigation Measure CULT (c).

Mitigation Measure CULT (c): In the event that fossils or fossil-bearing deposits are discovered during construction, excavations within 50 feet of the find shall be temporarily halted or diverted. The contractor shall notify a qualified paleontologist to examine the discovery. The paleontologist shall document the discovery as needed, in accordance with Society of Vertebrate Paleontology standards (Society of Vertebrate Paleontology 1995), evaluate the potential resource, and assess the significance of the finding under the criteria set forth in CEQA Guidelines Section 15064.5. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the project proponent determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project based on the qualities that make the resource important. The plan shall be submitted to the County for review and approval prior to implementation.

d) *Would the proposed project disturb any human remains, including those interred outside of dedicated cemeteries?*

Human remains associated with pre-contact archaeological deposits could exist on the project site and could be encountered during ground-disturbing activities. Any human remains encountered during ground-disturbing activities are required to be treated in accordance with California Code of Regulations Section 15064.5(e) (CEQA), Public Resources Code Section 5097.98, and California Health and Safety Code Section 7050.5, which state the mandated procedures of conduct following the discovery of human remains. Descendant communities may ascribe religious or cultural significance to such remains, and may view their disturbance as an unmitigable impact. Consequently, without mitigation the proposed project

could result in significant impacts with respect to human remains. However, the impact would be ***less than significant*** with implementation of Mitigation Measure CULT-3.

Mitigation Measure CULT (d): Procedures of conduct following the discovery of human remains have been mandated by Health and Safety Code Section 7050.5, Public Resources Code Section 5097.98 and the California Code of Regulations Section 15064.5(e) (CEQA). According to the provisions in CEQA, if human remains are encountered at the site, all work in the immediate vicinity of the discovery shall cease and necessary steps to ensure the integrity of the immediate area shall be taken. The Alameda County Coroner shall be notified immediately. The Coroner shall then determine whether the remains are Native American. If the Coroner determines the remains are Native American, the Coroner shall notify the Native American Heritage Commission (NAHC) within 24 hours, who will, in turn, notify the person the NAHC identifies as the Most Likely Descendant (MLD) of any human remains. Further actions shall be determined, in part, by the desires of the MLD. The MLD has 48 hours to make recommendations regarding the disposition of the remains following notification from the NAHC of the discovery. If the MLD does not make recommendations within 48 hours, the owner shall, with appropriate dignity, reinter the remains in an area of the property secure from further disturbance. Alternatively, if the owner does not accept the MLD's recommendations, the owner or the descendent may request mediation by the NAHC.

VI. Tribal Cultural Resources

Would the proposed project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a Tribal Cultural Resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is: i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resource Code Section 5024.1. In applying the criteria set forth in subdivision (c) of the Public Resource Code Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance to a California Native American tribe.	❒	■	❒	❒

Regulatory Framework

State

Assembly Bill 52

Assembly Bill 52 (AB 52), the Native American Historic Resource Protection Act, sets forth a proactive approach intended to reduce the potential for delay and conflicts between Native American and development interests. Projects subject to AB 52 are those that file a notice of preparation for an EIR or notice of intent to adopt a negative or mitigated negative declaration on or after July 1, 2016. AB 52 adds "tribal cultural resources" (TCR) to the specific cultural resources protected under CEQA. Under AB 52, a TCR is defined as a site, feature, place, cultural landscape (must be geographically defined in terms of size and scope), sacred place, and object with cultural value to a California Native American tribe that is either included or eligible for inclusion in the California Register, or included in a local register of historical resources. A Native American Tribe or the lead agency, supported by substantial evidence, may choose at its discretion to treat a resource as a TCR. AB 52 also mandates lead agencies to consult with tribes, if requested by the tribe, and sets the principles for conducting and concluding consultation. On June 1, 2017, notification letters were sent to a list of Native American contacts provided by the Native American Heritage Commission (NAHC). At the time of preparation of this Initial Study, Alameda County had yet to receive any requests for notification from tribes.

Existing Conditions

The project site is not included in the California Register and is not included as a historic resource pursuant to the *Alameda County Register*.[35] Currently there are no Traditional Cultural Properties or Cultural Landscapes identified within unincorporated Alameda County. The County has not received any request from any Tribes in the geographic area with which it is traditionally and culturally affiliated with or otherwise to be notified about projects in the county.

Discussion

a) *Would the proposed project cause a substantial adverse change in the significance of a Tribal Cultural Resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:*

i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or

ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resource Code Section 5024.1. In

[35] Alameda County Landmarks & Contributing Buildings, Identified in 2005-2008 Comprehensive Survey, https://www.acgov.org/cda/planning/landuseprojects/documents/phrcList.pdf, accessed on May 7, 2018.

applying the criteria set forth in subdivision (c) of the Public Resource Code Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance to a California Native American tribe?

As discussed in Section V, Cultural Resources, Criteria (b) and (c), ground disturbing activities on the project site would impact unknown archaeological resources including Native American artifacts and human remains. Impacts would be reduced to a *less-than-significant* level with implementation of Mitigation Measures CULT (b) and CULT (c).

Therefore, compliance with existing federal, State, and local laws and regulations would protect unrecorded TCR's on the project site by providing for the early detection of potential conflicts between development and resource protection, and by preventing or minimizing the material impairment of the ability of archaeological deposits to convey their significance through excavation or preservation. Furthermore, implementation of Mitigation Measures CULT (b) and CULT (c) would reduce any impacts to TCR discovered on the project site. Accordingly, impacts would be ***less than significant with mitigation***.

Mitigation Measure TCR (a-1): Implement Mitigation Measure CULT (b).

Mitigation Measure TCR (a-2): Implement Mitigation Measure CULT (c).

VII. Geology and Soils

Would the proposed project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving: i) Strong seismic ground shaking? ii) Seismic-related ground failure, including liquefaction? iii) Landslides, mudslides or other similar hazards?	❒	❒	❒	■
b) Result in substantial soil erosion or the loss of topsoil?	❒	❒	■	❒
c) 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?	❒	❒	❒	■
d) Be located on expansive soil, as defined in Section 1803.5.3 of the California Building Code, creating substantial risks to life or property?	❒	❒	■	❒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of wastewater?	❒	❒	❒	■

Regulatory Framework

State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures used for human occupancy.[36] The main purpose of the act is to prevent the construction of buildings used for human occupancy on top of the traces of active faults. Although the act addresses the hazards associated with surface fault rupture, it does not address other earthquake-related hazards, such as seismically-induced ground shaking, liquefaction, or landslides.[37]

The law requires the State Geologist to establish regulatory zones (known as Earthquake Fault Zones or Alquist-Priolo Zones) around the surface traces of active faults, and to publish appropriate maps that depict these zones.[38] The maps are then distributed to all affected cities, counties, and State agencies for their use in planning and controlling new or renewed construction. In general, construction within 50 feet of an active fault zone is prohibited. The project site is located within the Livermore 7.5-Minute Quadrangle Alquist-Priolo Earthquake Fault Zone. The Livermore 7.5-Minute Quadrangle covers approximately 60 square miles in eastern Alameda and Contra Costa Counties. The areas subject to seismic hazard within the quadrangle include parts of the cities of Livermore, Pleasanton, and Dublin.[39]

California Building Code

The State of California provides minimum standards for building design and construction through Title 24 of the California Code of Regulations (CCR). The California Building Code is located in Part 2 of Title 24. The California Building Code is updated every three years, and the most recent current version went into effect in January 2017. The California Building Code contains specific requirements for seismic safety, excavation, foundations, retaining walls, and site demolition. It also regulates grading activities, including drainage and erosion control.

Local

Alameda County General Plan

The Alameda County General Plan Safety Element, adopted in 2013, provides a policy framework to resolve development issues that arise from known or previously unknown hazards. The Safety Element is

[36] Originally titled the *Alquist-Priolo Special Studies Zones Act* until renamed in 1993, Public Resources Code Division 2, Chapter 7.5, Section 2621.

[37] California Geological Survey, Alquist-Priolo Earthquake Fault Zones, http://www.conservation.ca.gov/cgs/rghm/ap/Pages/main.aspx , accessed on May 4, 2017.

[38] Earthquake Fault Zones are regulatory zones around active faults. The zones vary in width, but average about ¼-mile wide. http://www.conservation.ca.gov/cgs/rghm/ap/Pages/main.aspx , accessed on May 4, 2017.

[39] California Geological Survey, Department of Conservation, Seismic Hazard Zone Report for the Livermore 7.5-Minute Quadrangle, Alameda County, California, http://gmw.conservation.ca.gov/SHP/EZRIM/Reports/SHZR/SHZR_114_Livermore.pdf, accessed on May 7, 2018.

organized into four chapters that include descriptive information, analysis and policies pertaining to geologic, seismic, flood, and fire hazards within the County. The focus of the Safety Element is to minimize human injury, loss of life, property damage, and economic and social dislocation due to natural and human-made hazards. The Safety Element includes the following policies under Goal 1 specific to geology and soils, and applicable to the proposed project.

- P2: Structures should be located at an adequate distance away from active fault traces, such that surface faulting is not an unreasonable hazard.
- P6: The County shall not approve new development in areas with potential for seismic and geologic hazards unless the County can determine that feasible measures will be implemented to reduce the potential risk to acceptable levels, based on site-specific analysis. The County shall review new development proposals in terms of the risk caused by seismic and geologic activity.
- P7: The County, prior to approving new development, shall evaluate the degree to which the development could result in loss of lives or property, both within the development and beyond its boundaries, in the event of a natural disaster.
- P11: All construction in unincorporated areas shall conform to the Alameda County Building Ordinance, which specifies requirements for the structural design of foundations and other building elements within seismic hazard areas.

East County Area Plan

The ECAP includes the following policies specific to geology and soils, and applicable to the proposed project.

- Policy 134: The County shall not approve new development in areas with potential natural hazards (flooding, geologic, wildland fire, or other environmental hazards) unless the County can determine that feasible measures will be implemented to reduce the potential risk to acceptable levels, based on site-specific analysis.
- Policy 135: The County, prior to approving new development, shall evaluate the degree to which the development could result in loss of lives or property, both within the development and beyond its boundaries, in the event of a natural disaster.
- Policy 309: The County shall not approve new development in areas with potential for seismic and geologic hazards unless the County can determine that feasible measures will be implemented to reduce the potential risk to acceptable levels, based on site-specific analysis. The County shall review new development proposals in terms of the risk caused by seismic and geologic activity.
- Policy 310: The County, prior to approving new development, shall evaluate the degree to which the development could result in loss of lives or property, both within the development and beyond its boundaries, in the event of a natural disaster.

Alameda County Municipal Code

The ACMC provisions apply to building structure and safety with regards to reducing impacts related to geologic hazards. Like similar jurisdictional authorities that issue building permits, the County is required

to enforce the California Building Standards Code (which includes the current CBC). The County has adopted all sections of the CBC Title 24, Part 2, in Chapter 15.08, Building Code.[40]

Existing Conditions

Regional Seismicity

Faults

The County has been subjected to numerous seismic events, originating both on faults within the County and in other parts of the region. Six major Bay Area earthquakes have occurred since 1800 that have affected the County, and at least two of the faults that produced them run through or into the County. Active faults within the County include the Hayward-Rodgers Creek fault system, Calaveras fault, and the Greenville-Las Positas fault. Potentially active faults within the County include the Verona fault, Williams fault, Midway fault, and the Mocho fault. The Working Group of California Earthquake Probabilities has determined that earthquakes of equally destructive forces are a certainty within the region. According to their findings, the Hayward-Rodgers Creek fault system is estimated to have a probability of 31% of producing an earthquake of a magnitude of 6.7 (M 6.7) or higher within the next 30 years, this probability is the highest of the Bay Area faults.[41] In the event of an M 6.8 earthquake on the Hayward-Rodgers Creek fault system, the seismic forecasts presented on ABAG's interactive GIS website (developed by a cooperative working group that included the USGS and the California Geological Survey (CGS) suggest that the project site is expected to experience "moderate" shaking.[42] However, no mapped earthquake faults run through or adjacent to the project site.[43] Thus, surface fault rupture is not considered a significant hazard within the project area.

Liquefaction

Liquefaction typically occurs in areas where moist, fine-grained, cohesionless sediment or fill materials are subjected to strong, seismically-induced ground shaking. Under certain circumstances, the ground shaking can temporarily transform an otherwise solid material to a fluid state. Liquefaction is a serious hazard because buildings in areas that experience liquefaction may subside and suffer major structural damage. Liquefaction is most often triggered by seismic shaking, but it can also be caused by improper grading, landslides, or other factors. In dry soils, seismic shaking may cause soil to consolidate rather than flow, a process known as densification. According to hazard maps published by the CGS, the project site lies within an area susceptible to moderate category of liquefaction.[44] Such areas require stronger shaking events to cause liquefaction. Geologic map units included in the Moderate category include latest

[40] Alameda County Municipal Code, Title 15 (Buildings and Construction), Chapter 15.08 (Building Code).

[41] Alameda County, Safety Element of the General Plan, https://www.acgov.org/cda/planning/generalplans/documents/SafetyElementAmendmentFinal.pdf, pages 3 to 7, accessed on May 7, 2018.

[42] Association of Bay Area Governments (ABAG), 2013, Interactive Hazards Map, Earthquake Shaking Scenarios., http://gis.abag.ca.gov/website/Hazards/?hlyr=calaverasSCN&co=6001, accessed on May 7, 2018.

[43] California Department of Conservation, DOC Maps: Geologic Hazards, https://maps.conservation.ca.gov/geologichazards/, accessed on May 7, 2018.

[44] California Geological Survey (CGS), Susceptibility Mao of the San Francisco Bay Area, https://geomaps.wr.usgs.gov/sfgeo/liquefaction/susceptibility.html, accessed on May 7, 2018.

Pleistocene and Holocene Bay and other estuarine mud, alluvial fan and levee deposits, and stream terrace deposits.

Landslides

Landslides are gravity-driven movements of earth materials that can include rock, soil, unconsolidated sediment, or combinations of these materials. The rate of landslide movement can vary considerably. Some landslides move rapidly, as in a soil or rock avalanche, while other landslides creep or move slowly for extended periods of time. The susceptibility of a given area to landslides depends on many variables, although the general characteristics that influence landslide hazards are well understood. Some of the more important factors that can increase the likelihood of landslides are: 1) loose slope materials such as unconsolidated soil and weakly indurated or highly fractured bedrock; 2) steep slopes; 3) the orientation of planar elements in earth materials such as bedding, foliation, joints, etc.; 4) increased moisture in soil or bedrock; 5) sparse vegetation; 6) eroded slopes or man-made cuts; and 7) strong seismic shaking. Due to the prevailing gentle topography and lack of steep slopes, earthquake-induced landslides are unlikely to occur at the project site or in the immediate vicinity.

Soils

The volume of expansive soils can change dramatically depending on moisture content. When wet, these soils can expand; conversely, when dry, they can contract or shrink. Sources of moisture that can trigger this shrink-swell phenomenon include seasonal rainfall, landscape irrigation, utility leakage, and/or perched groundwater. Expansive soils are typically very fine-grained with a high to very high percentage of clay, typically montmorillonite, smectite, or bentonite clay. The dominant soil type on the project site is Clear Lake clay. Clear Lake clay is poorly drained with a high runoff potential and a moderately low to moderately high capacity to transmit water.[45]

Discussion

a) *Would the proposed project expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving: i) Strong seismic ground shaking? ii) Seismic-related ground failure, including liquefaction? iii) Landslides, mudslides or other similar hazards?*

As discussed in Section 4.1, Introduction, the California Supreme Court in a December 2015 opinion (*CBIA v. BAAQMD*) confirmed that CEQA, with several specific exceptions, is concerned with the impacts of a project on the environment, and not the effects the existing environment may have on a project. Therefore, the introduction of structures to existing seismic hazards would not be considered an impact under CEQA. Nevertheless, the County currently has policies that address existing seismic hazards and new development. The impact analysis for this criterion, presented below, is followed by an assessment of the proposed project's mandatory compliance with relevant ECAP and Countywide policies.

[45] United States Department of Agriculture (USDA), Natural Resources Conservation Service, Web Soil Survey, http://websoilsurvey.nrcs.usda.gov/app, accessed on May 7, 2018.

i. The project site is located within the Livermore 7.5-Minute Quadrangle Alquist-Priolo Earthquake Fault Zone. However, the proposed project would not introduce residential development on the project site or expose people to strong seismic ground shaking. In addition, the project would not exacerbate this existing hazard pursuant to the CBIA v. BAAQMD case. Therefore, there would be *no impact.*

ii. An earthquake of moderate to high magnitude generated within the San Francisco Bay region could cause considerable ground shaking at the project site. The degree of shaking is dependent on the magnitude of the event, the distance to its zone of rupture, and local geological conditions. In the event of an M 6.8 earthquake on the Hayward-Rodgers Creek fault system, the project site is expected to experience "moderate" shaking.[46] Because the project site is located in a seismically active region, strong ground shaking would be expected during the lifetime of the proposed project. However, the project would not exacerbate this existing hazard pursuant to the CBIA v. BAAQMD case. Therefore, there would be *no impact*.

iii. The project site is located within an area susceptible to a moderate category of liquefaction. Accordingly, a strong seismic event could cause liquefaction on the project site.[47] However, the project would not exacerbate this existing hazard pursuant to the CBIA v. BAAQMD case. Therefore, there would be *no impact*.

iv. The topography of the project site is generally flat, and the proposed project would not result in an erosion or landslide hazard. Therefore, there would be *no impact*.

The proposed project would be required to implement measures to avoid significant hazards from site soils and geologic conditions in compliance with the County's ECAP and Countywide policies, and the ACMC (listed above), which are required for all projects in Alameda County. Compliance with these regulations is required of all projects in the County as conditions of project approval; therefore, there would be *no impact* with respect to geologically-related hazards.

b) *Would the proposed project result in substantial soil erosion or the loss of topsoil?*

Compliance with existing regulatory requirements such as the CBC, and implementation of erosion control best management practices during any significant construction on the project site would reduce the impacts associated with soil erosion or the loss of topsoil. Frequently-implemented soil stabilization best management practices include hydroseeding and short-term biodegradable erosion control blankets; linear sediment barriers such as silt fences, sandbag barriers, or straw bale barriers; fiber rolls, gravel bag berms, and check dams to break up slope length or flow; silt fences or other means of inlet protection at storm drain inlets; post-construction inspection of all drainage infrastructure for accumulated sediment; and clearing of accumulated sediment in such drainage structures. It should be noted that the proposed project would result in a minimal amount of grading on the project site. Therefore, adherence to existing

[46] Association of Bay Area Governments (ABAG), 2013, Interactive Hazards Map, Earthquake Shaking Scenarios., http://gis.abag.ca.gov/website/Hazards/?hlyr=calaverasSCN&co=6001, accessed on May 7, 2018.

[47] California Geological Survey (CGS), Susceptibility Mao of the San Francisco Bay Area, https://geomaps.wr.usgs.gov/sfgeo/liquefaction/susceptibility.html, accessed on May 7, 2018.

regulatory requirements would ensure that the impacts associated with substantial erosion or the loss of topsoil resulting from construction of the proposed project would be ***less than significant***.

c) *Would the proposed 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?*

As previously discussed, the potential for landslides is judged low in light of the essentially flat topography. Furthermore, existing developments in the immediate vicinity of the project site constructed on sites typified by similar topography and underlying geology, have not experienced landslides, lateral spreading, subsidence, liquefaction, or collapse.[48] Given this experience, the proposed project is unlikely to result in significant adverse impacts related to unstable geologic units or soil. Therefore, there would be ***no impact.***

d) *Would the proposed project be located on expansive soil, as defined in Section 1803.5.3 of the California Building Code, creating substantial risks to life or property?*

As described above, the dominant soil type on the project site is Clear Lake clay. In light of the on-site clay characteristics, the soil is considered to be potentially expansive and subject to expansion and contraction as a result of seasonal or human-made soil moisture. Expansive soils can undergo significant volume changes as a result of wetting or drying. This volume change can cause damage to foundations and pavement. The adverse effects of expansive soils can be avoided through proper subsoil preparation, drainage, and foundation design. In order to design a suitable foundation, expansive soils need to be recognized through appropriate sampling and soils testing. Such testing is generally part of a detailed, design-level geotechnical investigation performed prior to construction. Procedures employed in expansive soils testing are found in many codes and regulations. For example, Chapter 18, Sections 1803.5.3 and 1808.6 of the CBC set forth investigation and foundation requirements related to expansive soils. Adherence to these regulatory requirements would ensure that the impacts would be ***less than significant***.

e) *Would the proposed project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of wastewater?*

The proposed project would not require the construction or use of septic tanks or alternative wastewater disposal systems. Therefore, there would be ***no impact***

[48] California Geologic Survey, Landslide Inventory Map of the Livermore Quadrangle, Alameda and Contra Costa Counties, Florante G. Perez, ftp://ftp.consrv.ca.gov/pub/dmg/pubs/lsim/LSIM_Livermore.pdf, accessed on May 7, 2018.

VIII. Greenhouse Gas Emissions

Would the proposed project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Generate greenhouse gas (GHG) emissions, either directly or indirectly, that may have a significant impact on the environment?	❒	❒	■	❒
b) Conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	❒	❒	■	❒

Regulatory Framework

Federal

The United States Environmental Protection Agency (USEPA) announced on December 7, 2009, that GHG emissions threaten the public health and welfare of the American people and that greenhouse gas (GHG) emissions from on-road vehicles contribute to that threat. The USEPA's final findings respond to the 2007 United States Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings do not in and of themselves impose any emission reduction requirements, but allow the EPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation.[49] The USEPA's endangerment finding covers emissions of six key GHGs—CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and SF_6—that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world.

State

Assembly Bill 32 and Executive Order S-03-05

Executive Order S-03-05, signed June 1, 2005, set the following GHG reduction targets for the State: 2000 levels by 2010, 1990 levels by 2020, 80 percent below 1990 levels by 2050. AB 32, also known as the Global Warming Solutions Act, was passed in 2006 and follows the 2020 tier of emissions reduction targets established in Executive Order S-03-05 (i.e., 1990 levels by 2020). CARB is the state agency in charge of coordinating the GHG emissions reduction effort and establishing targets along the way. The 2008 Scoping Plan was adopted by CARB on December 11, 2008.

[49] United States Environmental Protection Agency (USEPA), 2009. EPA: Greenhouse Gases Threaten Public Health and the Environment, Science overwhelmingly shows greenhouse gas concentrations at unprecedented levels due to human activity, December, http://yosemite.epa.gov/opa/admpress.nsf/0/08D11A451131BCA585257685005BF252.

Senate Bill 32 and Executive Order B-03-05

Executive Order B-30-15, signed April 29, 2015, sets a goal of reducing GHG emissions within the State to 40 percent of 1990 levels by year 2030. In September 2016, Governor Brown signed SB 32, making the Executive Order goal for year 2030 into a statewide mandated legislative target. Executive Order B-30-15 and SB 32 required CARB to prepare another update to the Scoping Plan to address the 2030 target for the state. The update to the *2008 Scoping Plan* is the *2017 Climate Change Scoping Plan was approved on December 14, 2017*. The *2017 Scoping Plan* establishes a new emissions limit of 260 million metric tons of carbon dioxide equivalent ($MMTCO_2e$) for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030. The *2017 Climate Change Scoping Plan Update* includes the potential regulations and programs to achieve the 2030 target.

Senate Bill 375

SB 375, the Sustainable Communities and Climate Protection Act, was adopted in 2005 to connect the Scoping Plan's GHG emissions reductions targets for the transportation sector to local land use decisions that affect travel behavior. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 18 regions in California managed by a metropolitan planning organization (MPO). The Metropolitan Transportation Commission (MTC) is the MPO for the nine-county San Francisco Bay Area region. MTC's targets are a 7 percent per capita reduction in GHG emissions from 2005 by 2020, and 15 percent per capita reduction from 2005 levels by 2035.

Plan Bay Area 2040 is the Bay Area's Regional Transportation Plan/Sustainable Community Strategy. *Plan Bay Area 2040* is a limited and focused update to the 2013 *Plan Bay Area*, with updated planning assumptions that incorporate key economic, demographic, and financial trends from the last several years. *Plan Bay Area 2040* was adopted jointly by the Association of Bay Area Governments (ABAG) and MTC on July 26, 2017. To achieve MTC/ABAG's sustainable vision for the Bay Area, *Plan Bay Area* concentrates the majority of new population and employment growth in the region in transit-oriented, infill development PDAs within existing communities. The project site is within the Downtown "Frame" PDA.[50]*Plan Bay Area 2040* lays out a development scenario for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce GHG emissions from transportation (excluding goods movement) beyond the per capita reduction targets identified by the California Air Resources Board (CARB). *Plan Bay Area 2040* remains on track to meet a 16 percent per capita reduction of GHG emissions by 2035 and a 10 percent per capita reduction by 2020 from 2005 conditions.[51]

Regional

The 2017 Bay Area Clean Air Plan addresses air emissions in the San Francisco Bay Area Air Basin (SFBAAB). One of the key objectives in the 2017 Bay Area Clean Air Plan is climate protection, which

[50] Association of Bay Area Governments (ABAG), 2013. Priority Development Area (PDA) and Transit Priority Area (TPA) Map for CEQA Streamlining. https://www.planbayarea.org/pda-tpa-map, accessed on March 15, 2018.

[51] Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG), 2017. Plan Bay Area 2040, March.

includes emission control measures and performance objectives, consistent with the state's climate protection goals under AB 32 and SB 375, designed to reduce GHG emissions to 1990 levels by 2020 and 40 percent below 1990 levels by 2035, and to meet the State's 2030 GHG reduction target and 2050 GHG reduction goal.

Local

Alameda County General Plan

The Alameda County General Plan CAP, adopted in 2014, outlines a course of action to reduce community-wide GHG emissions generated within the unincorporated areas of Alameda County. Successful implementation of the CAP will reduce GHG emissions to 15 percent below 2005 levels by 2020 and set the County on a path toward reducing emissions to 80 percent below 1990 levels by 2050. The CAP defines a path to achieve the County's GHG reduction targets and outlines the detailed implementation of steps in the following six action areas: land use, transportation, energy, water, waste, and green infrastructure.

Existing Conditions

The project site is currently undeveloped and does not generate GHG emissions from mobile trips, energy sources, or area sources like consumer products, architectural coatings, and landscape equipment.

Greenhouse Gases and Climate Change

This section evaluates the potential for the proposed project to cumulatively contribute to greenhouse gas (GHG) emissions impacts. Because no single project is large enough individually to result in a measurable increase in global concentrations of GHG emissions, global warming impacts of a project are considered on a cumulative basis. This section is based on the methodology recommended by the BAAQMD for project-level review. GHG emissions modeling is included in Appendix B, Air Quality and Greenhouse Gas Emissions Data, of this IS/MND.

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHGs, into the atmosphere. The primary source of these GHG emissions is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHGs—water vapor, carbon dioxide (CO_2), methane (CH_4), and O_3—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHGs identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydro fluorocarbons, perfluorocarbons, and chlorofluorocarbons.[52,53] Black

[52] Water vapor (H_2O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant, but part of the feedback loop rather than a primary cause of change.

[53] Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the most strongly light-absorbing component of PM emitted from burning fuels. Reducing black carbon emissions globally can have immediate economic, climate, and public health benefits. California has been an international leader in reducing emissions of black carbon, with close to 95 percent control expected by 2020 due to existing programs that target reducing PM from diesel engines and

carbon emissions are not included in the GHG analysis because CARB does not include this pollutant in the State's AB 32 inventory and treats this short-lived climate pollutant separately. [54,55]

Discussion

a) *Would the proposed project generate greenhouse gas (GHG) emissions, either directly or indirectly, that may have a significant impact on the environment?*

Construction

The construction-related GHG emissions associated with the proposed project are shown in Table 5-5. BAAQMD does not have thresholds of significance for construction-related GHG emissions; however, BAAQMD has identified a threshold of 1,100 metric tons of carbon dioxide equivalent ($MTCO_2e$) which is used to evaluate construction emissions in order to identify whether or not construction-related GHG emissions would be substantial. The BAAQMD advises that lead agencies quantify and disclose GHG emissions that would occur during construction and make a determination on the significance of these construction-generated GHG emissions in relation to meeting AB 32 GHG emissions reduction goals. GHG emissions from construction activities are one-time, short-term emissions and therefore would not significantly contribute to long-term cumulative GHG emissions impacts of the proposed project. The net increase in emissions generated by the project was evaluated using the California Emissions Estimator Model (CalEEMod), Version 2016.3.2. As shown in Table 5-5, development of the proposed project would result in an increase of GHG emissions of 469 $MTCO_2e$ which would not exceed BAAQMD's de minimus bright line threshold of 1,100 $MTCO_2e$. Therefore, construction emissions would be ***less than significant***.

Operational Phase

Due to the nature of the proposed PV facility, its development and operation would generate minimal emissions of GHG from transportation sources, water use, wastewater generation, and solid waste generation. Project operation would only generate occasional trips by project maintenance workers to perform routine maintenance and repairs, and a water truck that would make deliveries to the project site approximately 206 times per year. In addition, the proposed project would be generating renewable energy, and thus would generate net negative energy use. Furthermore, electricity produced by the proposed PV facility would help lower the overall GHG emissions impact from powering communities served by the proposed project by creating a cleaner energy portfolio in the area.

burning activities. However, State and national GHG inventories do not yet include black carbon due to ongoing work resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet include black carbon.

[54] Particulate matter emissions, which include black carbon, are analyzed in Section 4.3(III), *Air Quality*. Black carbon emissions have sharply declined due to efforts to reduce on-road and off-road vehicle emissions, especially diesel particulate matter. The State's existing air quality policies will virtually eliminate black carbon emissions from on-road diesel engines within 10 years.

[55] California Air Resources Board (CARB), 2017. Short-Lived Climate Pollutant Reduction Strategy. https://www.arb.ca.gov/cc/shortlived/meetings/03142017/final_slcp_report.pdf, accessed on April 12, 2018.

TABLE 5-5 PROJECT GHG EMISSIONS – CONSTRUCTION PHASE

Category	GHG Emissions ($MTCO_2e$/Year)
2018	183
2019	285
Total Construction Emissions (Years 2017–2020)	**469**
30-Year Amortized Construction	16
BAAQMD Threshold	1,100 $MTCO_2e$/Year
Exceeds BAAQMD Threshold?	**No**

Note: Total emissions may not equal the sum of annual emissions shown due to rounding. New buildings would be constructed to the 2016 Building & Energy Efficiency Standards.
Source: California Emissions Estimator Model (CalEEMod) 2016.3.2.

A GHG emissions inventory was conducted for operation of the proposed project to determine the reduction in GHG emissions from offsets (i.e., production of renewable energy). GHG emissions were estimated by multiplying Pacific Gas & Electric's (PG&E) utility emissions factors as provided in CalEEMod by the electricity output of the proposed facility. As the tracking motors mounted on solar panels would not be powered by solar energy produced onsite, emissions associated with the electricity used for their operation were discounted from the total GHG savings. As shown in Table5-6 below, the project would reduce annual GHG emissions from electricity use by 3,205 $MTCO_2e$ per year. Overall, the proposed project would reduce greenhouse gases emitted into the atmosphere, and would further State climate change goals. Thus, the impact is ***less than significant***.

TABLE 5-6 PROJECT GHG EMISSIONS – CONSTRUCTION PHASE

Category	GHG Emissions ($MTCO_2e$/Year)
CO_2 – Solar Farm	-3,427
CO_2 – Tracking Motors	222
Net GHG Benefit	**-3,205**

Source: California Emissions Estimator Model (CalEEMod) 2016.3.2.

b) *Would the proposed project conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?*

Applicable plans adopted for the purpose of reducing GHG emissions include CARB's Scoping Plan, the MTC/ABAG Plan Bay Area, and the Alameda County General Plan Community CAP. A consistency analysis with these plans is presented below.

CARB's Scoping Plan

In accordance with AB 32, CARB developed the 2008 Scoping Plan to outline the State's strategy to achieve 1990 level emissions by year 2020. The CARB Scoping Plan is applicable to state agencies and is not directly applicable to cities/counties and individual projects. Nonetheless, the Scoping Plan has been the primary tool that is used to develop performance-based and efficiency-based CEQA criteria and GHG reduction targets for climate action planning efforts. The 2017 Climate Change Scoping Plan addresses the new interim GHG emissions target under Senate Bill 32, which requires the state to reduce its greenhouse gas emissions 40 percent below 1990 levels by 2030. In addition, the 2017 Climate Change Scoping Plan provides the strategies for the state to meet the 2030 GHG reduction target as established under SB 32.

Statewide strategies to reduce GHG emissions in the latest 2017 Climate Change Scoping Plan include implementing Senate Bill 350, which expands the Renewables Portfolio Standard to 50 percent by 2030 and doubles energy efficiency savings; expanding the Low Carbon Fuel Standard to 18 percent by 2030; implementing the Mobile Source Strategy to deploy zero-electric vehicle buses and trucks; implementation of the Sustainable Freight Action Plan; implementation of the Short-Lived Climate Pollutant Reduction Strategy, which reduces methane and hydrofluorocarbons 40 percent below 2013 levels by 2030 and black carbon emissions 50 percent below 2013 levels by 2030; continuing to implement Senate Bill 375; creation of a post-2020 Cap-and-Trade Program; and development of an Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink. Statewide GHG emissions reduction measures that are being implemented as a result of the Scoping Plan would reduce the proposed project's GHG emissions. The proposed project would be constructed to achieve the standards in effect at the time of development and would not conflict with statewide programs adopted for the purpose of reducing GHG emissions. While measures in the Scoping Plan apply to state agencies and not the proposed project, the project's construction GHG emissions would be reduced from compliance with statewide measures that have been adopted since AB 32 and SB 32 were adopted. Therefore the impact would be ***less than significant.***

MTC/ABAG's Plan Bay Area 2040

Plan Bay Area 2040 is the Bay Area's Regional Transportation Plan (RTP)/Sustainable Community Strategy (SCS).[56] To achieve MTC/ABAG's sustainable vision for the Bay Area, the Plan Bay Area land use concept plan for the region concentrates the majority of new population and employment growth in Priority Development Areas (PDAs). PDAs are transit-oriented, infill development opportunity areas within existing communities. An overarching goal of the regional plan is to concentrate development in areas where there are existing services and infrastructure rather than allocate new growth to outlying areas where substantial transportation investments would be necessary to achieve the per capita passenger vehicle, vehicle miles traveled, and associated GHG emissions reductions. The proposed project is not within a priority development area,[57] but would be consistent with the GHG reduction goals of Plan Bay Area 2040. In addition, the project is not a suitable candidate for infill because of the nature of the proposed project

[56] Association of Bay Area Governments (ABAG)/Metropolitan Transportation Commission (MTC), 2017, July. Plan Bay Area 2040. http://2040.planbayarea.org/, accessed on April 11, 2018.

[57] Association of Bay Area Governments (ABAG), 2013. Priority Development Showcase. http://gis.abag.ca.gov/website/PDAShowcase/, accessed on April 11, 2018.

as an energy generation facility requiring large amounts of land. Additionally, the proposed project is not a trip generating land use and would result in a net GHG benefit by providing a renewable source of energy. Therefore, the proposed project would not conflict with statewide programs adopted for the purpose of reducing GHG emissions and impacts would be *less than significant*.

Alameda County Community Climate Action Plan

The Alameda County General Plan Community CAP was approved and adopted by the Alameda County Board of Supervisors on February 4, 2014.[58] The CAP outlines a course of action to reduce community-wide GHG emissions generated within the unincorporated areas of Alameda County. Successful implementation of the CAP will reduce GHG emissions to 15 percent below 2005 levels by 2020 and set the County on a path toward reducing emissions to 80 percent below 1990 levels by 2050. The CAP defines a path to achieve the County's GHG reduction targets and outlines the detailed implementation of steps in the following six action areas: land use, transportation, energy, water, waste, and green infrastructure.

Development of the solar photovoltaic facility would further the goals of the CAP's Building Energy Action Area, which aims to reduce the carbon intensity of energy provided to buildings within the County. Within the Building Energy Action Area, renewable energy is identified as a key strategy to reduce the use of fossil fuel-based energy and achieve the County's GHG reduction target. In addition to the GHG benefits provided by the project's solar electricity generation, the project itself will be water efficient in landscaping, utilizing rainwater harvesting and other water-efficient irrigation measures in line with the CAP's Water Use Action Area. Overall, the proposed project would provide a net GHG benefit in line with the goals of the CAP. Therefore, the impact would be *less than significant*.

IX. Hazards and Hazardous Materials

Would the proposed project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?	❒	❒	■	❒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	❒	❒	■	❒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school?	❒	❒	❒	■

[58] Alameda County, 2014, February. Community Climate Action Plan. http://www.acgov.org/cda/planning/generalplans/documents/110603_Alameda_CCAP_Final.pdf, accessed on April 11, 2018.

Would the proposed project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
d) Be located on a site which is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, 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 two 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) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	❒	❒	❒	■
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	❒	❒	❒	■

Regulatory Setting

Federal

The storage, use, generation, transport, and disposal of hazardous materials and waste are highly regulated under federal and state laws. Key federal regulations and policies related to development include the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, and the Resource Conservation and Recovery Act (RCRA). Laws and regulations established by the USEPA are enforced in Alameda County by the California Environmental Protection Agency (discussed below).

State

California Environmental Protection Agency

The California Environmental Protection Agency was created in 1991 by Executive Order W-5-91. Several State regulatory boards, departments, and offices were placed under the Agency's umbrella to create a cabinet-level voice for the protection of human health and the environment and to assure the coordinated deployment of State resources. The California Environmental Protection Agency also oversees the unified hazardous waste and hazardous materials management regulatory program (Unified Program).

California Department of Toxic Substances Control

The California DTSC, which is a department of California Environmental Protection Agency, is authorized to carry out the federal hazardous waste program in California to protect people from exposure to hazardous wastes. The department regulates hazardous waste, cleans up existing contamination, and looks for ways to control and reduce the hazardous waste produced in California. Permitting, inspection, compliance, and corrective action programs ensure that people who manage hazardous waste follow federal and State requirements and other laws that affect hazardous waste specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

California Building Code

The State of California provides minimum standards for building design and construction through Title 24 of the CCR. The California Building Code is located in Part 2 of Title 24 and is adopted by reference in Chapter 15.08, Building Code, of the ACMC. The California Building Code is updated every three years. Commercial and residential buildings are plan-checked by County building officials for compliance with the typical fire safety requirements of the California Building Code.

California Fire Code

ACMC Chapter 6.04 adopts the California Fire Code by reference. The California Fire Code adopts by reference the International Fire Code (IFC) with necessary State amendments. Updated every three years, the California Fire Code includes provisions and standards for emergency planning and preparedness, fire service features, fire protection systems, hazardous materials, fire flow requirements, and fire hydrant locations and distribution. Typical fire safety requirements include: installation of sprinklers in all high-rise buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildlife hazard areas.

California Emergency Management Agency

The California Emergency Management Agency (CalEMA) was established as part of the Governor's Office on January 1, 2009—created by AB 38 (Nava), which merged the duties, powers, purposes, and responsibilities of the former Governor's Office of Emergency Services with those of the Governor's Office of Homeland Security. The California Emergency Management Agency is responsible for the coordination of overall State agency response to major disasters in support of local government. The agency is responsible for assuring the State's readiness to respond to and recover from all hazards—natural, human-made, emergencies, and disasters—and for assisting local governments in their emergency preparedness, response, recovery, and hazard mitigation efforts.

California Department of Forestry and Fire Protection

The CAL FIRE has mapped fire threat potential throughout California.[59] CAL FIRE ranks fire threat based on the availability of fuel and the likelihood of an area burning (based on topography, fire history, and climate). The rankings include no fire threat, moderate, high, and very high fire threat. Additionally, CAL FIRE produced the *2012 Strategic Fire Plan for California*, which contains goals, objectives, and policies to prepare for and mitigate for the effects of fire on California's natural and built environments.[60]

Regional

San Francisco Bay Regional Water Quality Control Board

The Porter-Cologne established the State Water Resource Board (SWRCB) and the San Francisco Bay RWQCB, which regulates water quality in the project area. The San Francisco Bay RWQCB has the authority to require groundwater investigations when the quality of groundwater or surface waters of the State is threatened, and to require remediation actions, if necessary.

Bay Area Air Quality Management District

The BAAQMD has primary responsibility for control of air pollution from sources other than motor vehicles and consumer products, which are the responsibility of California Environmental Protection Agency and CARB. The BAAQMD is responsible for preparing attainment plans for non-attainment criteria pollutants, control of stationary air pollutant sources, and the issuance of permits for demolition and renovation activities affecting asbestos containing materials (District Regulation 11, Rule 2) and lead (District Regulation 11, Rule 1).

Local

Alameda County General Plan

The Safety Element includes the following policies under **Goal 1** specific to hazards and hazardous materials, and applicable to the proposed project.

- **P1**: Uses involving the manufacture, use or storage of highly flammable (or toxic) materials and highly water reactive materials should be located at an adequate distance from other uses and should be regulated to minimize the risk of on-site and off-site personal injury and property damage. The transport of highly flammable materials by rail, truck, or pipeline should be regulated and monitored to minimize risk to adjoining uses.
- **P4:** New or expanding businesses shall be required to demonstrate compliance with the hierarchy of waste management strategies listed in Policy 1 (P1) of this Goal as a condition of receiving land use and business permits.

[59] California Department of Forestry and Fire Protection (CAL FIRE), Fire Hazard Severity Zone Development, http://www.fire.ca.gov/fire_prevention/fhsz_maps_alameda, accessed on May 7, 2018.

[60] California Department of Forestry and Fire Protection (CAL FIRE), *2012 Strategic Fire Plan for California,* http://calfire.ca.gov/about/about_StrategicPlan.php, accessed on May 7, 2018.

- P8: Developers shall be required to conduct the necessary level of environmental investigation to ensure that soil, groundwater and buildings affected by hazardous material releases from prior land uses and lead or asbestos in building materials will not have a negative impact on the natural environment or health and safety of future property owners or users. This shall occur as a pre-condition for receiving building permits or planning approvals for development on historically commercial or industrial parcels.
- P9: The safe transport of hazardous materials through the unincorporated areas shall be promoted by implementing the following measures:
  - Maintain formally-designated hazardous material carrier routes to direct hazardous materials away from populated and other sensitive areas.
  - Maintain formally-designated hazardous material carrier routes to direct hazardous materials away from populated and other sensitive areas.
  - Maintain formally-designated hazardous material carrier routes to direct hazardous materials away from populated and other sensitive areas.
  - Encourage businesses to ship hazardous materials by rail.

Alameda County Department of Environmental Health

The Alameda County Department of Environmental Health (ACDEH) Certified Unified Program Agency (CUPA) is the administrative agency that coordinates and enforces numerous local, state, and federal hazardous materials management and environmental protection programs in the county. As the local CUPA, the ACDEH administers the following programs:

- Hazardous Materials Business Plan Program
- Hazardous Waste Generator Program
- Underground Storage Tank Program
- California Accidental Release Program
- Tiered Permitting Program
- Aboveground Storage Tank Program

Alameda County Emergency Operations Plan

An Emergency Operations Plan (EOP) is required for each local government in California. The guidelines for the plan come from the Federal Emergency Management Agency (FEMA), and are modified by the State Office of Emergency Services (OES) for California needs and issues. The purpose of the plan is to provide a legal framework for the management of emergencies and guidance for the conduct of business in the Emergency Operations Center (EOC). The *Alameda County Emergency Operations Plan* was adopted by the Board of Supervisors on December 8, 2012.[61]

[61] County of Alameda, Alameda County Emergency Operations Plan, December 2012, https://www.acgov.org/ready/documents/EmergencyOperationsPlan.pdf, accessed on May 7, 2018.

Existing Conditions

Hazardous Materials Sites

The term "hazardous material" is defined in different ways for different regulatory programs. The California Health and Safety Code Section 25501 definition of a hazardous material is: "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." The DTSC divides hazardous material sites into three categories: clean-up sites, permitted sites, and other sites. Sites listed within these three categories can be at various stages of evaluation or clean up, from the beginning to the end of the process. California Government Code Section 65962.5 requires the California Environmental Protection Agency to compile, maintain, and update specified lists of hazardous material release sites. The CEQA Statute (PRC Section 21092.6) requires the Lead Agency to consult the lists compiled pursuant to Government Code Section 65962.5 to determine whether a proposed project and any alternatives are identified as contaminated sites.

The required lists of hazardous material release sites are commonly referred to as the "Cortese List" after the legislator who authored the legislation. Those requesting a copy of the Cortese List are referred directly to the appropriate information resources contained on internet websites hosted by the boards or departments referenced in the statute, including DTSC's online EnviroStor database and the SWRCB's online GeoTracker database. These two databases include hazardous material release sites, along with other categories of sites or facilities were reviewed to identify known or suspected sources of contamination. A search of DTSC's EnviroStor and SWRCBs GeoTracker database on May 9, 2018 revealed that there are no listings within the project site and no open cases in close proximity to the project site.[62,63]

Schools

The project site is not located within 0.25 miles from a school. The closest school, Andrew N. Christensen Middle School, is located approximately 3 mile to the southeast of the site.

Aircraft Hazards

The project site is not located within 2 miles of a public airport or public use airport. The closest public airport to the project site is Livermore Municipal Airport, located 4.5 miles southwest of the project site in the City of Livermore. The closest private aircraft facility is the PG&E Livermore Training Center Heliport located approximately 4 miles southeast of the proposed project site.[64] The ValleyCare Medical Center Heliport is located 7 miles southwest of the project site in the City of Pleasanton, and Byron Airport, a public-use airport, is located at 550 Eagle Court in Byron, approximately 9 miles northeast of the project site.[65]

[62] State Water Resources Control Board, GeoTracker, http://www.geotracker.waterboards.ca.gov, accessed on May 8, 2018.
[63] Department of Toxic Substances Control, EnviroStor, http://www.envirostor.dtsc.ca.gov, accessed on May 8, 2018.
[64] Airnav.com, accessed March 29, 2018.
[65] AirNav, Airport information, http://www.airnav.com/airports/us/CA, accessed on February 23, 2018.

Wildland Fires

The severity of the wildfire hazard is determined by the relationship between three factors: fuel classification, topography, and critical fire weather frequency. The project site is not located within an area of moderate, high, or very high Fire Hazard Severity for the Local Responsibility Area,[66] nor does it contain any areas of moderate, high, or very high Fire Hazard Severity for the State Responsibility Area.[67]

Discussion

a) *Would the proposed project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

The proposed PV facility would not involve the routine transport of hazardous waste, thus, no impacts to the public or the environment would occur. Potential impacts during construction of the proposed project could include potential spills associated with the use of fuels and lubricants in construction equipment. These potential impacts would be short-term in nature and would be reduced to less-than-significant levels through compliance with applicable local, State, and federal regulations, as well as the use of standard equipment operating practices by experienced, trained personnel. Additionally, during the operation phase of the proposed project, common cleaning substances, PV facility maintenance products, and similar items could be used on the project site. These potentially hazardous materials, however, would not be of a type or occur in sufficient quantities to pose a significant hazard to public health and safety or the environment. Compliance with the applicable laws, regulations, and conditions of approval, would minimize hazards associated with the routine transport, use, or disposal of hazardous materials to the maximum extent practicable. Therefore, impacts would be ***less than significant***.

b) *Would the proposed project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*

As discussed in Criterion (a) of this section, the operation phase of the proposed project could involve the use of common cleaning substances and PV facility maintenance products; however, these potentially hazardous substances would not be of a type or occur in sufficient quantities on-site to pose a significant hazard to public health and safety or the environment. The use of these materials would be subject to existing federal and State regulations. Compliance with these regulations would ensure that the risk of accidents and spills are minimized to the maximum extent practicable. Therefore, impacts related to accidental release of hazardous materials would be ***less than significant***.

[66] California Department of Forestry and Fire Protection (CDFFP), 2008, http://frap.fire.ca.gov/webdata/maps/alameda/fhszl_map.1.pdf, accessed on May 8, 2018.

[67] California Department of Forestry and Fire Protection(CDFFP), 2007, http://frap.fire.ca.gov/webdata/maps/alameda/fhszs_map.1.pdf, accessed on May 8, 2018.

c) *Would the proposed project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school?*

The project site is not located within 0.25 miles of a school. The closest school, Andrew N. Christensen Middle School, is located approximately 3 mile to the southeast of the site. Therefore, there would be ***no impact.***

d) *Would the proposed project be located on a site which is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment?*

Based on information gathered from a review of the applicable regulatory databases, including EnviroStor and the GeoTracker, described above, to identify known or suspected sources of contamination, it was determined that the project site does not contain any known hazardous materials spills or storage sites. Therefore, there would be ***no impact.***

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?*

The project site is not located within 2 miles of a public airport or public use airport. The closest airport to the project site is Livermore Municipal Airport, located 4.5 miles southwest of the project site in the City of Livermore.[68] Therefore, there would be ***no impact***.

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?*

Given the distance from any airports, the proposed project would not create any safety hazards related to private airstrips. Therefore, there would be ***no impact***.

g) *Would the proposed project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

The proposed project would not involve any material changes to public streets, roads, or evacuation infrastructure and it would not include the construction of any features that might impair the implementation of any relevant emergency operation plan. Furthermore, the proposed project would not change existing emergency response and rescue access routes within Alameda County. Therefore, there would be ***no impact***.

[68] AirNav, Airport information, http://www.airnav.com/airports/us/CA, accessed on February 23, 2018.

h) *Would the proposed project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?*

The project site is not located within an area of moderate, high, or very high Fire Hazard Severity for the Local Responsibility Area, nor does it contain any areas of moderate, high, or very high Fire Hazard Severity for the State Responsibility Area. Therefore, there would be *no impact*.

X. Hydrology and Water Quality

Would the proposed project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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 significant lowering of the local groundwater table level?	❒	❒	■	❒
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?	❒	❒	■	❒
f) Otherwise substantially degrade water quality?	❒	❒	■	❒
g) 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?	❒	❒	❒	■
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	❒	❒	❒	■
i) 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?	❒	❒	❒	■
j) Inundation by seiche, tsunami, or mudflow?	❒	❒	❒	■

Regulatory Framework

Federal

Clean Water Act

The Clean Water Act (CWA) of 1977, as administered by the USEPA, seeks to restore and maintain the chemical, physical, and biological integrity of the nation's waters. The CWA employs a variety of regulatory and non-regulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. The CWA authorizes the USEPA to implement water-quality regulations. The National Pollutant Discharge Elimination System (NPDES) permit program under Section 402(p) of the CWA controls water pollution by regulating stormwater discharges into the waters of the United States. California has an approved State NPDES program. The USEPA has delegated authority for water permitting to the SWRCB and the San Francisco Bay Regional Water Quality Control Board (RWQCB).

Section 303(d) of the CWA requires that each state identify water bodies or segments of water bodies that are "impaired" (i.e., not meeting one or more of the water-quality standards established by the state). These waters are identified in the Section 303(d) list as waters that are polluted and need further attention to support their beneficial uses. Once the water body or segment is listed, the state is required to establish Total Maximum Daily Load (TMDL) for the pollutant causing the conditions of impairment. TMDL is the maximum amount of a pollutant that a water body can receive and still meet water-quality standards. Typically, TMDL is the sum of the allowable loads of a single pollutant from all contributing point and non- point sources. The intent of the 303(d) list is to identify water bodies that require future development of a TMDL to maintain water quality. In accordance with Section 303(d), the RWQCB has identified impaired water bodies within its jurisdiction, and the pollutants or stressors responsible for impairing the water quality.

National Pollutant Discharge Elimination System

The CWA-established NPDES permit program regulates municipal and industrial discharges to surface waters of the United States from their municipal separate storm sewer systems (MS4s). Under the NPDES program, all facilities that discharge pollutants into waters of the United States are required to obtain a NPDES permit. Requirements for stormwater discharges are also regulated under this program.

Alameda County lies within the jurisdiction of San Francisco Bay RWQCB (Region 2) and is subject to the waste discharge requirements of the Municipal Regional Stormwater Permit (MRP; Order No. R2-2015-0049) and NPDES Permit No. CAS612008, which was issued on November 19, 2015 and became effective as of January 1, 2016. The permit governs a variety of activities in the Alameda County such as industrial and commercial businesses, new and redevelopment projects, construction sites, storm drain operation and maintenance, creek monitoring, pesticide applications, and illegal dumping of water and other pollution in the County's storm drain.

National Flood Insurance Program

The National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 mandate the Federal Emergency Management Agency (FEMA) to evaluate flood hazards. FEMA provides Flood Insurance Rate Maps (FIRMs) for local and regional planners to promote sound land use and floodplain development and identify potential flood areas based on current conditions. To delineate a FIRM, FEMA conducts engineering studies called Flood Insurance Studies (FISs). Using information gathered in these studies, FEMA engineers and cartographers delineate Special Flood Hazard Areas on FIRMs. The project site is identified in FIRM No. 06001C0332G, effective on August 3, 2008. According to the FIRM, the project site is located outside of the 100-year floodplain in an area of minimal flood hazard.[69]

State Regulations

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Act is the basic water-quality control law for California. Under this Act, the SWRCB has ultimate control over State water rights and water-quality policy. In California, the California EPA has delegated authority to issue NPDES permits to the SWRCB. The SWRCB, through its nine RWQCBs, carries out the regulation, protection, and administration of water quality in each region. Each regional board is required to adopt a Water Quality Control Plan, or Basin Plan, that recognizes and reflects the regional differences in existing water quality, the beneficial uses of the region's ground and surface water, and local water-quality conditions and problems. The county is within the San Francisco Bay Basin[70] and is under the jurisdiction of the San Francisco Bay RWQCB (Region 2) which monitors surface water quality through implementation of the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) and designates beneficial uses for surface water bodies and groundwater within the San Francisco Bay region. The Basin Plan for the San Francisco Basin was last updated on May 4, 2017 and will continue to be updated as deemed necessary to maintain pace with technological, hydrological, political, and physical changes in the region.[71] This Basin Plan describes the water quality that must be maintained to support the designated beneficial uses and provides programs, projects, and other actions necessary to achieve the standards established in the Basin Plan. The Basin Plan also contains water quality criteria for groundwater.

Statewide General *Construction* Permit

Construction projects of one acre or more are regulated under the General Construction Permit (GCP), Order No. 2012-0006-DWQ, issued by the SWRCB. Under the terms of the permit, applicants must file Permit Registration Documents (PRDs) with the SWRCB prior to the start of construction. The PRDs

[69] Federal Emergency Management Agency, Flood Insurance Rate Maps, Alameda County, https://msc.fema.gov/portal/search?AddressQuery=4871%20North%20Livermore%20Avenue%2C%20Livermore%20CA#searchresultsanchor, accessed on May 7, 2018.

[70] California Regional Water Quality Control Board, 2017. San Francisco Basin (Region 2), Water Quality Control Plan (Basin Plan), https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/planningtmdls/basinplan/web/fig/fig_1-01.pdf, accessed on May 7, 2018.

[71] California Regional Water Quality Control Board, 2017. San Francisco Basin (Region 2), Water Quality Control Plan (Basin Plan), May 2017, https://www.waterboards.ca.gov/sanfranciscobay/basin_planning.html, accessed on May 7, 2018.

include a Notice of Intent (NOI), risk assessment, site map, Storm Water Pollution Prevention Plan (SWPPP), annual fee, and a signed certification statement. The PRDs are submitted electronically to the SWRCB via the Stormwater Multiple Application and Report Tracking System (SMARTS) website.

The SWPPP must demonstrate conformance with applicable Best Management Practices (BMPs), including a site map that shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project location. The SWPPP must list BMPs that would be implemented to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources. Additionally, the SWPPP must contain a visual monitoring program, a chemical monitoring program for nonvisible pollutants if there is a failure of the BMPs, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Some sites may require implementation of a Rain Event Action Plan (REAP). The GCP also requires applicants to comply with post-construction runoff reduction requirements. Since the proposed project would disturb more than one acre, it would be subject to these requirements.

Local

Alameda County General Plan

The Safety Element includes the following policies under **Goal 3** specific to hydrology and water quality, and applicable to the proposed project.

- **P2**: Surface runoff from new development shall be controlled by on-site measures including, but not limited to structural controls and restrictions regarding changes in topography, removal of vegetation, creation of impervious surfaces, and periods of construction such that the need for off-site flood and drainage control improvements is minimized and such that runoff from development will not result in downstream flood hazards.
- **P9:** Development shall comply with applicable NPDES requirements.
- **P12:** The County shall require new development to pay their fair share of storm drainage and flood control improvements.
- **P13:** The County shall regulate new development on a case-by-case basis to ensure that project storm drainage facilities shall be designed so that peak rate flow of storm water from new development will not exceed the rate of runoff from the site in its undeveloped state.

East County Area Plan

The ECAP includes the following policies specific to hydrology and water quality, and applicable to the proposed project.

- **Policy 306**: The County shall protect surface and groundwater resources by:
  - preserving areas with prime percolation capability and minimizing placement of potential sources of pollution in such areas;

- minimizing sedimentation and erosion through control of grading, quarrying, cutting trees, removal of vegetation, placement of roads and bridges, use of off-road vehicles, and animal-related disturbance of the soil;
- not allowing the development of septic systems, automobile dismantlers, waste disposal facilities, industries utilizing toxic chemicals, and other potentially polluting substances in Creekside, reservoir, or high groundwater table areas when polluting substances could come in contact with flood waters, permanently or seasonally high groundwaters, flowing stream or creek waters, or reservoir waters; and,
- avoiding establishment of excessive concentrations of septic systems over large land areas.

Alameda County Municipal Code

ACMC Chapter 15.36, Grading Erosion and Sediment, includes regulations for work on private property within the unincorporated area of the county in order to safeguard life, limb, health, property, and public welfare; to protect creeks, watercourses, and other drainage facilities from illicit discharges of surface runoff generated in or draining through the permit work area; and to ensure that the construction and eventual use of a graded site is in accordance with the county general plan and all applicable county ordinances.[72]

Alameda County Flood Control & Water Conservation District

The Alameda County Flood Control & Water Conservation District provides flood protection for Alameda County residents and businesses. The Flood Control & Water Conservation District plans, designs, constructs, and maintains flood control projects such as natural creeks, channels, levees, pump stations, dams, and reservoirs. In 2016, the Flood Control & Water Conservation District updated the Hydrology & Hydraulics Manual which serves as a guide for minimum design requirements and provides a hydrologic model for all of Alameda County.[73] The Flood Control & Water Conservation District is also charged with administering the Clean Water Program for unincorporated areas of Alameda County, the 14 cities of Alameda County, the Alameda County Flood Control District, and the Zone 7 Water Agency. The District provides administrative and contracting services for the Alameda Countywide Clean Water Program to help comply with federal and state requirements to improve water quality and better manage urban stormwater and runoff.[74]

[72] Alameda County Municipal Code, Title 15 (Building and Construction), Chapter 15.36 (Grading Erosion and Sediment).

[73] Alameda County, Flood Control & Water Conservation District, 2016, Hydrology & Hydraulics Manual, file:///C:/Users/cgarcia/Downloads/ACFCD_HH_Manual_Rev_032618.pdf, accessed on May 7, 2018.

[74] Alameda County, Flood Control & Water Conservation District, Clean Water Program, http://www.acfloodcontrol.org/projects-and-programs/clean-water-program/, accessed on May 7, 2018.

Existing Conditions

Surface Water

The project site lies within the Arroyo Las Positas Watershed which encompasses 81 square miles in the northeastern corner of the county. Arroyo Las Positas is considered the driest subwatershed of the Alameda Creek Watershed and is comprised of many small streams that spread out and sink into the ground where they exit their canyons and begin to cross the valley floor.[75]

Groundwater

According to the California Division of Water Resources (DWR), the project site is located within the Livermore Valley groundwater basin.[76] The groundwater basin covers 109 square miles from the Pleasanton Ridge east to the Altamont Hills and from the Livermore Upland north to the Orinda Upland. Surface drainage features include Arroyo Valle, Arroyo Mocho, and Arroyo Las Positas as principal streams, with Alamo Creek, South San Ramon Creek, and Tassajara Creek as minor streams. All streams converge on the west side of the basin to form Arroyo de la Laguna, which flows south and joins Alameda Creek in Sunol Valley. The total storage capacity of the groundwater basin is estimated at about 500,000 acre-feet. Under average hydrologic conditions, the groundwater budget is essentially in balance. Groundwater budget inflow components include natural recharge of 10,000 acre-feet, artificial recharge of 10,900 acre-feet, applied water recharge of 1,740 acre-feet, and subsurface inflow of 1,000 acre-feet. Groundwater budget outflow components include urban extraction of 10,290 acre-feet, agricultural extraction of 190 acre-feet, other extraction and evaporation associated with gravel mining operations of 12,620 acre-feet, and subsurface outflow of 540 acre-feet.[77]

Water chemistry is highly varied around the basin. Generally, the northern extent of the basin is dominated by a sodium deposits and much of the water underlying the western part of the basin near Pleasanton is characterized by magnesium-sodium deposits. The area along the eastern portion of the basin beneath Livermore is characterized by magnesium deposits. Total dissolved solids concentrations range from 300 milligrams per liter (mg/L) to 550 mg/L with an average of 450 mg/L based on analyses from 27 municipal wells.

Flooding

FEMA prepares maps of the 100-year floodplains for communities in the United States. For areas within the 100-year floodplain, there is a one percent chance of flooding for any given year and these areas are considered to be at high-risk. Maps are also available for 500-year floods, which mean that in any given year, the risk of flooding in the designated area is 0.2 percent. Areas within the 100-year floodplain that

[75] Alameda County Flood Control and Water Conservation District, Explore Watersheds, http://www.acfloodcontrol.org/resources/explore-watersheds/, accessed on May 7, 2018.

[76] California Division of Water Resources, Groundwater Basin Boundary Assessment Tool, https://gis.water.ca.gov/app/bbat/, accessed on May 6, 2018.

[77] California Division of Water Resources, California's Groundwater Bulletin 118, San Francisco Hydrologic Region, Livermore Valley Groundwater Basin, https://www.water.ca.gov/LegacyFiles/groundwater/bulletin118/basindescriptions/2-10.pdf, accessed on May 6, 2018.

are financed by federally backed mortgages are subject to mandatory federal insurance requirements and building standards to reduce flood damage. According to FEMA, the project site is outside of the 100-year floodplain.[78]

Dam inundation

Dam failure is the uncontrolled release of impounded water behind a dam. Flooding, earthquakes, blockages, landslides, lack of maintenance, improper operation, poor construction, vandalism, and terrorism can all cause a dam to fail.[79] The project site is not located within a dam inundation zone.[80]

Discussion

a) *, f) Would the proposed project violate any water quality standards or waste discharge requirements or substantially degrade water quality?*

Clearing, grading, excavation, and construction activities have the potential to impact water quality through soil erosion and increased silt and debris discharged into runoff. Additionally, the use of construction materials such as fuels, solvents, and paints may present a risk to surface water quality. Temporary storage of construction materials and equipment in work areas or staging areas could create the potential for a release of hazardous materials, trash, or sediment to the storm drain system.

As discussed in Chapter 4, Project Description, the proposed project would disturb more than one acre of soil on the project site. Therefore, the proposed project would be required to comply with the NPDES General Construction Permit (GCP). The GCP requires the submittal of Permit Registration Documents (PRDs) to the State Water Resource Board (SWRCB) prior to the start of construction. The PRDs include a Notice of Intent (NOI), risk assessment, site map, annual fee, signed certification statement, SWPPP, and post-construction water balance calculations. The SWPPP describes the incorporation of best management practices to control sedimentation, erosion, and the potential for hazardous materials contamination of runoff during construction. New requirements by the SWRCB also require the SWPPP to include post-construction treatment measures aimed at minimizing stormwater runoff.

All development projects within Alameda County must also comply with the ACMC Chapter 15.36, Grading Erosion and Sediment, which requires projects within the County to ensure that the construction and eventual use of a graded site is in accordance with the county general plan and all applicable county ordinances.[81] In addition, upon project completion, rainwater and water used for cleaning the solar arrays would run-off onsite into the permeable ground beneath the panels and the landscaped earth berm along the perimeter of the project site. Therefore, the proposed project would not contribute to an exceedance of stormwater runoff off-site. Furthermore, during project operation, the project would not be a point-

[78] Federal Emergency Management Agency, Flood Insurance Rate Maps, Alameda County, https://msc.fema.gov/portal/search?AddressQuery=4871%20North%20Livermore%20Avenue%2C%20Livermore%20CA#searchresultsanchor, accessed on May 7, 2018.

[79] California Office of Emergency Services, 2013, *California Multi-Hazard Mitigation Plan.*

[80] Alameda County, Safety Element of the General Plan, https://www.acgov.org/cda/planning/generalplans/documents/SafetyElementAmendmentFinal.pdf, pages 42 to 44.

[81] Alameda County Municipal Code, Title 15 (Building and Construction), Chapter 15.36 (Grading Erosion and Sediment).

source generator of water pollutants and would therefore not violate any water quality standard. Accordingly, the proposed project would not violate any water quality standards or waste discharge requirements and impacts would be ***less than significant***.

b) *Would the proposed project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a significant lowering of the local groundwater table level?*

The proposed project would introduce 1,370 square feet (0.031 acres) of impervious surface on the project site which represents approximately 0.04 percent of the 71.64-acre site. Accordingly, the vast majority of the project site would remain permeable and available for recharge in the groundwater basin. Water for project operation and irrigation would be delivered to the project site via a 5,000 gallon water truck; no connections to municipal water or groundwater wells are proposed. The water used during construction and water operation would be replenished from a fire hydrant located approximately 2.8 miles southeast of the project site at the corner of Ames Street and Martingale Lane in the County of Alameda. Therefore, the proposed project would not deplete groundwater supplies or interfere substantially with groundwater recharge and impacts would be ***less than significant***.

c) *Would the proposed project 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?*

The project site does not contain any waterways and therefore, implementation of the proposed project would not alter the course of a stream or river. However, the proposed project would require grading or soil exposure during construction. If not controlled, the transport of these materials into local waterways could temporarily increase suspended sediment concentrations. To minimize this impact, the proposed project would be required to comply with all of the requirements of the State GCP, including preparation of PRDs and submittal of a SWPPP to the SWRCB prior to the start of construction activities. In addition, ACMC Chapter 15.36, Grading Erosion and Sediment, requires projects within the County to ensure that the construction and eventual use of a graded site is in accordance with the county general plan and all applicable county ordinances.[82] Mandatory compliance with State and County regulations would ensure that impacts from erosion and siltation would be ***less than significant.***

d) *– e) Would the proposed project 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 or create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems?*

As described under Criterion (b) of this section, the proposed project would not substantially increase the amount of impervious surface area on the project site. In addition, the proposed project would be required to comply with all of the requirements of the State GCP, including preparation of PRDs and submittal of a SWPPP to the SWRCB prior to the start of construction activities to ensure the adequate

[82] Alameda County Municipal Code, Title 15 (Building and Construction), Chapter 15.36 (Grading Erosion and Sediment).

control of runoff and prevention of onsite flooding. Therefore, the potential impacts related to flooding on- or off-site and on existing or planned stormwater drainage systems would be ***less than significant.***

g) *– h) Would the proposed project 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 place within a 100-year flood hazard area structures which would impede or redirect flood flows?*

The most recent FIRM shows that the project site is located outside of the 100-year floodplain. Therefore, there would be ***no impact.***

i) *Would the proposed project 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?*

The project site is not located within a dam inundation zone. Therefore, there would be ***no impact.***

j) *Would the proposed project be inundated by seiche, tsunami, or mudflow?*

The project site is more than 20 miles from San Francisco Bay and the Pacific Ocean and is not within a tsunami inundation zone. Therefore, there would be ***no impact.***

XI. Land Use and Planning

Would the proposed project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Physically divide an established community?	❒	❒	■	❒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	❒	❒	■	❒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	❒	❒	■	❒

Regulatory Framework

Local

East County Area Plan

The ECAP includes the following policies specific to land use and planning, and applicable to the proposed project.

- **Policy 89:** The County shall retain rangeland in large, contiguous blocks of sufficient size to enable commercially viable grazing.

- **Policy 92**: The County shall encourage the retention of existing large parcels of greater than 320 acres in remote areas designated "Large Parcel Agriculture" or "Resource Management," where the parcels are not well served by roads, infrastructure, and services.
- **Policy 169:** The County shall allow for continued operation, new development, redevelopment, and expansion of existing and planned windfarm facilities within the limits of environmental constraints.
- **Policy 170:** The County shall protect nearby existing uses from potential traffic, noise, dust, visual, and other impacts generated by the construction and operation of windfarm facilities.
- **Policy 218:** The County shall allow development and expansion of public facilities (e.g., parks and recreational facilities; schools; child care facilities; police, fire, and emergency medical facilities; solid waste, water, storm drainage, flood control, subregional facilities; utilities etc.) in appropriate locations inside and outside the Urban Growth Boundary consistent with the policies and Land Use Diagram of the *East County Area Plan*.
- **Policy 285:** The County shall facilitate the provision of adequate **gas and electric service and facilities** to serve existing and future needs while minimizing noise, electromagnetic, and visual impacts on existing and future residents.

Municipal Code

ACMC Title 17, Zoning, implements the land use designations by establishing comprehensive zoning rules for the county. Section 17.02.020, Purposes, states that the purpose of the Zoning Ordinance is to implement the general plan of the county by guiding and regulating development; to protect the character and stability of existing development, and to encourage orderly and beneficial new development; to provide adequate light, air, privacy, and convenience of access to property, and to secure safety from fire and other dangers; to prevent overcrowding the land and undue congestion of the population; and to regulate the location of buildings and the use of buildings and land so as to prevent undue interference with existing or prospective traffic movements on public thoroughfares.

East Alameda County Conservation Strategy

The East Alameda County Conservation Strategy (EACCS) is a collaborative document developed by multiple federal, State, and local entities, including Alameda County, to provide an effective framework to protect, enhance, and restore natural resources in eastern Alameda County, while improving and streamlining the environmental permitting process for impacts resulting from infrastructure and development projects. The EACCS study area encompasses 271,485 acres within the County and includes the cities of Dublin, Livermore, and Pleasanton. The EACCS enables project proponents to comply with federal and State regulatory requirements within a framework of comprehensive conservation goals and objectives by implementing standardized mitigation requirements. Although the EACCS does not directly result in permits from any regulatory agencies, the standardized avoidance, minimization, and mitigation measures for species and natural communities provides more certainty for project proponents and local agencies of regulatory expectations and costs. This approach is expected to streamline the environmental permitting process, reducing the overall cost of environmental permitting and consolidating mitigation. The EACCS addresses 18 "focal species" comprised of 12 wildlife and 6 plant species that meet one of the following criteria: (1) listed under the federal ESA as threatened or endangered, or proposed for listing; (2)

listed under the California ESA as threatened or endangered, or proposed for listing; (3) listed under the Native Plant Protection Act as rare; or (4) expected be listed under the federal or State ESA in the foreseeable future.[83]

Existing Conditions

As shown on Figure 3-2, the project site is located in a rural agricultural area north of the I-580 on the corner of North Livermore Avenue and May School Road. The project site is bounded by agricultural land to the north, south, and west, and single-family housing to the east. In addition, a PG&E power station is located adjacent to the project site on the corner of North Livermore Avenue and May School Road.

With modification as enacted under the voter approved Measure D, the ECAP designates the project site as Large Parcel Agriculture. This designation permits agricultural uses, agricultural processing facilities (for example wineries, olive presses), limited agricultural support service uses (for example animal feed facilities, silos, stables, and feed stores), secondary residential units, visitor-serving commercial facilities (by way of illustration, tasting rooms, fruit stands, bed and breakfast inns), recreational uses, public and quasi-public uses, solid waste landfills and related waste management facilities, quarries, windfarms and related facilities, utility corridors, and similar uses compatible with agriculture.

The project site is classified into the Agricultural (A) District. Per Alameda County Municipal Code (ACMC) Section 17.06.030, the uses permitted in the A zoning district include one-family dwelling or one-family mobile home; one secondary dwelling unit; crop, vine or tree farm, truck garden, plant nursery, greenhouse, apiary, aviary, hatchery, horticulture; raising or keeping of poultry, fowl, rabbits, sheep or goats or similar animals; grazing, breeding or training of horses or cattle; winery or olive oil mill; fish hatcheries; and public or private hiking trails. While utility scale solar farms are not expressly allowed, conditional uses allowed under ACMC Section 17.06.040 include privately owned wind-electric generators.

Discussion

a) *Would the proposed project physically divide an established community?*

The proposed project would develop the 71.64- acre site with a solar PV facility. The proposed project would retain the existing roadway patterns, and would not introduce any new major roadways or other physical features through existing residential neighborhoods or other communities that would create new barriers. Therefore, the proposed project would not divide any established community and impacts would be *less than significant*.

[83] East Alameda County Conservation Strategy Steering Committee, 2010. East Alameda County Conservation Strategy, Final Draft, October.

b) *Would the proposed project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?*

The ECAP and ACMC Title 17, Zoning, are the primary planning documents for eastern Alameda County. As discussed above, both the land use designation and zoning district would permit the development of renewable energy facility on the project site, such as a windfarm, and the development of a solar PV facility is allowed as a conditional use. Similar to a windfarm, the proposed solar PV facility would generate renewable energy, reduce greenhouse gases emitted into the atmosphere, and further the State's climate change goals.

In 2008, the County approved a conditional use permit for the GreenVolts Utility-Scale Solar Field project (State Clearinghouse Number 2008052076) which would develop a 20.5 acre parcel designated Large Parcel Agriculture with solar PV facility.[84] In addition, in 2012, the County Counsel determined that solar facilities are consistent with ECAP policies because they constitute quasi-public uses consistent with "windfarms and related facilities, utility corridors and similar uses compatible with agriculture" which are allowed on parcels designated Large Parcel Agriculture.[85] In 2016, the County approved a conditional use permit for the Altamont Solar Energy Center project (State Clearinghouse Number 2011082074) which would develop a 140-acre site designated Large Parcel Agriculture with solar PV facility, similar to the proposed project. Accordingly, with approval of two solar PV facilities on parcels designated Large Parcel Agriculture and the Counsel determination that solar facilities are consistent with ECAP policies the County has set a precedent for approval of similar projects. Therefore, with approval of a conditional use permit pursuant to ACMC Section 17.06.040, the proposed project would not conflict with the adopted land use designation and zoning district and impact would be ***less than significant.***

c) *Would the proposed project conflict with any applicable habitat conservation plan or natural community conservation plan?*

As discussed in Section IV, Biological Resources, Criterion (f), the proposed project would not conflict with the EACCS conservation strategy for CZ4 and impacts would be ***less than significant.***

[84] Planning Commission of Alameda County, Monday, June 26, 2008 Agenda, https://www.acgov.org/cda/meetings/documents/06-26-East.pdf, accessed on May 11, 2018.

[85] Alameda County Community Development Agency, Planning Department, September 13, 2012 Memorandum, http://www.acgov.org/cda/planning/landuseprojects/documents/TP-solar-memo-9-13-12.pdf, accessed on May 11, 2018.

XII. Mineral Resources

Would the proposed project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	❒	❒	❒	■
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	❒	❒	❒	■

Regulatory Framework

State

Surface Mining and Reclamation Act of 1974

The CGS classifies lands into Aggregate and Mineral Resource Zones (MRZs) based on guidelines adopted by the California State Mining and Geology Board, as mandated by the Surface Mining and Reclamation Act of 1974. These MRZs identify whether known or inferred significant mineral resources are present in areas. Lead agencies are required to incorporate identified MRZs resource areas delineated by the State into their General Plans.[86]

Local

Alameda County Municipal Code

ACMC Chapter 6.80, Surface Mining and Reclamation, regulates surface mining operations and reclamation of Mined Lands within the unincorporated area of the County pursuant to the California Surface Mining and Reclamation Act of 1975 in order to ensure the continued availability of important mineral resources. Pursuant to Section 6.80.031, Mineral Resource Protection, mine development is encouraged in compatible areas and incompatible land uses that may impede or preclude mineral extraction or where processing is discouraged.

Existing Conditions

The CGS Mineral Resources Project has been tasked with mapping and classifying mineral resources in the State of California pursuant to SMARA. Mineral resources have been mapped on a 7.5-minute topographic quadrangle map basis, and the most relevant map for aggregate (i.e., sand and gravel) mineral resources in the project area is the Livermore quadrangle.[87] Pursuant to the Livermore quadrangle map, there are

[86] Public Resources Code Section 2762(a)(1).

[87] California Department of Conservation, Division of Mines and Geology, Livermore Quadrangle, Open-File Report 96-03, Plate 16 of 29, ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ofr/OFR_96-03/OFR_96-03_Plate16.pdf, accessed on May 6, 2018.

no mineral deposits located on the project site or within the project vicinity. In addition, the ECAP does not assign land use designations for mineral resources within eastern Alameda County.

Discussion

a) – b) Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state or result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

As discussed above, the project site is not identified as containing any mineral deposits. Therefore, there would be *no impact.*

XIII. Noise

Would the proposed project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) 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) Exposure of persons to or generation of excessive groundborne vibration or ground borne noise levels?	❒	❒	■	❒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	❒	❒	■	❒
d) 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 two 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?	❒	❒	■	❒

Definitions and Standards

Noise is defined as unwanted sound, and is known to have several adverse effects on people, including hearing loss, speech and sleep interference, physiological responses, and annoyance. Based on these known adverse effects of noise the federal government, State of California, and the County have established criteria to protect public health and safety and to prevent disruption of certain human activities. Noise is most often defined as unwanted sound. Although sound can be easily measured, the

perception of noise and the physical response to sound complicate the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as "noisiness" or "loudness."

The following are brief definitions of terminology used in this section:

- **Sound.** A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Decibel (dB).** A unit-less measure of sound on a logarithmic scale.
- **Vibration Decibel (VdB).** A unit-less measure of vibration, expressed on a logarithmic scale and with respect to a defined reference vibration velocity. In the U.S., the standard reference velocity is 1 micro-inch per second ($1x10^{-6}$ in/sec).
- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- **Equivalent Continuous Noise Level (L_{eq});** also called the Energy-Equivalent Noise Level. The value of an equivalent, steady sound level which, in a stated time period (often over an hour) and at a stated location, has the same A-weighted sound energy as the time-varying sound. Thus, the L_{eq} metric is a single numerical value that represents the equivalent amount of variable sound energy received by a receptor over the specified duration.
- **Statistical Sound Level (L_n).** The sound level that is exceeded "n" percent of time during a given sample period. For example, the L_{50} level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the changing noise levels are above this value and half of the time they are below it. This is called the "median sound level." The L_{10} level, likewise, is the value that is exceeded 10 percent of the time (i.e., near the maximum) and this is often known as the "intrusive sound level." The L_{90} is the sound level exceeded 90 percent of the time and is often considered the "effective background level" or "residual noise level."
- **Day-Night Level (L_{dn} or DNL).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring during the period from 10:00 p.m. to 7:00 a.m. This is a measure of the cumulative noise exposure in a community.
- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added to the A-weighted sound levels occurring during the period from 7:00 a.m. to 10:00 p.m. and 10 dB added to the A-weighted sound levels occurring during the period from 10:00 p.m. to 7:00 a.m. For general community/environmental noise, CNEL and L_{dn} values rarely differ by more than 1 dB. As a matter of practice, L_{dn} and CNEL values are interchangeable and are treated as being equivalent in this assessment.
- **Sensitive Receptor.** Noise- and vibration-sensitive receptors include land uses where quiet environments are necessary for enjoyment and public health and safety. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, and nursing homes are examples.

Regulatory Framework

Local

Alameda County General Plan

The Alameda County General Plan Noise Element (Countywide Noise Element), adopted in 1975, provides a framework to regulate excessive noise levels and promotes compatibility of land uses with respect to noise. The Countywide Noise Element does not explicitly define the acceptable outdoor noise levels within residential areas, but it does recognize the Federal Environmental Protection Agency (EPA) noise level standards for residential land uses.

East County Area Plan

The ECAP includes the following policies specific to noise, and applicable to the proposed project.

- **Policy 288:** The County shall endeavor to maintain acceptable noise levels throughout East County.
- **Policy 289:** The County shall limit or appropriately mitigate new noise sensitive development in areas exposed to projected noise levels exceeding 60 dB based on the California Office of Noise Control Land Use Compatibility Guidelines.

Existing Conditions

The proposed project site is located within a rural agricultural area with various low-density residential uses. The site is bounded by Livermore Avenue to the west and May School Road to the south. Land uses surrounding the proposed project site include agricultural land to the north, south, and west, and single-family housing to the east; the single-family housing to the east (less than 15 residences total) would be the only sensitive receptors in terms of project generated noise. The existing noise environment surrounding the proposed project site is primarily controlled by roadway noise Livermore Avenue and other nearby roadways. The residential operations to the east may also contribute to the total noise environment at the proposed project site (i.e., property maintenance, people talking, minor mechanical equipment, etc.). Given the low-density buildout of the project vicinity, the ambient noise environment is expected to be generally quieter than a typical residential neighborhood.

Discussion

a) Would the proposed project expose people 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?

ACMC Section 6.60.040 includes quantitative limits for exterior noise generation. According to this section, noise generation within any unincorporated area of the county as measured at a receiving residence shall not exceed the applicable noise level standards provided below in Table 5-7.

TABLE 5-7 EXTERIOR NOISE LIMITS – ALAMEDA COUNTY

Receiving Land Use	Time Period	Maximum Allowable Noise Level (dBA) For 30 Minutes Within Any Hour (L_{50})	For 15 Minutes Within Any Hour (L_{25})	For 5 Minutes Within Any Hour (L_8)	For 1 Minute Within Any Hour (L_2)	Maximum Instantaneous Level (L_{max})
Residential	7:00 am to 10:00 pm	50	55	60	65	70
	10:00 pm to 7:00 am	45	50	55	60	65

Notes:
L_n is equal to the sound level exceeded for n percent of 1 hour
L_{max} is the maximum instantaneous sound level measured over any period of time
1. In the event the measured background noise level exceeds the applicable noise level standard in any category above, the applicable standard shall be adjusted so as to equal the background noise level.
2. Each of the noise level standards specified above shall be reduced by 5 dB if the offensive noise contains a steady, audible tone such as a whine, screech or hum, or is an impulsive noise such as hammering, or contains music or speech conveying informational content
Source: Alameda County Code, Title 6, Chapter 6.60, Section 6.60.40.

The proposed solar PV facility would include various equipment items including modules (panels), inverters, transformers, a control center, and a meteorological station. The only equipment items expected to generate notable levels of noise would be the inverters and, to a lesser extent, the transformers.[88] Other equipment noise would be negligible.[89]

The proposed project would include 48 inverters, which could potentially exceed the noise limits pursuant to ACMC Section 6.60.040 included in Table 5-7, above. The sound level of a PowerOne Aurora Trio 20.0, a commonly used commercial inverter, is approximately 70.7 dBA at 3.28 feet (1 meter).[90,91] Though the specific equipment expected to be used for the proposed project is unknown at this time, the reference sound level of a PowerOne Aurora Trio 20.0 is used herein as being representative for this type and size of solar PV facility. The solar inverters would be placed on equipment pads at least 1,000 feet (305 meters) from the nearest sensitive receptors to the east. At this distance, the sound level of a single commonly used commercial inverter would be reduced to approximately 20.4 dBA. With respect to all 48 inverters operating at the same time at a distance of 1,000 feet, the nearest sensitive receptors would be exposed to approximately 37 dBA.[92] This worst-case noise level estimation is well below the lowest noise limit provided by the ACMC. Further, as the solar equipment would not be operating after sunset, the nearest

[88] From previous project work on a similar PV project, representative transformer portions had measured noise levels that were from 5 to 10 dB lower than the inverter (City of Industry 2 MW Carport Photovoltaic Solar and Electric Charging Project, PlaceWorks (formerly The Planning Center | DC&E), 2012). This result, coupled with the small number of proposed transformers (i.e., four), would yield transformer-generated noise levels that would be approximately 20 dB less than the associated inverter aggregate at the nearest sensitive receptors.

[89] The proposed project would include 23,316 PV modules, 48 inverters, four transformers, tracking and mounting systems, connective wire, a control center, and a meteorological station. Additional on-site components include two 20,250 gallon AQUABLOX® D-Raintanks® and two 5,000 gallon water tanks.

[90] This level refers to sound pressure level (reference 20 micro-pascals) using an extended bandwidth.

[91] Malén, J., 2013. Analysis of noise emissions of solar inverters (Master's Thesis, Aalto University School of Science and Technology).

[92] The summation of 48 identical sources is given by 10 x $Log_{10}(48)$ = 16.8 dB. Thus, 20.4 + 16.8 ≈ 37 dBA.

sensitive receptors would not be exposed to project-related mechanical equipment noise during the nighttime. Thus, project-related, equipment-generated noise would be less than significant.

Besides equipment-generated noise, the proposed project would not include operational activities that would be expected to generate notable levels of noise in terms of the nearest sensitive receptors. The proposed project would require transport of water, entailing use of a 5,000 gallon water truck approximately 206 times per year. These trips are anticipated to be sporadic and nominal (less than 10 one-way trips per day). A doubling of the traffic volumes is necessary to achieve a perceptible (3 dB increase in noise levels). Consequently, one truck delivery per day would not substantially elevate traffic noise in the project vicinity. The proposed project would also require occasional and sporadic maintenance activities, but these would not be expected to produce notable noise levels at offsite receptors. Additionally, the proposed project would employ a small number of regular staff members to be located at the proposed project site. While these staff members would travel to the site daily, the very low number of trips, combined with the existing traffic flows would result in negligible increases in roadway noise (due to new employees). Thus, activity- and traffic-generated noise would be less than significant.

Therefore, noise impacts related to operation of the proposed project in relation to established standards would be ***less than significant***.

b) Would the proposed project expose people to or generation of excessive groundborne vibration or ground borne noise levels?

Pursuant to ACMC Section 6.60.050-8 operating or permitting the operation of any device that creates a vibration which is above the vibration perception threshold of an individual at or beyond the property boundary of the source on private property shall be prohibited. However, the perception threshold is not defined. Therefore, for the purposes of this analysis the vibration guidelines provided the Federal Transit Administration (FTA) serve as the quantified vibration limits for the proposed project.[93] In terms of the FTA guidelines, vibration thresholds are provided for both annoyance and architectural damage[94] due to vibration. For vibration annoyance, 78 VdB is considered the maximum vibration level for residential land uses. For architectural damage due to vibration, a Peak Particle Velocity (PPV) of 0.2 is considered the maximum vibration level for non-engineered timber and masonry buildings (typically applied to residential structures). These FTA guidelines provide the basis for determining the impact significance of potential project-related vibration impacts.

[93] Federal Transit Administration (FTA). 2006, May. *Transit Noise and Vibration Impact Assessment*. United States Department of Transportation. FTA-VA-90-1003-06.

[94] The term 'architectural damage' is defined as minor surface cracks (in plaster, drywall, tile, or stucco) or the sticking of doors and windows. This is below the severity of 'structural damage' which entails the compromising of structural soundness or the threatening the basic integrity of the building shell.

On-going Operations Vibration Impacts

For potential project-generated vibration impacts to nearby receptors, the project would not include equipment that could generate substantial levels of long-term groundborne vibration levels. Therefore, vibration from on-site sources would be ***less than significant.***

Short-Term Construction Vibration Impacts

Construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. Construction activities can result in varying degrees of ground vibration, depending on the equipment and methods used, distance to the affected structures, and soil type. The generation of vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight damage at the highest levels. Vibration is typically noticed nearby when objects in a building generate noise from rattling windows or picture frames. It is typically not perceptible outdoors and, therefore, impacts are normally based on the distance to the nearest building.[95] The FTA Transit Noise and Vibration Impact Assessment Manual includes reference vibration levels for different types of typical, commonly used construction equipment, as shown in Table5-8. Table 5-8 also includes potential vibration affects associated with the proposed project at varying distances with the top half of the table oriented to annoyance effects and the bottom half of the table presenting damage effects. Proposed construction activities are expected to be at least 100 feet from the nearest sensitive receptors.

Based on the referenced vibration levels provided by FTA, a vibratory roller generates a vibration level of 94 VdB at a distance of 25 feet. As shown in Table 5-8, at 100 feet (that is, the minimum expected distance to the nearest receptor structure), construction vibration levels associated with a vibratory roller (or similar equipment item) would be up to 76 VdB (relative to annoyance effects) and be up to 0.026 inches/second PPV (relative to damage effects). Both of these results are below the respective significance thresholds from the FTA Impact Assessment Manual.

Assuming all project construction would be located at least 90 feet from the nearest receptor structures, vibration impacts associated with proposed project construction would not result in perceptible vibration levels at any nearby structures and would not exceed the applicable FTA guidelines for vibration (i.e., 78 VdB for annoyance; 0.2 PPV inches/second for damage). Thus, construction-related vibration impacts would be ***less than significant***.

[95] Federal Transit Administration (FTA). 2006, May. *Transit Noise and Vibration Impact Assessment*. United States Department of Transportation. FTA-VA-90-1003-06.

TABLE 5-8 TYPICAL VIBRATION LEVELS PRODUCED BY COMMON CONSTRUCTION EQUIPMENT – PROJECTED DISTANCES

Equipment Item[a]	Reference Vibration Level at 25 feet (VdB)	Projected Vibration Level (Annoyance)[b] at Receiver Distances (VdB)			
		At 50 feet	At 90 Feet	At 100 feet	At 200 feet
Vibratory Roller	94	**85**	77	76	67
Large Bulldozer	87	78	70	69	60
Loaded Trucks	86	77	69	68	59
Jackhammer	79	70	62	61	52
Small Bulldozer	58	49	41	40	31

Equipment Item[a]	Reference Vibration PPV at 25 feet (inches/second)	Projected Vibration Peak Particle Velocity (Damage)[c] at Receiver Distances (inches/second)			
		At 50 feet	At 90 Feet	At 100 feet	At 200 feet
Vibratory Roller	0.210	0.074	0.031	0.026	0.009
Large Bulldozer	0.089	0.031	0.013	0.011	0.004
Loaded Trucks	0.076	0.027	0.011	0.010	0.003
Jackhammer	0.035	0.012	0.005	0.004	0.002
Small Bulldozer	0.003	0.001	<0.000	<0.000	<0.000

Note: **Bold** numbers indicate values that exceed applicable FTA guidelines

a. There are some items that may be employed on the construction site that are not listed in the following table (i.e., excavator, backhoe). The vibration levels produced by such items are estimated to be comparable to the items in the table (i.e., excavator levels comparable to large bulldozer).

b. For vibration annoyance, 78 VdB is considered the maximum vibration level for residential land uses.

c. For architectural damage due to vibration, a Peak Particle Velocity (PPV) of 0.2 inches/second is considered the maximum vibration level for non-engineered timber and masonry buildings (typically applied to residential structures).

Source: Federal Transit Administration (FTA). 2006, May. Transit Noise and Vibration Impact Assessment. United States Department of Transportation. FTA-VA-90-1003-06.

Therefore, the proposed project is not anticipated to result in the exposure of persons or structures to, or generation of, excessive ground-borne vibration; and overall impacts would be ***less than significant***.

c) Would the proposed project create a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

As discussed in Criterion (a) of this section, the potential for noise increases in terms of project operation, both with regard to stationary mechanical sources and for project-induced traffic flow changes, would be less than significant. Thus, there would be a ***less than significant*** permanent increase in ambient sound levels due to the proposed project.

d) Would the proposed project create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Construction of the proposed project is expected to occur in two phases over a one-year period. Phase I would be located on the southern portion of the project site adjacent to May School Road, and encompass 30.8 acres. Phase 2 would be located on the northern portion of the project site adjacent to North Livermore Avenue, and encompass 27.9 acres.

Pursuant to ACMC Section 6.60.070(E), noise sources associated with construction is exempt from County exterior noise limits, provided said activities take place between the hours of 7:00 AM to 7:00 PM on weekdays, or between 8:00 AM and 5:00 PM on weekends. Though project-related construction activities would abide by these time-of-day limits, expected construction noise levels were analyzed and presented below for informational purposes.

Sensitivity to noise is based on the location of the equipment relative to sensitive receptors, the time of day, and the duration of the noise-generating activities. Two types of short-term noise impacts could occur during construction: (1) offsite, mobile-source noise from transport of workers, material deliveries, and debris and soil haul and (2) on-site, stationary-source noise from use of heavy construction equipment. Existing uses surrounding the project site would be exposed to construction noise which, at times may be audible, but the associated community noise levels may not necessarily result in significant temporary noise impacts.

Construction Vehicle Noise

Construction-related activities would generate worker, vendor, and soil/material haul trips. The transport of workers and equipment to the construction site would incrementally increase noise levels along site access roadways. The hauling for the crushed aggregate rock for roadways would generate the most construction vehicle trips, which is expected to last approximately 20 days. However, during this worst-case haul phase, the proposed project would generate only 24 truck trips per day, which is expected to be well below the existing traffic along site access roadways. As such, increases in traffic flows due to construction vehicles will not contribute to the overall ambient noise level along nearby roadways. Other phases of construction are anticipated to have fewer daily trips (for the aggregate of workers plus vendors plus haul-offs) and these phases would have even less of an incremental difference in noise levels along construction trip routes than the worst-case demolition haul phase. Thus, daily construction-related traffic noise would be ***less than significant*** at noise-sensitive receptors along construction routes.

Individual construction vehicle pass-bys may create momentary noise levels of up to approximately 85 dBA (L_{max}) at 50 feet from the vehicle, but these occurrences would generally be infrequent, would last for only a few seconds at a time, and would occur during the least sensitive hours of the day (when people are typically out of their houses). Because these construction vehicle pass-by noise level increases would be infrequent, sporadic, short-term, and would occur during weekday daytime hours, noise impacts from construction-related traffic pass-bys would be ***less than significant*** at noise-sensitive receptors along construction routes.

Construction Equipment Noise

Noise generated by on-site construction equipment is based on the type of equipment used, its location relative to sensitive receptors, and the timing and duration of noise-generating activities. Each stage of construction involves different kinds of equipment and has distinct noise characteristics. Noise levels from construction activities are typically dominated by the loudest piece of equipment. The prevailing noise source on most construction equipment is typically the engine, although work-piece noise (such as dropping of materials) can also be notable at times.

The noise produced at each construction stage is determined by combining the noise level contributions (typically given in L_{eq}) from each piece of equipment used at a given time, while accounting for the on-going time-variations of noise emissions (commonly referred to as the usage factor). Heavy equipment, such as a dozer or a loader, can have maximum, short-duration noise levels of approximately 80 to 85 dBA at 50 feet. However, overall noise emissions vary considerably, depending on what specific activity is being performed at any given moment. Noise from construction equipment may be intermittent and sound levels diminish at a rate of at least 6 dB per doubling of distance (conservatively ignoring other attenuation effects from air absorption, ground effects, and/or shielding/scattering effects). Additionally, average noise levels at noise-sensitive receptors could vary considerably, because mobile construction equipment would move around the site with different loads and power requirements.

Using information provided by the County and methodologies and inputs employed in the air quality assessment, the expected construction equipment mix was estimated and categorized by construction activity. Noise levels from project-related construction activities were calculated based on the simultaneous use of all applicable construction equipment.[96] Noise-generating equipment items associated with the proposed project's construction are expected to be at least 100 feet from the nearest sensitive receptors. Table 5-9 presents potential construction noise associated with the proposed project at varying distances, starting with the standard reference distance of 50 feet.

TABLE 5-9 ESTIMATED CONSTRUCTION NOISE LEVELS BY PHASE – PROJECTED DISTANCES

	Projected Construction Noise Levels at Receiver Distances, dBA L_{eq}				
Construction Phase	At 50 Feet	At 100 Feet	At 150 Feet	At 200 Feet	At 300 Feet
Site Preparation/Grading	83	77	74	71	67
Building Construction	82	76	73	70	67
Paving	78	73	69	66	63
Architectural Coating	73	66	63	60	57

Source: Calculations performed with the FHWA's RCNM software and included in the Appendix E, of this Initial Study.

Construction activities would increase noise levels at and near the proposed area of improvements. Based on the provided construction equipment information, the loudest construction phase is expected to be

[96] Federal Highway Administration (FHWA). 2006. *Roadway Construction Noise Model (RCNM), Version 1.0*.

the site preparation/grading phase. Since proposed construction activities are expected to be at least 100 feet from the nearest sensitive receptors, the highest construction noise levels associated with the proposed project is expected to be no more than 77 dBA L_{eq}.

Construction activities associated with the proposed project would abide by the time-of-day limits provided by the ACMC, included Table 5-7. Further, since the nearest receptors would most likely be located much further than 100 feet from proposed construction activities, and since audible noise levels in terms of the nearest noise-sensitive receptors would be temporary, sporadic, and intermittent, impacts at the nearest sensitive receptors would be ***less than significant***.

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?

The project site is not located within 2 miles of a public airport or public use airport. The closest public airport to the project site is Livermore Municipal Airport, located 4.5 miles southwest of the project site in the City of Livermore. Therefore, there would be ***no impact***.

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?

The nearest private aircraft facilities to the proposed project site is the PG&E Livermore Training Center Heliport located over 4 miles to the southeast of the proposed project site.[97] While operations at this private heliport facility may, at times, be audible at the site, the relatively limited and sporadic use of this heliport for corporate travel or other limited uses, coupled with the distances between it and the project site, would result in negligible amounts of community noise at the proposed residential developments. As such, development of the project would not expose people onsite to excessive noise levels from aircraft approaching or departing the private aircraft facilities and impacts would be ***less than significant***.

XIV. Population and Housing

Would the proposed project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	❒	❒	❒	■
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	❒	❒	❒	■

[97] Airnav.com, accessed on March 29, 2018.

Would the proposed project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	❒	❒	❒	■

Existing Conditions

The population of Alameda County in 2017 was estimated at 1,663,190 with a total of 599,732 housing units. The average number of persons per household in Alameda County was estimated at 2.79.[98] The project site is actively grazed by livestock and is generally undeveloped with the exception of an existing 1,100-square-foot single-family home and associated structures located on the southwest corner of the project site. The existing single-family home would remain on-site and no additional housing is proposed as part of the project.

Discussion

a) Would the proposed project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

The proposed project, a solar PV facility, would not involve new housing or employment centers; thus, the proposed project would not induce substantial population growth in the area. Therefore, there would be *no impact.*

b) – c) Would the proposed project displace substantial numbers of existing housing or substantial numbers of people, necessitating the construction of replacement housing elsewhere?

The proposed project, would not involve new housing or employment centers; thus the proposed project would result in no impact related to population growth. The existing single-family home would remain on-site and no additional housing is proposed as part of the project thus, no housing or residents would be displaced. Therefore, there would be *no impact.*

[98] United States Census Bureau, Quick Facts, Alameda County, https://www.census.gov/quickfacts/fact/table/alamedacountycalifornia/PST045216, accessed on May 10, 2018.

XV. Public Services

Would the proposed project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	❒	❒	❒	■
Police protection?	❒	❒	❒	■
Schools?	❒	❒	❒	■
Libraries?	❒	❒	❒	■

Regulatory Framework

State

California Fire Code

As discussed in Section IX, Hazards and Hazardous Materials, ACMC Chapter 6.04 adopts the California Fire Code by reference. The California Fire Code adopts by reference the International Fire Code (IFC) with necessary State amendments. Updated every three years, the California Fire Code includes provisions and standards for emergency planning and preparedness, fire service features, fire protection systems, hazardous materials, fire flow requirements, and fire hydrant locations and distribution. Typical fire safety requirements include: installation of sprinklers in all high-rise buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildlife hazard areas.

Local

East County Area Plan

The ECAP includes the following policies specific to public services and applicable to the proposed project.

- **Policy 241:** The County shall provide effective law enforcement, fire, and emergency medical services to unincorporated areas.
- **Policy 242:** The County shall reserve adequate sites for sheriff, fire, and emergency medical facilities in unincorporated locations within East County.

Existing Conditions

Fire Protection Services

Fire protection service for the project site is provided by Alameda County Fire Department (ACFD). The ACFD protects approximately 508 square miles and a daytime population of approximately 394,000 people. The ACFD has 30 stations within Alameda County and provides all-risk emergency services to the unincorporated areas of Alameda County (excluding Fairview), the cities of San Leandro, Dublin, Newark, Union City and Emeryville, the Lawrence Berkeley National Laboratory and the Lawrence Livermore National Laboratory. Fire Station No. 17, located at 6200 Madigan in Dublin, is the closest station to the project site.[99]

Police Protection Services

Police protection service for the project site is provided by the Alameda County Sheriff's Office (Sheriff's Office). The Sheriff's Office provides law enforcement services to unincorporated areas of the Alameda County, Hayward, Cherryland, Ashland, San Lorenzo, San Leandro, Sunol, Pleasanton and Livermore. The Sheriff's Office has 8 locations within Alameda County and has over 1,500 employees, both sworn and professional staff. The Sheriff's Office nearest the project site is located at 100 Civic Plaza in Dublin.[100]

School Services

The project site is located within the Livermore Valley Joint Unified School District (Livermore Valley JUSD) boundary.[101] Livermore Valley JUSD currently operates nine elementary schools, two K-8 schools, three middle schools, three high schools, and two alternative education schools. The closest elementary school to the project site is Croce Elementary located at 5650 Scenic Avenue in Livermore, the closest middle school is Andrew N. Christensen Middle School located at 5757 Haggin Oaks Avenue in Livermore, and the high schools is Livermore High School located at 600 Maple Street in Livermore.[102]

Library Services

The Alameda County Library System operates 10 library branches within Alameda County. The closest library to the project site is the Dublin library located at 200 Civic Plaza in Dublin.

Discussion

a) *Would the proposed project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in*

[99] Alameda County Fire Department, General Information, https://www.acgov.org/fire/about/index.htm, accessed on May 8, 2018.

[100] Alameda County Sheriff's Office, About Us, https://www.alamedacountysheriff.org/about.php, accessed on May 8, 2018.

[101] Alameda County Data Sharing Initiative, Unified School District Boundaries, L:\Proposal\2018\0513N_Fresno_Industrial_Land_Use_Compatability_Study\RFP, accessed on May 8, 2018.

[102] Livermore School District, School Web Sites, http://www.livermoreschools.com/schools, accessed on May 8, 2018.

order to maintain acceptable service ratios, response times or other performance objectives for any of the public services including, fire and police protection, schools, parks and libraries?

The primary purpose of a public services impact analysis is to examine the impacts associated with physical improvements to public service facilities required to maintain acceptable service ratios, response times or other performance objectives. Public service facilities need improvements (i.e., construction, renovation or expansion) as demand for service increases. Increased demand is typically driven by increases in population. The proposed project would have a significant environmental impact if it would exceed the ability of public service providers to adequately serve residents, thereby requiring construction of new facilities or modification of existing facilities. As discussed above in Section XV, Population and Housing, the proposed project would not result in a net increase of residents at the project site or elsewhere in the region because it does not propose housing and is not a major regional employer. Therefore, the proposed project would not impact fire or police protection services, schools or library services. Accordingly, there would be ***no impact*** with respect to public services.

XVI. Parks and Recreation

Would the proposed project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	❒	❒	❒	■
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	❒	❒	❒	■

Regulatory Framework

Local

Alameda County General Plan

The Alameda County General Plan Recreation Element (Countywide Recreation Element), adopted in 1956 and amended in 1994, provides a framework for private and public acquisition and development of recreation areas and facilities. It contains general planning objectives related to promote and preserve recreational opportunities throughout the County.

East County Area Plan

The ECAP includes the following policies specific to parks and recreation, and applicable to the proposed project.

- **Policy 52:** The County shall preserve open space areas for the protection of public health and safety, provision of recreational opportunities, production of natural resources (e.g., agriculture, windpower, and mineral extraction), protection of sensitive viewsheds, preservation of biological resources, and the physical separation between neighboring communities.
- **Policy 54:** Policy 54: The County shall approve only open space, park, recreational, agricultural, limited infrastructure, public facilities (e.g., limited infrastructure, hospitals, research facilities, landfill sites, jails, etc.) and other similar and compatible uses outside the Urban Growth Boundary.

Existing Conditions

Alameda County contains numerous recreational facilities, including major parks and open space areas, local parks, and private recreational facilities. The closest parks to the project site include North Livermore Park, Christensen Park, and Altamont Creek Trail.

Discussion

a) *– b) Would the proposed project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? Does the proposed project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?*

Increased demand for existing neighborhood and regional parks or other recreational facilities is typically driven by increases in population. The proposed project, a solar PV facility, would not result in a net increase of residents at the project site or elsewhere in the region because it does not include recreational facilities or require the construction or expansion of recreational facilities. Therefore, the proposed project would not contribute to the deterioration of existing facilities nor require the construction or expansion of existing recreational facilities. Accordingly, there would be *no impact* with respect to parks and recreation.

XVII. Transportation and Circulation

Would the proposed project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) 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?	❒	❒	■	❒

Would the proposed project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
b) 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) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	❒	❒	❒	■
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	❒	❒	■	❒
e) Result in inadequate emergency access?	❒	❒	❒	■
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	❒	❒	❒	■

Definitions and Standards

The operational performance of a roadway network is commonly described with the term level of service. The level of service is a qualitative description of operating conditions, ranging from level of service (LOS) A (free-flow traffic conditions with little or no delay) to LOS F (oversaturated conditions where traffic flows exceed design capacity, resulting in long queues and delays). LOS E corresponds to operations “at capacity.” When volumes exceed capacity, stop-and-go conditions result and operations are designated as LOS F.

Analysis of traffic operations are normally conducted using the Highway Capacity Manual (HCM) Level of Service methodology. All intersections in the vicinity of the project are unsignalized. Per the HCM methodology, the overall weighted average delay was calculated at all-way-stop intersections, and the worst-case approach delay was calculated at two-way stop-controlled intersections. The level of service corresponds to the delay calculated. Table5-10 presents the LOS criteria according to the corresponding control delay.

According to ECAP Policy 193, the traffic LOS standard for major intercity arterials is LOS D. The LOS standard adopted by the Alameda County Congestion Management Agency (CMA) for Congestion Management Program CMP roadways such as Interstate 580 is LOS E.

TABLE 5-10 UNSIGNALIZED INTERSECTION LOS CRITERIA

Level of Service	Description	Average Control Delay (seconds per vehicle)
A	No delay for stop-controlled approaches	< 10.0
B	Operations with minor delays	> 10.0 to 15.0
C	Operations with moderate delays	> 15.0 to 25.0
D	Operations with some delays	> 25.0 to 35.0
E	Operations with high delays and long queues	> 35.0 to 50.0
F	Operation with extreme congestion, with very high delays and long queues unacceptable to most drivers	> 50.0

Sources: 2010 Highway Capacity Manual, Transportation Research Board, 2011.

Regulatory Framework

Local

East County Area Plan

The ECAP includes the following policies specific to transportation and circulation, and applicable to the proposed project.

- **Policy 183:** The County shall seek to minimize traffic congestion levels throughout the East County street and highway system.
- **Policy 184:** The County shall seek to minimize the total number of Average Daily Traffic (ADT) trips throughout East County.
- **Policy 190:** The County shall require new non-residential developments in unincorporated areas to incorporate Transportation Demand Management (TDM) measures and shall require new residential developments to include site plan features that reduce traffic trips such as mixed use development and transit-oriented development projects.
- **Policy 193:** The County shall ensure that new development pays for roadway improvements necessary to mitigate the exceedance of traffic Level of Service standards (as described below) caused directly by the development. The County shall further ensure that new development is phased to coincide with roadway improvements so that (1) traffic volumes on intercity arterials significantly affected by the project do not exceed Level of Service D on major arterial segments within unincorporated areas, and (2) that traffic volumes on Congestion Management Program (CMP) designated roadways (e.g., Interstate Highways 580 and 680 and State Highway 84) significantly affected by the project do not exceed Level of Service E within unincorporated areas. If LOS E is exceeded, Deficiency Plans for affected roadways shall be prepared in conjunction with the Congestion Management Agency. LOS shall be determined according to Congestion Management Agency adopted methodology. The County shall encourage cities to ensure that these Levels of Service standards are also met within unincorporated areas.

Alameda County Congestion Management Program

The Alameda County Congestion Management Program (CMP) identifies countywide strategies to respond to future transportation on needs and procedures to reduce congestion. The CMP identifies existing and desired traffic conditions on a variety of roadways throughout the county. All freeways and state highways, and selected arterial roadways, are designated elements of the CMP Roadway System. The two nearest CMP roadways to the project site are I-580 and Vasco Road.

Existing Conditions

Roadways and Intersections

Roadways near the project site are shown on Figure 4-1, *Regional and Vicinity Location*, and on Figure 4-2, *Aerial of Project Site and Surrounding Area,* in Chapter 4, Project Description.

- North Livermore Avenue near the project site is a two-lane north-south roadway with Class II bicycle lanes (striped and signed) on both sides of the roadway. North Livermore Avenue near the project site is classified as a local roadway in the ECAP; the segment of Livermore Avenue extending south from about 0.5-mile south of the project site is classified as an Arterial Roadway in the ECAP.[103] North Livermore Avenue has on and off ramps at Interstate 580 (I-580) about 2.5 miles south of the project site; downtown Livermore is about 3.8 miles south of the project site. Roadway capacities are not provided in the ECAP; however, local roadways have capacity of up to 5,000 vehicles per day according to the City of Livermore General Plan.[104]
- May School Road is a two-lane east-west paved local roadway. The intersection of North Livermore Avenue and May School Road is unsignalized with a stop at the westbound approach at May School Road.
- Bel Roma Road is a two-lane north-south local roadway about 720 feet east of the project site. The intersection of Bel Roma Road and May School Road is controlled by stop at the southbound approach of Bel Roma Road.
- Interstate 580 (I-580) provides regional access to the vicinity of the project. I-580 at Livermore Road is a freeway with five westbound lanes and six eastbound lanes.

No traffic volume data is available for any of the roadways near the project site.

[103] Alameda County. 2002, July 17. East County Area Plan, https://www.acgov.org/cda/planning/generalplans/documents/EastCountyAreaPlancombined.pdf, accessed on May 2, 2018.

[104] City of Livermore. 2014, December 15. General Plan Circulation Element, http://www.cityoflivermore.net/civicax/filebank/documents/6095/, accessed on April 27, 2018.

Bicycle and Pedestrian Facilities

There are no sidewalks on any of the roadways near the project site; the only bicycle facilities near the site are the bicycle lanes along North Livermore Avenue. A proposed regional trail extending north-south about 0.4 miles west of the project site is mapped in the ECAP.[105]

Public Transit

There are no public transit stops near the project site.

Discussion

a) Would the proposed 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?

Construction Impacts

Construction of the proposed project is expected to occur in two phases during a one year period. Phase I would be located on the southern portion of the project site adjacent to May School Road and encompass 30.8 acres. Phase 2 would be located on the northern portion of the project site adjacent to North Livermore Avenue, and encompass 27.9 acres. Each phase is anticipated to take between 4 and 6 months and will employ approximately 25 people. Project construction is described in Chapter 4, Project Description. Site access would be via two proposed earthen driveways from North Livermore Avenue.

Construction Traffic Generation

Construction Worker Commute Trips

For a conservative analysis approach, it is assumed that the 25 construction workers would drive separately to the project site. Accordingly, construction workers would generate 25 inbound trips to the site in the morning and 25 outbound trips in the afternoon every weekday during the construction period. Based on our observations at several construction sites, the majority of construction workers normally arrive at a construction site before the project peak hour between 7:00 and 9:00 AM and leave mid-afternoon before the PM peak hour traffic. This would equate to 50 one-way trips per day during the construction period.

Construction Equipment and Haul Trucks

Construction of each phase of the project would be conducted in three steps: site preparation and grading; building construction, and paving. Site preparation and grading are anticipated to take one

[105] Alameda County. 2002, July 17. East County Area Plan.

month; construction five months; and paving 1.5 months concurrently with construction. No soil import or export is planned. It is estimated that up to 5,211 cubic yards of crushed aggregate would be imported via 193 haul trips to be placed atop a proposed maintenance road (see *Proposed Site Access* below). A total of 210 haul trips would be required to deliver the project materials to the project site, these trips will be spread out thorough the day. Haul trips per day and number of days of haul trips are estimated below:

- Phase 1:
  - Solar Equipment Delivery: two trips per day for 111 days
  - Crushed aggregate delivery: 11 trips per day for 20 days

  Maximum trips per day: 13

- Phase 2:
  - Solar Equipment Delivery: two trips per day for 108 days
  - Crushed aggregate delivery: two trips per day for 111 days

  Maximum trips per day: 4

Construction Traffic Impacts

Construction of Phase 1 is estimated to generate up to 63 trips per day (50 worker commute trips and 13 haul trips). Construction of Phase 2 is anticipated to generate up to 54 trips per day (50 commute trips and 4 haul trips). These trips are nominal and would represent a small fraction of the capacity of North Livermore Road and other streets in the vicinity of the project site. These trips would be temporary in nature (for up to 12 months) and would be dispersed throughout the day. It is not expected that project construction traffic would substantially degrade the LOS on roadways and intersections such that it would exceed County standards. Therefore, construction traffic impacts on area roadways would be ***less than significant***.

Operational Impacts

Access to the project site would be provided via two gated unpaved driveways located on North Livermore Avenue. Emergency access may also be available along adjacent ranch roads. In addition, a 20-foot wide all weather pervious internal maintenance road will be constructed to provide access to all project components.

Project operation would only generate occasional trips by project maintenance workers to perform routine maintenance and repairs, and a water truck that would make deliveries to the project site approximately 206 times per year. These trips are anticipated to be sporadic and nominal (less than 10 one-way trips per day), and would not affect the capacity of the roadway system. It is not expected that project operation traffic would substantially degrade the LOS on roadways and intersections such that it would exceed County standards. Therefore, ***no impact*** to traffic conditions on nearby roadways would occur.

Pedestrian, Bicycle Facilities, and Public Transit

There are no sidewalks on any of the roadways near the project site; the only bicycle facilities near the site are the bicycle lanes along North Livermore Avenue. Project construction would generate a limited

number of trips; construction staging of equipment and materials would not block the bicycle lanes; and project operation would generate minimal trips. No public transit routes operate near the project site. Therefore, there would be ***no impact*** with respect to bicycle or pedestrian facilities or public transit.

b) Would the proposed 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?

The Congestion Management Program (CMP) in effect in Alameda County was issued by the County Transportation Commission in December 2017. All freeways and state highways, and selected arterial roadways, are designated elements of the CMP Roadway System. The two nearest CMP roadways to the project site are I-580 and Vasco Road. Vasco Road, designated an arterial in the ECAP, passes about 2.3 miles east of the project site and extends northeast toward the City of Brentwood in Contra Costa County.[106] I-580 at Livermore Road carried average daily traffic volumes of 204,000 eastbound and 189,000 westbound in 2016, the latest year for which data are available.[107] Thus, project construction traffic would be a negligible fraction of traffic volumes on I-580. Most project-generated truck trips are expected to travel south on Livermore Avenue to I-580, and are not expected to use Vasco Road. Therefore, impacts to CMP roadways would be ***less than significant***.

c) Would the proposed project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

Project development would not change air traffic levels. The closest public airport to the project site is Livermore Municipal Airport, located 4.5 miles southwest of the project site in the City of Livermore. The project site is outside of safety compatibility zones for the Livermore Municipal Airport where land uses are regulated to minimize air crash hazards to people on the ground; and outside of areas where structure heights are regulated to prevent obstructions to air navigation.[108] Therefore, there would be ***no impacts*** with respect to air traffic levels or air traffic patterns.

d) Would the proposed project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Site access would be via two proposed earthen driveways intersecting North Livermore Avenue. The intersections would be at right angles and their designs would not create hazards. Project access would be reviewed and approved in conformance to Alameda County roadway design and sight distance standards. A review of aerial photography and photos taken at the project site indicate that the road is flat and at grade, no major obstructions, sharp curves and hazards are present in the vicinity of the site. Project development would not place incompatible uses on area roadways. Impacts would be ***less than significant***.

[106] Alameda County. 2002, July 17. East County Area Plan.

[107] California Department of Transportation (Caltrans). 2018. 2016 Traffic Volumes (for ALL vehicles on CA State Highways), http://www.dot.ca.gov/trafficops/census/volumes2016/, accessed on May 1, 2018.

[108] Alameda County Community Development Agency. 2018. Airport Land Use Compatibility Plans, https://www.acgov.org/cda/planning/generalplans/airportlandplans.htm, accessed on April 30, 2018.

e) Would the proposed project result in inadequate emergency access?

Project development would not impact emergency access. Construction equipment and materials would be staged on-site and not on public roadways. A 20-foot wide all-weather pervious internal maintenance road will be constructed to provide access to all project components. Therefore, ***no impact*** would occur.

f) Would the proposed 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?

As discussed in Criterion (a) of this section, there would be ***no impact*** with respect to pedestrian, bicycle, or public transit facilities or services.

XVIII. Utilities and Service Systems

Would the proposed project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	❒	❒	❒	■
b) Require 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) Require 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) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	❒	❒	■	❒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	❒	❒	❒	■
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	❒	❒	■	❒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	❒	❒	■	❒
h) Result in a substantial increase in natural gas and electric service demands requiring new energy supply facilities and distribution infrastructure or capacity enhancing alternations to existing facilities?	❒	❒	❒	■

Regulatory Framework

State

California Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act, which was passed in California in 1969 and amended in 2013, the State Water Resources Control Board (SWRCB) has authority over State water rights and water quality policy. This act divided the State into nine regional basins, each under the jurisdiction of a RWQCB to oversee water quality on a day-to-day basis at the local and regional level. RWQCBs engage in a number of water quality functions in their respective regions. RWQCBs regulate all pollutant or nuisance discharges that may affect either surface water or groundwater. Alameda County is overseen by the San Francisco Bay RWQCB.

Groundwater Management Act (1992)

The Groundwater Management Act of the California Water Code (Assembly Bill [AB] 3030), signed into law on September 26, 1992, and effective on January 1, 1993, provides guidance for applicable local agencies to develop voluntary Groundwater Management Plans (GMP) in State-designated groundwater basins. The GMPs can allow agencies to raise revenue to pay for measures influencing the management of the basin, including extraction, recharge, conveyance, facilities' maintenance, and water quality.[109]

Sustainable Groundwater Management Act (2014)

The Sustainable Groundwater Management Act of 2014 (SGMA) consists of three legislative bills, Senate Bill (SB) 1168, AB 1739, and SB 1319. The legislation provides a framework for long-term sustainable groundwater management across California. Under the roadmap laid out by the legislation, local and regional authorities in medium and high priority groundwater basins will form Groundwater Sustainability Agencies (GSAs) that oversee the preparation and implementation of a local Groundwater Sustainability Plan (GSP). The project site is located within the Alameda County Flood Control and Water Conservation District, Zone 7 (Zone 7 Water Agency) GSA formed in 2016.[110] Groundwater Sustainability Plans will have to be developed and in place by 2022. GSAs will have until 2040 to achieve groundwater sustainability.[111]

State Updated Model Water Efficient Landscape Ordinance

The updated Model Water Efficient Landscape Ordinance requires cities and counties to adopt updated water efficient landscape ordinances by February 1, 2016 or to adopt a different ordinance that is at least as effective in conserving water as the updated Model Ordinance. The Water Efficient Landscape Policy is

[109] Department of Water Resources Planning and Local Assistance Central District, Groundwater, *Groundwater Management*, http://www.cd.water.ca.gov/groundwater/gwab3030.cfm, accessed on May 14, 2018.

[110] Alameda County Flood Control and Water Conservation District, Zone 7, Decision to Become the Exclusive Groundwater Sustainability Agency For Livermore Valley Groundwater Basin (DWR Basin 2-10), file:///C:/Users/cgarcia/Downloads/153_Zone_7_Water_Agency_GSA_2017-01-20%20(1).pdf, accessed on May 10, 2018.

[111] UC Davis, Division of Agriculture and Natural Resources, 2014. Groundwater web page, http://groundwater.ucdavis.edu/SGMA/, accessed on June 26, 2017.

adopted in ACMC Chapter 17.64, Water Efficient Landscape. Pursuant to ACMC Sections 17.64.090 and 17.64.100, project applicants are required to submit a landscape plan that irrigation plan to the County for review to ensure that it meets California Code of Regulation requirements.

Assembly Bill 939

AB 939 established the California Integrated Waste Management Board and required all California counties to prepare integrated waste management plans. AB 939 also required all municipalities to divert 25 percent of their solid waste from landfill disposal by January 1, 1995. Fifty percent of the waste stream was to be diverted by the year 2000.

Existing Conditions

The existing single-family home located on the southwest corner of the project site has existing connections to PG&E, well water, and a septic tank. There is no active irrigation system on the project site. The proposed project would not disrupt these services. The proposed PV facility would not require connections to municipal water, sewer service, or natural gas. Water for project operation and irrigation would be replenished from a fire hydrant located approximately 2.8 miles southeast of the project site at the corner of Ames Street and Martingale Lane in the County of Alameda and brought in by truck and stored in an on-site tank. The fire hydrant is located within the Livermore Municipal Water service area. [112] The Livermore Municipal Water distribution system includes 147 miles of pipe; 2,758 valves; 1,578 hydrants, and 376 other appurtenances such as air release and blow-off valves.[113] All potable water would be delivered to the project site approximately 206 times per year via a 5,000 gallon water truck; no connections to municipal water or sewer service are proposed. According to the 2015 Urban Water Management Plan, the Livermore Municipal Water system has adequate water supplies to meet demand for normal years, single dry years, and multiple dry years.[114] The proposed PV facility would connect to an existing PG&E distribution line and generate electrical energy. Given the rural nature of the project site, stormwater runoff drains primarily through natural drainage swales and ditches.

Alameda County is primarily served by the Vasco Road Sanitary Landfill and the Altamont Landfill and Resource Recovery. The Vasco Road landfill has a permitted capacity of 2,518 tons of solid waste per day and a remaining permitted capacity of 7,379,000 cubic yard with an estimated "cease of operation date" of December 31, 2022.[115] The Altamont Landfill and Resource Recovery has a permitted capacity of 11,150 tons of solid waste per day and a remaining permitted capacity of 124,400,000 cubic yard with an estimated "cease of operation date" of January 1, 2025.[116]

[112] City of Livermore, Water Service, Service Area, http://www.cityoflivermore.net/images/pw/wrd/Map_of_Water_Suppliers.png, accessed on May 21, 2018.

[113] City of Livermore, Water Service, Water Distribution System Maintenance Program, http://www.cityoflivermore.net/citygov/pw/public_works_divisions/wrd/service/wrds_maint_prog.htm, accessed on May 21, 2018.

[114] Livermore Municipal Water, 2015 Urban Water Management Plan, Chapter 7, Water Supply Reliability, http://www.cityoflivermore.net/civicax/filebank/documents/14536, page 50, accessed on May 15, 2018.

[115] CalRecycle, Facility/Site Summary Details: Vasco Road Sanitary Landfill (01-AA-0010), http://www.calrecycle.ca.gov/SWFacilities/Directory/01-AA-0010/Detail/, accessed on May 15, 2018.

[116] CalRecycle, Facility/Site Summary Details: Altamont Landfill and Resource Recovery (01-AA-0009), http://www.calrecycle.ca.gov/SWFacilities/Directory/01-AA-0009/Detail/, accessed on May 15, 2018.

Discussion

a) , b), e) Would the proposed project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board, or require 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? Would the proposed project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

The proposed project, a solar PV facility, would not generate wastewater that would be treated by public wastewater treatment facilities and would not exceed the San Francisco Bay RWQCB wastewater standards. Accordingly, the proposed project would not exceed the capacity of a wastewater treatment provider nor require the construction of new water or wastewater treatment facilities or expansion of existing facilities. Therefore, there would be ***no impact***.

c) Would the proposed project require 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?

Given the rural nature of the project site, stormwater runoff drains primarily through natural drainage swales and ditches. The proposed project would not alter the drainage patterns on the project site and no connections to municipal water or sewer service are proposed. The proposed swales along the eastern boundary of the project site would also serve to retain runoff on the project site. In addition, as discussed in Section X, Hydrology and Water Quality, the proposed project would be required to comply with all of the requirements of the State GCP, including preparation of PRDs and submittal of a SWPPP to the SWRCB prior to the start of construction activities. In addition, ACMC Chapter 15.36, Grading Erosion and Sediment, requires projects within the County to ensure that the construction and eventual use of a graded site is in accordance with the county general plan and all applicable county ordinances.[117] Mandatory compliance with State and County regulations would ensure that impacts from erosion and siltation would be ***less than significant.***

d) Would the proposed project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Water for project operation and irrigation would be brought in by truck and stored in an on-site tank. All potable water would be replenished by fire hydrant and be delivered to the project site approximately 206 times per year via a 5,000 gallon water truck; no connections to municipal water or sewer service are proposed. The proposed project's total yearly water demand would be 1.03 million gallons per year (mgy).[118] The Applicant would purchase the water directly from the Livermore Municipal Water system which operates the fire hydrant and would be subject to a hydrant meter permit.[119] As discussed above, the Livermore Municipal Water system has adequate water supplies to meet demand for normal years,

[117] Alameda County Municipal Code, Title 15 (Building and Construction), Chapter 15.36 (Grading Erosion and Sediment).
[118] 5,000 gallons of water delivered 206 times per year = 1,030,000 gallons per year or 1.03 million gallons per year.
[119] Personal communication with David Lennier, Water/Recycled Water Supervisor on August 15, 2018.

single dry years, and multiple dry years.[120] In addition, the AQUABLOX® D-Raintanks® would serve to supplement some of the water needed for project operation and irrigation. Accordingly, the impact would be *less than significant.*

f) Would the proposed project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

The proposed project would not demolish any structures and the project components would all be delivered for on-site assembly. Refuse generated by project construction would be delivered to either the Vasco Road Sanitary Landfill or the Altamont Landfill and Resource Recovery both of which service Alameda County. Project operation and maintenance would generate a minimal amount of solid waste per year. As discussed above, both the Vasco Road Sanitary Landfill or the Altamont Landfill and Resource Recovery have adequate capacity to serve Alameda County. Therefore, the impact would be *less than significant*.

g) Would the proposed project comply with federal, state, and local statutes and regulations related to solid waste?

The proposed project would be required to comply with local, State, and federal solid waste regulations. As discussed in Criterion (f) of this section, the proposed project would not demolish any structures and refuse generated by project construction would be delivered to an existing landfill with adequate capacity. In addition, project operation would generate a minimal amount of solid waste. Therefore, the impact would be *less than significant*.

h) Would the proposed project result in a substantial increase in natural gas and electric service demands requiring new energy supply facilities and distribution infrastructure or capacity enhancing alternations to existing facilities?

The proposed project would not require connections to natural gas providers in the area. The proposed solar PV facility would connect to an existing PG&E distribution line and generate electrical energy that would be used by local consumers. Therefore, there would be *no impact*.

[120] Livermore Municipal Water, 2015 Urban Water Management Plan, Chapter 7, Water Supply Reliability, http://www.cityoflivermore.net/civicax/filebank/documents/14536, page 50, accessed on May 18, 2018.

XIX. Mandatory Findings of Significance

Would the proposed project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Does the project have the potential to 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?	❒	❒	■	❒
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a 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)?	❒	❒	■	❒
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	❒	❒	■	❒

Discussion

a) Does the proposed project have the potential to 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 IV, Biological Resources, potential impacts to special-status species, nesting birds, and jurisdictional wetlands would be mitigated to a less than significant level with implementation of Mitigation Measures BIO-1 to BIO-5. Mandatory compliance with the proposed mitigation measures would ensure that the proposed project would result in a ***less than significant*** impact to the environment and wildlife.

As discussed in Section V, Cultural Resources, there are no buildings currently listed or eligible for listing on the California Register of Historical Resources, no recorded archaeological sites, and no known paleontological resources located on the project site. In addition, implementation of Mitigation Measures CULT (b) to CULT (c) would ensure adequate protection of unknown previously undiscovered archaeological resources, paleontological resources, and human remains. As discussed in Section VI, Tribal Cultural Resources, compliance with existing federal, State, and local laws and regulations would protect unrecorded TCR's on the project site and implementation of Mitigation Measures CULT (b) and CULT (c)

would further reduce any impacts to TCR discovered on the project site. Therefore, mandatory compliance with the proposed mitigation measures would ensure that the proposed project would result in a *less than significant* impact on major periods of California history or prehistory.

b) Does the proposed project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a 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)?

Section 15355 of the CEQA Guidelines defines cumulative impacts as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. Cumulative impacts may result from individually minor, but collectively significant projects taking place over a period of time. CEQA Guidelines Section 15130(b) advises that a discussion of cumulative impacts should reflect both the severity of the impacts and the likelihood of their occurrence. To accomplish these two objectives, CEQA Guidelines Section 15130 permits two different methodologies for completion of a cumulative impact analysis:

- The 'list' approach permits the use of a list of past, present, and probable future projects producing related or cumulative impacts, including projects both within and outside the city; and
- The 'projections' approach allows the use of a summary of projections contained in an adopted plan or related planning document, such as a regional transportation plan, or in an EIR prepared for such a plan. The projections may be supplemented with additional information such as regional modeling.

This Initial Study relies on the list approach of past, present, and probable future projects in the vicinity of the project site that, when considered with the effects of the project, may result in cumulative effects. As shown in Table 5-11, Alameda County has identified two pending projects within the vicinity of the proposed project.

TABLE 5-11 CUMULATIVE PROJECTS WITHIN THE VICINITY OF THE PROPOSED PROJECT

Project Name/Location	Approximate Distance from Project	Project Type	Project Size	Time Frame
Aramis Renewable Energy Project (1815 Manning Road)	Directly west of the project site	PV Solar Facility	400 Acres	Mid 2019
Renewable Energy Project (2010 Manning Road)	1 mile	PV Solar Facility	28.3 Acres	Mid 2019

Source: Alameda County.

The discussion below addresses two aspects of cumulative impacts: (1) would the effects of the cumulative development result in a cumulatively significant impact on the resources in question and, if that cumulative impact is likely to be significant, (2) would the contributions to that impact from the project, which is the subject of this Initial Study, be cumulatively considerable. Per CEQA Guidelines Section 15064(h)(1), "cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past, current, and probable future projects. The CEQA Guidelines state that a Lead Agency has discretion to determine if a project's contribution to a significant cumulative impact is cumulatively considerable.

As discussed in the sections below, implementation of the proposed project would not be expected to contribute to or result in significant cumulative impacts. The following discussion addresses the potential for cumulative impacts for each impact area discussed in this Initial Study:

- Aesthetics: The cumulative impact for aesthetics of the proposed project combined with the adjacent and nearby pending solar projects, that together could result in a substantial adverse effect on a designated scenic vista or would result in a substantial degradation of the visual quality or character in the vicinity of the project site. As described in in Section I, Aesthetics, of this Initial Study, all new development is subject to the Countywide Scenic Route Element and ECAP Polices which direct the County to require the use of landscaping in both rural and urban areas to enhance the scenic quality of the area, screen undesirable views, and minimize the visual impact of development. The uniform application of these County regulations would ensure that all development in County is compatible with its surroundings upon approval. Additionally, subsequent CEQA review, if necessary, would give the County the opportunity to evaluate projects' potential impacts on scenic resources prior to approval. Given that the pending solar projects would be required to comply with County regulations and subsequent CEQA review, if necessary, cumulative impacts would be ***less than significant***.
- Agricultural and Forestry Resources: As described in Section II, Agriculture and Forestry Resources, of this Initial Study, the project site is used for grazing , and pursuant to the Williamson Act contract, the on-site grazing would continue during the life of and in the same space as the proposed project. In addition, the adopted Alameda County Uniform Rules for Williamson Act include photovoltaic power generation as a use compatible with on-site agricultural uses. Neither the project site nor the immediately surrounding areas contain forest land. Additionally, there are no lands within Alameda County zoned for or currently featuring timberland or timber production.[121] Accordingly, the project would not contribute to or result in a cumulative impact on farmland of forest land. In addition, future development within Alameda County would be subject to ECAP policies which seek to preserve agricultural lands. Therefore, implementation of the proposed project would have a ***less than significant*** cumulative impact with respect to agriculture and forestry resources.
- Air Quality: Emissions affecting air quality are by their nature regionally and globally cumulative impacts; therefore, the discussion in Section III, Air Quality of this Initial Study, evaluates cumulative conditions. As discussed in Section III, the San Francisco Bay Area Air Basin (SFBAAB) is currently designated as a nonattainment area for California and national O_3, California and national fine inhalable particular matter ($PM_{2.5}$), and California coarse inhalable particulate matter (PM_{10}) ambient air quality standards (AAQS). Any project that does not exceed or can be mitigated to less than the Bay Area Air Quality Management District (BAAQMD) significance levels will not result in a significant or cumulatively considerable impact. As discussed in in Section III, Air Quality of this Initial Study, the proposed project would not contribute to an existing air quality violation nor result in any criteria air pollutant emissions. In addition, implementation of Mitigation Measure AQ (b) would ensure that ground-disturbing activities associated with the proposed project would not generate a significant amount of fugitive dust. Therefore, the proposed project would not contribute to or result in a cumulative impact with respect to air quality. Cumulative impacts would be ***less than significant***.

[121] Alameda County, East County Area Plan, Land Use Diagram, page 136.

- Biological Resources: The potential impacts of a proposed project on biological resources tend to be site-specific, and the overall cumulative effect is dependent on the degree to which significant vegetation and wildlife resources are protected on a particular site. This includes preservation of well-developed native vegetation (e.g., marshlands, native grasslands, oak woodlands, riparian scrub and woodland, etc.), populations of special-status plant or animal species, and wetland features (including seasonal wetlands and drainages). Environmental review of pending development proposals within the vicinity of the project site should serve to ensure that important biological resources are identified, protected, and properly managed, and to prevent any significant adverse development-related impacts, including development for the remaining undeveloped lands in the surrounding area.

  As discussed in Section IV, Biological Resources, of this Initial Study, implementation of Mitigation Measures BIO (a-1) through BIO (a-4), and BIO (c) and required compliance with ECAP policies and the EACCS conservation strategy would ensure that potential impacts to special-status species, sensitive natural communities, or regulated wetlands would be less than significant. Accordingly, the proposed project would not contribute to a cumulative reduction of important wildlife habitat. Given that the pending solar projects would be required to mitigate potential impacts to special-status species, sensitive natural communities, and regulated wetlands within the project vicinity, cumulative impacts would be *less than significant*.

- Cultural Resources: The cumulative impact for cultural resources includes the development proposed project combined with effects of pending development proposals within the vicinity of the project site. Development of the proposed project, in conjunction with development on lands adjacent to the project site, has the potential to cumulatively impact cultural resources including archaeological and paleontological deposits, and human remains. As discussed in Section V, Cultural Resources, of this Initial Study, the proposed project would result in no impact to historic architectural resources. Implementation of Mitigation Measures CULT (b) through CULT (d) would ensure that the proposed project would have a have a less-than-significant impact to unknown archaeological resources, paleontological resources, and human remains. Accordingly, the proposed project would not create or contribute to a cumulative impact on cultural resources. Additionally, the existing federal, State, and ECAP policies serve to protect cultural resources in Alameda County. Other projects in Alameda County, including the pending development proposals within the vicinity of the project site, would be required to comply with these regulations to avoid impacts to historical, archaeological, paleontological resources, and human remains to the maximum extent practicable. Therefore, the proposed project would result in a *less than significant* cumulative impact with respect to cultural resources.

- Tribal Cultural Resources: Development of the proposed project, in conjunction with pending development projects on lands adjacent to the project site, has the potential to cumulatively impact TCRs within Alameda County. As discussed in Section VI, Tribal Cultural Resources, of this Initial Study, implementation of Mitigation Measures TCR (a-1) and TCR (a-2) would ensure that the proposed project would have a have a less-than-significant impact to unknown TCRs. Accordingly, the proposed project would not create or contribute to a cumulative impact on cultural resources. Additionally, the existing federal, State, and ECAP policies serve to protect TCRs in Alameda County. Other projects in Alameda County, including the pending development proposals within the vicinity of the project site, would be required to comply with these regulations to avoid impacts to TCRs to the maximum extent

practicable. Therefore, the proposed project would result in a ***less than significant*** cumulative impact with respect to TCRs.

- Geology and Soils: As discussed in Section VII, Geology and Soils, compliance with existing regulatory requirements such as the CBC would ensure that the proposed project would not result in a significant impact with respect to geology, and soils. In addition, in combination with pending development projects on lands adjacent to the project site, the proposed project would not change the geology or soil characteristics of the project area as a whole. Therefore, the proposed project would not contribute to or result in a cumulative impact with respect to geology and soils. Cumulative impacts would be ***less than significant***.
- Greenhouse Gas Emissions: Emissions contributing to the accumulation of greenhouse gas (GHG) emissions are by nature regionally and globally cumulative impacts; therefore, the discussion in Section VIII Greenhouse Gas Emissions, of this Initial Study, evaluates cumulative impacts. As discussed in Section VII, the proposed project would not exceed BAAQMD's bright-line screening threshold of 1,100 metric tons of carbon dioxide equivalent (MT CO_2e). Based on the GHG emission inventory, the proposed project would reduce greenhouse gases emitted into the atmosphere, and would further State climate change goals. Therefore, implementation of the proposed project would not substantially contribute to long-term cumulative GHG emissions and cumulative impacts would be ***less than significant.***
- Hazards and Hazardous Materials: As discussed in Section IX, Hazards and Hazardous Materials, of this Initial Study, the project site does not contain any known hazardous materials spills or storage. The operation phase of the proposed project could involve the use of common cleaning substances and PV facility maintenance products; however, these potentially hazardous substances would not be of a type or occur in sufficient quantities on-site to pose a significant hazard to public health and safety or the environment. The use of these materials would be subject to existing federal and State regulations. Therefore, the project would not contribute to a significant cumulative hazardous materials impact. In addition, the project site is not in the vicinity of a private airstrip or airport, located in a wildfire hazard area, or construction of any features that might impair the implementation of any relevant emergency operation plan. As such, the cumulative impacts from the proposed project would be ***less than significant***.
- Hydrology and Water Quality: As discussed in Section X, Hydrology and Water Quality, the proposed project would be required to comply with State and local policies that would reduce hydrology and water quality impacts to less-than-significant levels. All development projects within Alameda County must also comply with the ACMC Chapter 15.36, Grading Erosion and Sediment, which requires projects within the County to ensure that the construction and eventual use of a graded site is in accordance with the county general plan and all applicable county ordinances.[122] In addition, all projects that disturb over 1 acre or more would be required to prepare a Storm Water Pollution Prevention Plan (SWPPP) with erosion and sediment controls that address construction impacts.

  All cumulative projects would be subject to similar permit requirements. The water quality regulations implemented by the San Francisco Bay RWQCB take a basin-wide approach and consider water quality

[122] Alameda County Municipal Code, Title 15 (Building and Construction), Chapter 15.36 (Grading Erosion and Sediment).

impairment in a regional context. For example, the NPDES Construction Permit ties receiving water limitations and basin plan objectives to terms and conditions of the permit, and the MRP works with all municipalities to manage stormwater systems to be collectively protective of water quality. For these reasons, impacts to water quality for the proposed project are not cumulatively considerable and the cumulative impact would be *less than significant*.

- Land Use and Planning: As discussed in Section XI, Land Use, of this Initial Study, with approval of a conditional use permit pursuant to ACMC Section 17.06.040, the proposed project would not conflict with the adopted land use designation and zoning district. In addition, the proposed project would not physically divide an existing community, nor would the proposed project conflict with an adopted conservation plan. Therefore, the proposed project would not contribute to or result in a significant cumulative impact land use and planning impact. Cumulative impacts would be *less than significant*.
- Mineral Resources: As discussed in Section XII, Mineral Resources, of this Initial Study, project site is not identified as containing any mineral deposits. Therefore, the proposed project would have a *less than significant* cumulative impact with respect to mineral resources.
- Noise: Noise impacts discussed in Section XIII, Noise, of this Initial Study are evaluated in their cumulative context. The proposed solar PV facility would include various equipment items including modules (panels), inverters, transformers, a control center, and a meteorological station. However, the noise level estimation for the proposed project would be below the lowest noise limit provided by the ACMC. In addition, activity- and traffic-generated noise associated with project operation would result in negligible increases in roadway noise. Pending cumulative projects within the project area that could increase the community noise level would be subject to the same applicable standards are aimed at controlling stationary noise sources (primarily through the ACMC) and at managing traffic-related noise emissions would ensure that impacts would be less than significant. As discussed in Section XIII, the proposed project would not contribute to or result in a significant cumulative impact. Cumulative impacts would be *less than significant*.
- Population and Housing: Impacts of cumulative growth are considered in the context of their consistency with regional planning efforts. As discussed in Section XIV, Population and Housing, of this Initial Study, the proposed project would not involve new housing or employment centers; thus, the proposed project would not induce substantial population growth in the area. Pending cumulative projects within the project area would be required to demonstrate consistency with regional growth projections the same as the proposed project. Therefore, cumulative impacts would be *less than significant*.
- Public Services: The primary purpose of a public services impact analysis is to examine the impacts associated with physical improvements to public service facilities required to maintain acceptable service ratios, response times or other performance objectives. Public service facilities need improvements (i.e., construction, renovation or expansion) as demand for services increase. Increased demand is typically driven by increases in population. A significant environmental impact would occur if a proposed project would exceed the ability of public service providers to adequately serve residents, thereby requiring construction of new facilities or modification of existing facilities resulting in a physical impact to the environment. As discussed in Section XV, Public Services, the proposed project would not result in a net increase of residents at the project site or elsewhere in the region because it does not propose housing and is not a major regional employer. Therefore, the proposed

project would not impact fire or police protection services, schools or library services. Accordingly, the proposed project would not result in or contribute to a significant cumulative impact. Cumulative impacts would be ***less than significant***.

- Parks and Recreation: Increased demand for existing neighborhood and regional parks or other recreational facilities is typically driven by increases in population. As discussed in Section, XVI, Parks and Recreation, the proposed project would not result in a net increase of residents at the project site or elsewhere in the region because it does not include recreational facilities or require the construction or expansion of recreational facilities. Therefore, the proposed project would not contribute to the deterioration of existing facilities nor require the construction or expansion of existing recreational facilities. Accordingly, the proposed project would not result in or contribute to a significant cumulative impact. Cumulative impacts would be ***less than significant***.
- Transportation and Circulation: As discussed in Section XVII, Transportation and Circulation, project construction and operation would not impact CMP roadways nor substantially degrade the LOS on roadways and intersections such that it would exceed County standards. In addition, the proposed project would not place incompatible uses on area roadways, impact emergency access, or obstruct pedestrian, bicycle, or public transit facilities or services. Accordingly, the proposed project would not result in or contribute to a significant cumulative impact. Cumulative impacts would be ***less than significant***.
- Utilities ad Service Systems: Impacts evaluated under Section XVIII, Utilities and Service Systems, are assessed in their cumulative context. As discussed in Section XVIII, the utility service providers that serve the project site (PG&E, Livermore Municipal Water, Vasco Road Sanitary Landfill, and the Altamont Landfill and Resource Recovery) have adequate supply and capacity to serve the proposed project in addition to their other customers/users. Same as the proposed project, pending cumulative projects within the project area would be required to demonstrate there are adequate supplies and capacity to serve their projects in addition to the other users in the service provider's area. As shown in Section XVII, the proposed project would not result in or contribute to a significant cumulative impact. Therefore, cumulative impacts would be ***less than significant.***

c) *Does the proposed project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?*

As discussed above, the proposed project would not result in a significant impact that could not be mitigated to a less-than-significant level, thus the proposed project's environmental effects would be ***less than significant.***

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6. Organizations and Persons Consulted

This Initial Study was prepared by the following consultants and individuals:

LEAD AGENCY

ALAMEDA COUNTY

- Sonia Urzua, Senior Planner
- Damien Curry, Planner II

REPORT PREPARERS

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- Steve Noack, Principal, Principal-in-Charge
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- Nicole Vermillion, Associate Principal, Air Quality & Greenhouse Gas Emissions Manager
- Bob Mantey, Noise, Vibration & Acoustics Manger
- Fernando Sotelo, Senior Associate, Transportation Engineer
- Steve Bush, Associate, Engineer
- Rob Mazur, Assistant GIS Manager
- Alexis Whitaker, Scientist
- Grant Reddy, Graphics Design Specialist

ORGANIZATIONS AND PERSONS CONSULTED

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7. Mitigation Monitoring or Reporting Program

This Mitigation Monitoring or Reporting Program (MMRP) has been prepared for the Livermore Community Solar Farm project (proposed project or project). The purpose of the MMRP is to ensure the implementation of mitigation measures identified as part of the environmental review for the proposed project. As shown in Table 7-1, the MMRP includes the following information:

- The full text of the mitigation measures;
- The party responsible for implementing the mitigation measures;
- The timing for implementation of the mitigation measure;
- The agency responsible for monitoring the implementation; and
- The monitoring action and frequency.

Alameda County must adopt this MMRP, or an equally effective program, if it approves the proposed project with the mitigation measures that were adopted or made conditions of approval.

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 7-1 MITIGATION MONITORING OR REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
AESTHETICS					
AES (c): The project applicant shall ensure that the proposed landscape buffer is adequately irrigated and maintained throughout the life of the project. Should any of the proposed landscape plants not survive the initial planting or expire at any time during the life of the project, the applicant shall provide replacement plantings to properly conceal the proposed solar arrays.	Project applicant	Duration of project	Alameda County	Ensure that landscape buffer is adequately irrigated and maintained	Yearly
AIR QUALITY					
AQ (b): The applicant shall require their construction contractor to comply with the following BAAQMD Best Management Practices for reducing construction emissions of PM10 and PM2.5: ▪ Water all active construction areas at least twice daily or as often as needed to control dust emissions. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever possible. ▪ Apply water twice daily or as often as necessary to control dust, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites. ▪ Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer). ▪ Sweep public streets daily (with water sweepers using reclaimed water if possible) in the vicinity of the project site, or as often as needed, to keep streets free of visible soil material. ▪ Hydro-seed or apply non-toxic soil stabilizers to inactive construction areas. ▪ Enclose, cover, water twice daily, or apply non-toxic soil	Project applicant	During construction	Alameda County	Project approval	During scheduled construction site inspections

TABLE 7-1 MITIGATION MONITORING OR REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
binders to exposed stockpiles (e.g., dirt, sand). ▪ Limit vehicle traffic speeds on unpaved roads to 15 mph. ▪ Replant vegetation in disturbed areas as quickly as possible. ▪ Install sandbags or other erosion control measures to prevent silt runoff from public roadways.					
BIOLOGICAL RESOURCES					
BIO (a-1): Ensure Avoidance of California Tiger Salamander. The following measures shall be implemented to ensure avoidance of individual California tiger salamander (CTS) in the remote instance individuals were to disperse onto the site in the future in advance of or during construction: ▪ Amphibian exclusion fencing shall be installed 14 days prior to the start of construction and maintained until construction of the proposed project is complete. Such fencing shall run along the perimeter of the area of disturbance. Silt fence material may be used to also provide erosion control, however, per CTS standards, it must be at least 36 inches in height (at least 36 inches above ground and buried at least 6 inches below the ground) and stakes must be placed on the inside of the project (side on which work will take place). ▪ Pre-construction surveys for CTS shall be conducted prior to initiation of ground disturbing activities. Surveys are to be conducted by qualified biologists with experience surveying for CTS. Prior to initiating surveys, water trucks will spray the work area to influence emergence. Watering will occur at dusk, trucks will make a single pass, and the qualified biologist will survey the watered area for one hour following the spraying. If individuals are found, work shall not commence until they are moved out of the construction zone to an area approved by the California Department of Fish and Wildlife (CDFW). ▪ A qualified biologist with experience surveying for CTS shall be present during initial ground disturbing activities.	Project applicant	Prior to commencement of ground disturbing activities	Alameda County and the Department of Fish and Wildlife	Survey review and approval	Prior to construction and during construction activities if California tiger Salamander is found to occupy the site

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 7-1 MITIGATION MONITORING OR REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
▪ To avoid entrapment of animals during construction, pipes or similar structures shall be capped if stored overnight. Construction personnel shall inspect open trenches at the beginning and end of each workday for trapped CTS individuals. If individuals are found, an approved biologist shall be relocated by a qualified biologist. ▪ Tightly woven fiber netting or similar material shall be used for erosion control or other purposes to ensure amphibians do not get trapped. Plastic mono-filament netting (erosion control matting), rolled erosion control products, or similar material shall not be used.					
BIO (a-2): Ensure Avoidance of California Red-legged Frog. The following measures shall be implemented in locations within 100 feet of any drainage or seasonal wetland on the site to ensure avoidance of individual California red-legged frog (CRLF) in the remote instance individuals were to disperse onto the site in the future in advance of or during construction: ▪ Amphibian exclusion fencing shall be installed 14 days prior to the start of construction and maintained until construction of the proposed project is complete. Such fencing shall run along the perimeter of the area of disturbance. Silt fence material may be used to also provide erosion control, however, per CRLF standards, it must be at least 36 inches in height (at least 36 inches above ground and buried at least 6 inches below the ground) and stakes must be place on the inside of the project (side on which work will take place). ▪ Pre-construction surveys for CRLF shall be conducted prior to initiation of project activities (including fence installation) and within 48 hours of the start of ground disturbance activities following completion of exclusion fence installation. Surveys are to be conducted by qualified biologists with experience surveying for CRLF. ▪ All workers shall be trained by the qualified biologist to	Project applicant	Prior to commencement of ground disturbing activities	Alameda County and the Department of Fish and Wildlife	Survey review and approval	Prior to construction and during construction activities if California red-legged frog is found to occupy the site

TABLE 7-1 MITIGATION MONITORING OR REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
understand the remote potential for occurrence of this listed species, need to avoid any potential inadvertent take, and process to follow if a frog is encountered, that all work must stop and the qualified biologist must determine whether it is CRLF before work proceeds. ▪ No earth disturbing activities shall take place during rain events when there is potential for accumulation greater than 0.25 inch in a 24-hour period. In addition, no earth disturbing activities shall occur for 48 hours following rain events in which 0.25 inch of rain accumulation within 24 hours. ▪ Tightly woven fiber netting or similar material shall be used for erosion control or other purposes to ensure amphibians do not get trapped. Plastic mono-filament netting (erosion control matting), rolled erosion control products, or similar material shall not be used.					
BIO (a-3): A qualified botanist shall conduct appropriately-timed rare plant surveys during late April and early May to confirm absence of any special-status plant species on the site. The survey shall focus on the special-status plant species considered to have a remote probability for occurrence on the project site. The surveys shall be completed and a report of findings submitted to the County before the onset of any initial ground-disturbing activity or construction associated with project implementation. If any special-status plant species are encountered, then any occurrence(s) shall be avoided or potential impacts adequately mitigated as part of potential future project development. The qualified botanist shall develop and implement a Special-Status Plant Species Mitigation and Monitoring Program (SSPSMMP). The SSPSMMP shall only be required if a listed species or those with a ranking of 1A, 1B or 2 of the California Native Plant Society (CNPS) Inventory are encountered during the preconstruction survey. Potential impacts on any species with a ranking of 3 and 4 of the CNPS Inventory would not be considered significant and no additional mitigation would be	Project applicant	Prior to commencement of ground disturbing activity	Alameda County and the Department of Fish and Wildlife	Survey review and approval	Prior to construction and during construction activities if special-status plant species are found to occupy the site

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 7-1 MITIGATION MONITORING OR REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
required for these species if encountered during the systematic survey(s). The SSPMMP shall be prepared in consultation with the CDFW and shall be approved by Alameda County prior to any initial ground-disturbing activity or construction. The SSPMMP shall be based on the status and vulnerability of the species present, with avoidance of all or a majority of any populations on the site the preferred method of mitigation. Where complete or even partial avoidance of any special-status plant populations on the site is considered infeasible, options for mitigation may include a program to salvage and reestablish the population at an alternative, suitable location. Details of any salvage and habitat recreation effort shall include the following criteria and performance standards measures may include: ▪ Collection of seeds during the appropriate developmental stage of the plan. ▪ Procedures for sowing techniques appropriate to the life cycle of the plant. ▪ Preparation of a maintenance and monitoring plan specific to the environmental conditions necessary for survival of the new population. Maintenance and monitoring shall be provided for a minimum of five years to determine success of re-seeding and habitat creation, and need for additional preservation. ▪ Identification of funding sources to provide implementation of the maintenance and monitoring plan in consultation with the qualified plant ecologist, landscape architect, and civil engineer. ▪ In addition, preservation of another existing occurrence of the affected special-status plant species shall be required if monitoring indicates that the reestablishment efforts have not been successful after five years. The preservation program shall provide for permanent protection of a different existing population in Alameda County, which is					

TABLE 7-1 MITIGATION MONITORING OR REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
equal or larger in size than that encountered on the site (minimum 1:1 replacement), through land acquisition or use of a conservation easement. Any off-site mitigation lands shall include establishment of a management endowment as necessary to provide for long-term management of the preserved population.					
BIO (a-4): Ground disturbing activities shall be performed in compliance with the Migratory Bird Treaty Act and relevant sections of the California Department of Fish and Wildlife (CDFW) code to avoid loss of nests in active use. This shall be accomplished by scheduling ground disturbing activities outside of the bird nesting season (which occurs from February 1 to August 31) to avoid possible impacts on nesting birds. Alternatively, ground disturbing activities cannot be scheduled during the non-nesting season (September 1 to January 31), a pre-construction nesting survey shall be conducted. The pre-construction nesting survey shall include the following: ▪ A qualified biologist (Biologist) shall conduct a pre-construction nesting bird (both passerine and raptor) survey within seven calendar days prior to ground disturbing activities. ▪ If no nesting birds or active nests are observed, no further action is required ground disturbing activities shall occur within seven calendar days of the survey. ▪ If any active nests are encountered, the Biologist shall determine an appropriate disturbance-free buffer zone to be established around the nest location(s) until the young have fledged. Buffer zones vary depending on the species (i.e., typically 75 to 100 feet for passerines and 300 feet for raptors) and other factors such as ongoing disturbance in the vicinity of the nest location. If necessary, the dimensions of the buffer zone shall be determined in consultation with the CDFW. ▪ Orange construction fencing, flagging, or other marking system shall be installed to delineate the buffer zone	Project applicant	Prior to commencement of ground disturbing activity	A qualified biologist approved by Alameda County	Survey review and approval, and throughout timeframes in the mitigation measure as necessary	Prior to construction and during seasonal timeframes outlined in the mitigation measure

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 7-1 MITIGATION MONITORING OR REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
around the nest location(s) within which no construction-related equipment or operations shall be permitted. Continued use of existing facilities such as surface parking and site maintenance may continue within this buffer zone. ▪ Construction activities shall be restricted from the buffer zone until the Biologist has determined that young birds have fledged and the buffer zone is no longer needed. ▪ A survey report of findings verifying that any young have fledged shall be submitted by the Biologist for review and approval by the County prior to initiation of any construction activities within the buffer zone. Following written approval by the County construction within the nest-buffer zone may proceed.					
BIO (c): The project applicant shall realign the proposed perimeter swale to provide a 25-foot buffer between the potential wetland and the proposed swale. Prior to the initiation of ground disturbing activities, temporary orange construction fencing shall be installed around the potential wetland features to prohibit inadvertent damage to the potential wetland features during construction activities.	Project applicant	Prior to ground disturbing activity	Alameda County	Survey review and approval	Prior to construction and during construction activities
CULTURAL RESOURCES					
CULT (b): If any prehistoric or historic subsurface cultural resources are discovered during ground-disturbing activities, all work within 50 feet of the resources shall be halted and a qualified archaeologist shall be consulted to assess the significance of the find according to CEQA Guidelines Section 15064.5. If any find is determined to be significant, representatives from the County and the archaeologist would meet to determine the appropriate avoidance measures or other appropriate mitigation. All significant cultural materials recovered shall be, as necessary and at the discretion of the consulting archaeologist, subject to scientific analysis, professional museum curation, and documentation according to current professional standards. In considering any suggested mitigation proposed by the consulting archaeologist	Project applicant	During construction	Qualified archaeologist approved by Alameda County	Survey review and approval	Once at time of discovery and again, if determined further assessment is required as specified in this mitigation measure

TABLE 7-1 MITIGATION MONITORING OR REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
to mitigate impacts to historical resources or unique archaeological resources, the County shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, proposed project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g., data recovery) would be instituted. Work may proceed on other parts of the project site while mitigation for historical resources or unique archaeological resources is being carried out.					
CULT (c): In the event that fossils or fossil-bearing deposits are discovered during construction, excavations within 50 feet of the find shall be temporarily halted or diverted. The contractor shall notify a qualified paleontologist to examine the discovery. The paleontologist shall document the discovery as needed, in accordance with Society of Vertebrate Paleontology standards (Society of Vertebrate Paleontology 1995), evaluate the potential resource, and assess the significance of the finding under the criteria set forth in CEQA Guidelines Section 15064.5. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the project proponent determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project based on the qualities that make the resource important. The plan shall be submitted to the County for review and approval prior to implementation.	Project applicant	During construction	Qualified paleontologist approved by Alameda County	Survey review and approval	Once at time of discovery and again, if determined further assessment is required as specified in this mitigation measure
CULT (d): Procedures of conduct following the discovery of human remains have been mandated by Health and Safety Code Section 7050.5, Public Resources Code Section 5097.98 and the California Code of Regulations Section 15064.5(e) (CEQA). According to the provisions in CEQA, if human remains are encountered at the site, all work in the immediate vicinity of the discovery shall cease and necessary steps to ensure the integrity of the immediate area shall be taken. The Alameda County Coroner shall be notified immediately. The	Project applicant	During construction	Alameda County Coroner	Survey review and approval	Once at time of discovery and again, if determined further assessment is required as specified in this mitigation measure

MITIGATION MONITORING AND REPORTING PROGRAM

TABLE 7-1 MITIGATION MONITORING OR REPORTING PROGRAM

Mitigation Measures	Party Responsible for Implementation	Implementation Timing	Agency Responsible for Monitoring	Monitoring Action	Monitoring Frequency
Coroner shall then determine whether the remains are Native American. If the Coroner determines the remains are Native American, the Coroner shall notify the Native American Heritage Commission (NAHC) within 24 hours, who will, in turn, notify the person the NAHC identifies as the Most Likely Descendant (MLD) of any human remains. Further actions shall be determined, in part, by the desires of the MLD. The MLD has 48 hours to make recommendations regarding the disposition of the remains following notification from the NAHC of the discovery. If the MLD does not make recommendations within 48 hours, the owner shall, with appropriate dignity, reinter the remains in an area of the property secure from further disturbance. Alternatively, if the owner does not accept the MLD's recommendations, the owner or the descendent may request mediation by the NAHC.					
TRIBAL CULTURAL RESOURCES					
TCR (a-1): Implement Mitigation Measure CULT (b).	Project applicant	During construction	Qualified archaeologist approved by Alameda County	Survey review and approval	Once at time of discovery and again, if determined further assessment is required as specified in this mitigation measure
TCR (a-2): Implement Mitigation Measure CULT (c)	Project applicant	During construction	Qualified paleontologist approved by Alameda County	Survey review and approval	Once at time of discovery and again, if determined further assessment is required as specified in this mitigation measure


COUNTY OF ALAMEDA
CALIFORNIA

APPENDIX C:
HEALTH RISK ASSESSMENT

1. Health Risk Assessment

1.1 CONSTRUCTION HEALTH RISK ASSESSMENT

The proposed project would construct a solar photovoltaic facility on an approximately 71-acre site. The project site is located at 4871 North Livermore Avenue in unincorporated Alameda County, California. The following provides the background methodology used for the construction health risk assessment for the proposed project.

The latest version of the Bay Area Air Quality Management District (BAAQMD) CEQA Air Quality Guidelines requires projects to evaluate the impacts of construction activities on sensitive receptors (BAAQMD, 2017). Project construction is anticipated to take place starting at the beginning of August 2018 and be completed by the end of July 2019 (approximately 261 work days). The nearest sensitive receptors to the project site include the single-family residence at the intersection of North Livermore Avenue and May School Road, as well as single-family residences along Bel Roma Road. The BAAQMD has developed *Screening Tables for Air Toxics Evaluation During Construction* (2017) that evaluate construction-related health risks associated with residential, commercial, and industrial projects. According to the screening tables, the residences are closer than the distance of 100 meters (328 feet) that would screen out potential health risks and therefore could be potentially impacted from the proposed construction activities. As a result, a site-specific construction health risk assessment (HRA) has been prepared for the proposed project. This HRA considers the health impact to off-site sensitive receptors (children at the nearby residences) from construction emissions at the project site, including diesel equipment exhaust (diesel particulate matter or DPM) and particulate matter less than 2.5 microns ($PM_{2.5}$).

It should be noted that these health impacts are based on conservative (i.e., health protective) assumptions. The United States Environmental Protection Agency (USEPA, 2005) and the Office of Environmental Health Hazard Assessment (OEHHA, 2015) note that conservative assumptions used in a risk assessment are intended to ensure that the estimated risks do not underestimate the actual risks. Therefore, the estimated risks may not necessarily represent actual risks experienced by populations at or near a site. The use of conservative assumptions tends to produce upper-bound estimates of exposure and thus risk.

For residential-based receptors, the following conservative assumptions were used:

- It was assumed that maximum-exposed off-site residential receptors (both children and adults) stood outdoors and are subject to DPM at their residence for 8 hours per day, and approximately 260 construction days per year. In reality, California residents typically will spend on average 2 hours per day outdoors at their residences (USEPA, 2011). This would result in lower exposures to construction related DPM emissions and lower estimated risk values.

- The calculated risk for infants from third trimester to age 2 is multiplied by a factor of 10 to account for early life exposure and uncertainty in child versus adult exposure impacts (OEHHA, 2015).

1.2 METHODOLOGY AND SIGNIFICANCE THRESHOLDS

For this HRA, the BAAQMD significance thresholds were deemed to be appropriate and the thresholds that were used for this project are shown below:

- Excess cancer risk of more than 10 in a million
- Non-cancer hazard index (chronic or acute) greater than 1.0
- Incremental increase in average annual $PM_{2.5}$ concentration of greater than 0.3 $\mu g/m^3$

The methodology used in this HRA is consistent with the following BAAQMD and the OEHHA guidance documents:

- BAAQMD, 2017. *California Environmental Quality Act Air Quality Guidelines*. May 2017.
- BAAQMD, 2010. *Screening Tables for Air Toxics Evaluation During Construction.* May 2010.
- BAAQMD, 2012. *Recommended Methods for Screening and Modeling Local Risks and Hazards*. Version 3.0. May 2012.
- OEHHA. 2015. *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments.* February, 2015.

Potential exposures to DPM and $PM_{2.5}$ from proposed project construction were evaluated for off-site sensitive receptors in close proximity to the site. Pollutant concentrations were estimated using an air dispersion model, and excess lifetime cancer risks and chronic non-cancer hazard indexes were calculated. These risks were then compared to the significance thresholds adopted for this HRA.

1.3 CONSTRUCTION EMISSIONS

Construction emissions were calculated as average daily emissions in pounds per day, using the proposed construction schedule and the latest version of California Emissions Estimation Model, known as CalEEMod Version 2016.3.2 (CAPCOA, 2016). DPM emissions were based on the CalEEMod construction runs, using annual exhaust PM_{10} construction emissions presented in pounds (lbs) per day. The $PM_{2.5}$ emissions were taken from the CalEEMod output for exhaust $PM_{2.5}$ also presented in lbs per day.

The project was assumed to take place over 12 months (261 work days) from beginning of August 2018 to July 2019. The average daily emission rates from construction equipment used during the proposed project were determined by dividing the annual average emissions for each construction year by the number of construction days per year for each calendar year of construction (i.e., 2018 and 2019). The off-site hauling emission rates were adjusted to evaluate localized emissions from the 0.55-mile haul route within 1,000 feet of the project site. The CalEEMod construction emissions output and emission rate calculations are provided in Appendix A of the HRA.

1.4 DISPERSION MODELING

To assess the impact of emitted compounds on sensitive receptors near the project, air quality modeling using the AERMOD atmospheric dispersion model was performed. The model is a steady state Gaussian plume model and is an approved model by BAAQMD for estimating ground level impacts from point and fugitive sources in simple and complex terrain. The on-site construction emissions for the project were modeled as poly-area sources. The off-site mobile sources were modeled as adjacent line volume sources. The model requires additional input parameters, including chemical emission data and local meteorology. Inputs for the construction emission rates are those described in Section 1.3. Meteorological data obtained from the BAAQMD for the nearest representative meteorological station (Livermore Municipal Airport) with the five latest available years (2009 to 2013) of record were used to represent local weather conditions and prevailing winds.

The modeling analysis also considered the spatial distribution and elevation of each emitting source in relation to the sensitive receptors. To accommodate the model's Cartesian grid format, direction-dependent calculations were obtained by identifying the Universal Transverse Mercator (UTM) coordinates for each source location. In addition, digital elevation model (DEM) data for the area were obtained and included in the model runs to account for complex terrain. An emission release height of 4.15 meters was used as representative of the stack exhaust height for off-road construction equipment and diesel truck traffic, and an initial vertical dispersion parameter of 1.93 m was used, per California Air Resources Board (CARB) guidance (2000).

To determine contaminant impacts during construction hours, the model's Season-Hour-Day (HRDOW) scalar option was invoked to predict flagpole-level concentrations (1.5 m for ground-floor receptors) for construction emissions generated between the hours of 7:00 AM and 4:00 PM with a 1-hour lunch break. In addition, a scalar factor was applied to the risk calculations to account for the number of days residents are exposed to construction emissions per year.

For all modeling runs, a unit emission rate of 1 gram per second was used. The unit emission rates were proportioned over the poly-area sources for on-site construction emissions, and divided between the volume sources for off-site hauling emissions. The maximum modeled concentrations from the output files were then multiplied by the emission rates calculated in Appendix A to obtain the maximum flagpole-level concentrations at the off-site maximum exposed receptors (MER). The off-site MER is a residence along Bel Roma Road to the east of the project site. The MER location is the receptor location associated with the maximum predicted AERMOD concentrations from the on-site emission source. The calculated on-site emission rates are approximately 2 to 3 orders of magnitude higher than the calculated off-site emission rates (see Appendix A). Therefore, the maximum concentrations associated with the on-site emission sources produce the highest overall ground-level MER concentrations and, consequently, higher calculated health risks.

The air dispersion model output for the emission sources is presented in Appendix B. The model output DPM and $PM_{2.5}$ concentrations from the construction emission sources are provided in Appendix C.

1.5 RISK CHARACTERIZATION

1.5.1 Carcinogenic Chemical Risk

A threshold of ten in a million ($10x10^{-6}$) has been established as a level posing no significant risk for exposures to carcinogens. Health risks associated with exposure to carcinogenic compounds can be defined in terms of the probability of developing cancer as a result of exposure to a chemical at a given concentration. The cancer risk probability is determined by multiplying the chemical's annual concentration by its cancer potency factor (CPF), a measure of the carcinogenic potential of a chemical when a dose is received through the inhalation pathway. It is an upper-limit estimate of the probability of contracting cancer as a result of continuous exposure to an ambient concentration of one microgram per cubic meter ($\mu g/m^3$) over a lifetime of 70 years.

Recent guidance from OEHHA recommends a refinement to the standard point estimate approach with the use of age-specific breathing rates and age sensitivity factors (ASFs) to assess risk for susceptible subpopulations such as children. For the inhalation pathway, the procedure requires the incorporation of several discrete variates to effectively quantify dose for each age group. Once determined, contaminant dose is multiplied by the cancer potency factor in units of inverse dose expressed in milligrams per kilogram per day $(mg/kg/day)^{-1}$ to derive the cancer risk estimate. Therefore, to accommodate the unique exposures associated with the residential receptors, the following dose algorithm was used.

$$\text{Dose}_{\text{AIR,per age group}} = (C_{\text{air}} \times \text{EF} \times [\frac{\text{BR}}{\text{BW}}] \times \text{A} \times \text{CF})$$

Where:

Dose_{AIR}	=	dose by inhalation (mg/kg-day), per age group
C_{air}	=	concentration of contaminant in air ($\mu g/m^3$)
EF	=	exposure frequency (number of days/365 days)
BR/BW	=	daily breathing rate normalized to body weight (L/kg-day)
A	=	inhalation absorption factor (default = 1)
CF	=	conversion factor ($1x10^{-6}$, µg to mg, L to m^3)

The inhalation absorption factor (A) is a unitless factor that is only used if the cancer potency factor included a correction for absorption across the lung. For this assessment, the default value of 1 was used. For residential receptors, the exposure frequency (EF) of 0.96 is used to represent 350 days per year to allow for a two week period away from home each year (OEHHA, 2015). The 95th percentile daily breathing rates (BR/BW), exposure duration (ED), age sensitivity factors (ASFs), and fraction of time at home (FAH) for the various age groups are provided herein:

Age Groups	BR/BW (L/kg-day)	ED	ASF	FAH
Third trimester	361	0.25	10	0.85
0-2 age group	1,090	2	10	0.85
2-9 age group	861	7	3	0.72
2-16 age group	745	14	3	0.72

16-30 age group	335	14	1	0.73
16-70 age group	290	54	1	0.73

For construction analysis, the exposure duration spans the length of construction (e.g. 261 work days). As the length of construction is less than 2 years, only the third trimester and 0-2 age bins apply to the construction analysis for the off-site residential receptors.

To calculate the overall cancer risk, the risk for each appropriate age group is calculated per the following equation:

$$\text{Cancer Risk}_{\text{AIR}} = \text{Dose}_{\text{AIR}} \times \text{CPF} \times \text{ASF} \times \text{FAH} \times \frac{\text{ED}}{AT}$$

Where:

Dose_{AIR}	=	dose by inhalation (mg/kg-day), per age group
CPF	=	cancer potency factor, chemical-specific $(\text{mg/kg-day})^{-1}$
ASF	=	age sensitivity factor, per age group
FAH	=	fraction of time at home, per age group (for residential receptors only)
ED	=	exposure duration (years)
AT	=	averaging time period over which exposure duration is averaged (70 years)

The CPFs used in the assessment were obtained from OEHHA guidance. The excess lifetime cancer risks during the construction period to the maximally exposed resident were calculated based on the factors provided above. The cancer risks for each age group are summed to estimate the total cancer risk for each toxic chemical species. For purposes of this assessment and as stated, the calculated residential cancer risks associated with construction activities are based on the 3rd trimester and 0-2 year old age groups. The final step converts the cancer risk in scientific notation to a whole number that expresses the cancer risk in "chances per million" by multiplying the cancer risk by a factor of $1x10^6$ (i.e. 1 million).

The calculated results are provided in Appendix C.

1.5.2 Non-Carcinogenic Hazards

An evaluation of the potential non-cancer effects of chronic chemical exposures was also conducted. Adverse health effects are evaluated by comparing the annual receptor level (flagpole) concentration of each chemical compound with the appropriate reference exposure limit (REL). Available RELs promulgated by OEHHA were considered in the assessment.

To quantify non-carcinogenic impacts, the hazard index approach was used. The hazard index assumes that chronic sub-threshold exposures adversely affect a specific organ or organ system (toxicological endpoint). For each discrete chemical exposure, target organs presented in regulatory guidance were used. To calculate the hazard index, each chemical concentration or dose is divided by the appropriate toxicity value. For compounds affecting the same toxicological endpoint, this ratio is summed. Where the total equals or exceeds one, a health hazard is presumed to exist.

The chronic hazard analysis for DPM is provided in Appendix C. The calculations contain the relevant exposure concentrations and corresponding reference dose values used in the evaluation of non-carcinogenic exposures.

1.5.3 Criteria Pollutants

The BAAQMD has recently incorporated $PM_{2.5}$ into the District's CEQA significance thresholds due to recent studies that show adverse health impacts from exposure to this pollutant. An incremental increase of greater than 0.3 $\mu g/m^3$ for the annual average $PM_{2.5}$ concentration is considered to be a significant impact.

1.6 CONSTRUCTION HRA RESULTS

The calculated results are provided in Appendix C and the results are summarized in Table 1.

TABLE 1. CONSTRUCTION RISK SUMMARY - UNMITIGATED

Receptor	Cancer Risk (per million)	Chronic Hazards	$PM_{2.5}$ ($\mu g/m^3$)
Maximum Exposed Receptor – Offsite Residence	7.8	0.028	0.07
BAAQMD Threshold	10	1.0	0.30
Exceeds Threshold?	No	No	No

Note: Cancer risk calculated using 2015 OEHHA HRA guidance.
Source: Lakes AERMOD View, 9.5 (2017).

Cancer risk for the maximum exposed receptor (MER) from project-related construction emissions was calculated to be 7.8 in a million, which would not exceed the 10 in a million significance threshold. In accordance with the latest 2015 OEHHA guidance, the calculated total cancer risk conservatively assumes that the risk for the MER consists of a pregnant woman in the third trimester that subsequently gives birth to an infant during the approximately 12-month construction period; therefore, all calculated risk values were multiplied by a factor of 10. In addition, it was conservatively assumed that the residents were outdoors 8 hours a day, 260 construction days per year and exposed to all of the daily construction emissions.

For non-carcinogenic effects, the chronic hazard index identified for each toxicological endpoint totaled less than one for all the off-site sensitive receptors. Therefore, chronic non-carcinogenic hazards are within acceptable limits. The highest $PM_{2.5}$ annual concentration of 0.07 is below the BAAQMD significance threshold of 0.3 micrograms per cubic meter ($\mu g/m^3$). Therefore, the Project would not expose sensitive receptors to substantial concentrations of air pollutant emissions during construction and impacts would be *less than significant*.

2. References

Bay Area Air Quality Management District. 2017. *California Environmental Quality Act Air Quality Guidelines.*

———. 2012. *Recommended Methods for Screening and Modeling Local Risks and Hazards.* Version 3.0. Dated May 2012.

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California Air Resources Board (CARB). 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.*

———. 2015. *Meteorological Files.* https://www.arb.ca.gov/toxics/harp/metfiles2.htm

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United States Environmental Protection Agency (USEPA). 2011. *Exposure Factors Handbook 2011 Edition (Final).* EPA/600/R-09/052F, 2011.

_____. 2005. *Guideline on Air Quality Models* (Revised). EPA-450/2-78-027R.

Appendix A. Emission Rate Calculations

Construction Emissions - DPM and PM2.5
Input to Risk Tables

On-site Construction Emissions		DPM [1]	$PM_{2.5}$ [2]
2018 On-site Emissions	Average Daily Emissions (lbs/day)	1.77	1.65
	Average Daily Emissions (lbs/hr)	2.21E-01	2.06E-01
	Emission Rate (g/s)	2.78E-02	2.60E-02
2019 On-site Emissions	Average Daily Emissions (lbs/day)	1.70	1.58
	Average Daily Emissions (lbs/hr)	2.12E-01	1.98E-01
	Emission Rate (g/s)	2.67E-02	2.49E-02

Note: Emissions assumed to be evenly distributed over entire construction phase area.

Off-site Construction Emissions		DPM [1]	$PM_{2.5}$ [2]
2018 Off-site Emissions	Haul Length Daily Emissions (lbs/day)	0.007	0.006
	Hauling Emissions w/in 1,000 ft (lbs/day) [3]	1.82E-04	1.77E-04
	Emission Rate (lbs/hr)	2.27E-05	2.21E-05
	Emission Rate (g/s)	2.86E-06	2.78E-06
2019 Off-site Emissions	Haul Length Daily Emissions (lbs/day)	0.006	0.005
	Hauling Emissions w/in 1,000 ft (lbs/day) [3]	1.59E-04	1.48E-04
	Emission Rate (lbs/hr)	1.99E-05	1.85E-05
	Emission Rate (g/s)	2.51E-06	2.34E-06

Note: Emissions evenly distributed over 82 modeled volume sources.

Hours per work day (7:00 AM to 4:00 PM, 1-hour of breaks) [4] 8 hours

	2018-2019	Workdays	Risk Scalar [5]
Total construction days per year	2018	109	0.42
	2019	152	0.58

	Phase 1	Phase 2
Number of Haul Trips	440	454
Hauling Length (miles)	20	20
Average Hauling Length (miles)	**20.0**	
Haul Length within 1,000 ft of Site (mile) [3]	**0.55**	

[1] DPM emissions taken as PM_{10} exhaust emissions from CalEEMod average daily emissions.

[2] $PM_{2.5}$ emissions taken as $PM_{2.5}$ exhaust emissions from CalEEMod average daily emissions.

[3] Emissions from CalEEMod offsite average daily emissions, which is based on proportioned haul truck trip distance of 20 miles are proportioned to evaluate emissions from the 0.55-mile route within 1,000 of the project site.

[4] Work hours applied in By Hour/Day (HRDOW) variable emissions module in air dispersion model (see App B - Air Dispersion Model Output Files).

[5] Residential risk scalars determined for each year of construction to adjust receptor exposures to the exposure durations for each construction year (see App C - Risk Calculations).

Appendix B. Air Dispersion Model Output

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**
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**
** AERMOD Input Produced by:
** AERMOD View Ver. 9.5.0
** Lakes Environmental Software Inc.
** Date: 4/18/2018
** File: C:\Lakes\AERMOD View\Livermore_Solar_Grid\Livermore_Solar_Grid.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE Livermore Solar Farm
   MODELOPT DFAULT CONC
   AVERTIME PERIOD
   POLLUTID OTHER
   FLAGPOLE 1.50
   RUNORNOT RUN
   ERRORFIL Livermore_Solar_Grid.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION PAREA1       AREAPOLY   608738.041  4177456.773      168.000
** DESCRSRC Onsite
```

```
** ------------------------------------------------------------------
** Line Source Represented by Adjacent Volume Sources
** LINE VOLUME Source ID = SLINE1
** DESCRSRC Offsite
** PREFIX
** Length of Side = 10.67
** Configuration = Adjacent
** Emission Rate = 1.0
** Vertical Dimension = 4.15
** SZINIT = 1.93
** Nodes = 2
** 608376.169, 4178242.130, 176.00, 4.15, 4.96
** 608380.225, 4177363.426, 169.00, 4.15, 4.96
** ------------------------------------------------------------------
** End of LINE VOLUME Source ID = SLINE1
** Source Parameters **
   SRCPARAM PAREA1       4.0827E-06     4.150         6     1.930
   AREAVERT PAREA1       608738.041 4177456.773 608739.029 4178239.572
   AREAVERT PAREA1       608397.048 4178242.537 608395.072 4177660.379
   AREAVERT PAREA1       608518.619 4177656.426 608514.666 4177450.842
** LINE VOLUME Source ID = SLINE1
   SRCPARAM L0000001     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000002     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000003     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000004     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000005     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000006     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000007     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000008     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000009     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000010     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000011     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000012     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000013     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000014     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000015     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000016     0.012195122      4.15      4.96      1.93
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SRCPARAM L0000017     0.012195122      4.15      4.96      1.93
SRCPARAM L0000018     0.012195122      4.15      4.96      1.93
SRCPARAM L0000019     0.012195122      4.15      4.96      1.93
SRCPARAM L0000020     0.012195122      4.15      4.96      1.93
SRCPARAM L0000021     0.012195122      4.15      4.96      1.93
SRCPARAM L0000022     0.012195122      4.15      4.96      1.93
SRCPARAM L0000023     0.012195122      4.15      4.96      1.93
SRCPARAM L0000024     0.012195122      4.15      4.96      1.93
SRCPARAM L0000025     0.012195122      4.15      4.96      1.93
SRCPARAM L0000026     0.012195122      4.15      4.96      1.93
SRCPARAM L0000027     0.012195122      4.15      4.96      1.93
SRCPARAM L0000028     0.012195122      4.15      4.96      1.93
SRCPARAM L0000029     0.012195122      4.15      4.96      1.93
SRCPARAM L0000030     0.012195122      4.15      4.96      1.93
SRCPARAM L0000031     0.012195122      4.15      4.96      1.93
SRCPARAM L0000032     0.012195122      4.15      4.96      1.93
SRCPARAM L0000033     0.012195122      4.15      4.96      1.93
SRCPARAM L0000034     0.012195122      4.15      4.96      1.93
SRCPARAM L0000035     0.012195122      4.15      4.96      1.93
SRCPARAM L0000036     0.012195122      4.15      4.96      1.93
SRCPARAM L0000037     0.012195122      4.15      4.96      1.93
SRCPARAM L0000038     0.012195122      4.15      4.96      1.93
SRCPARAM L0000039     0.012195122      4.15      4.96      1.93
SRCPARAM L0000040     0.012195122      4.15      4.96      1.93
SRCPARAM L0000041     0.012195122      4.15      4.96      1.93
SRCPARAM L0000042     0.012195122      4.15      4.96      1.93
SRCPARAM L0000043     0.012195122      4.15      4.96      1.93
SRCPARAM L0000044     0.012195122      4.15      4.96      1.93
SRCPARAM L0000045     0.012195122      4.15      4.96      1.93
SRCPARAM L0000046     0.012195122      4.15      4.96      1.93
SRCPARAM L0000047     0.012195122      4.15      4.96      1.93
SRCPARAM L0000048     0.012195122      4.15      4.96      1.93
SRCPARAM L0000049     0.012195122      4.15      4.96      1.93
SRCPARAM L0000050     0.012195122      4.15      4.96      1.93
SRCPARAM L0000051     0.012195122      4.15      4.96      1.93
SRCPARAM L0000052     0.012195122      4.15      4.96      1.93
SRCPARAM L0000053     0.012195122      4.15      4.96      1.93
```

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   SRCPARAM L0000054     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000055     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000056     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000057     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000058     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000059     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000060     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000061     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000062     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000063     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000064     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000065     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000066     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000067     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000068     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000069     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000070     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000071     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000072     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000073     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000074     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000075     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000076     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000077     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000078     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000079     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000080     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000081     0.012195122      4.15      4.96      1.93
   SRCPARAM L0000082     0.012195122      4.15      4.96      1.93
** ------------------------------------------------------------------

** Variable Emissions Type: "By Hour / Day (HRDOW)"
** Variable Emission Scenario: "Scenario 1"
**
**************************************
** AERMOD Receptor Pathway
**************************************
```

```
**
**
RE STARTING
   INCLUDED Livermore_Solar_Grid.rou
RE FINISHED
**
****************************************
** AERMOD Meteorology Pathway
****************************************
**
**
ME STARTING
   SURFFILE "L:\SWEN-01\10_Tech Support\AQ&GHG\Construction HRA\B - Air Dispersion Model Output
Files\met data\724927 (1)\724927.SFC"
   PROFFILE "L:\SWEN-01\10_Tech Support\AQ&GHG\Construction HRA\B - Air Dispersion Model Output
Files\met data\724927 (1)\724927.PFL"
   SURFDATA 23285 2009
   UAIRDATA 23230 2009 LIVERMORE/WSO_AP
   PROFBASE 119.8 METERS
ME FINISHED
**
****************************************
** AERMOD Output Pathway
****************************************
**
**
OU STARTING
** Auto-Generated Plotfiles
   PLOTFILE PERIOD Onsite LIVERMORE_SOLAR_GRID.AD\PE00G001.PLT 31
   PLOTFILE PERIOD Offsite LIVERMORE_SOLAR_GRID.AD\PE00G002.PLT 32
   SUMMFILE Livermore_Solar_Grid.sum
OU FINISHED

 *********************************
 *** SETUP Finishes Successfully ***
 *********************************
```

```
 *** AERMOD - VERSION 16216r ***   *** Livermore Solar Farm
***        04/18/18
 *** AERMET - VERSION  14134 ***   ***
***        15:43:22

PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  RURAL

                                              ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.

 **Other Options Specified:
        CCVR_Sub - Meteorological data includes CCVR substitutions
        TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Accepts FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  OTHER
```

```
 **Model Calculates PERIOD Averages Only

 **This Run Includes:     83 Source(s);       2 Source Group(s); and    1033 Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                 and:     82 VOLUME source(s)
                 and:      1 AREA type source(s)
                 and:      0 LINE source(s)
                 and:      0 OPENPIT source(s)
                 and:      0 BUOYANT LINE source(s) with      0 line(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  14134

 **Output Options Selected:
         Model Outputs Tables of PERIOD Averages by Receptor
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
         Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =   119.80 ;  Decay Coef. =    0.000     ;
Rot. Angle =     0.0
                  Emission Units = GRAMS/SEC                                     ;  Emission Rate Unit
Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.7 MB of RAM.

 **Detailed Error/Message File:   Livermore_Solar_Grid.err
 **File for Summary of Results:   Livermore_Solar_Grid.sum
```

 *** MODELOPTs: RegDFAULT CONC ELEV FLGPOL RURAL

                                   *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file: L:\SWEN-01\10_Tech Support\AQ&GHG\Construction HRA\B - Air Dispersion Model Outp
Met Version: 14134
   Profile file: L:\SWEN-01\10_Tech Support\AQ&GHG\Construction HRA\B - Air Dispersion Model Outp
   Surface format: FREE
   Profile format: FREE
   Surface station no.:   23285   Upper air station no.:   23230
                 Name: UNKNOWN   Name: LIVERMORE/WSO_AP
                 Year: 2009   Year: 2009

 First 24 hours of scalar data
 YR MO DY JDY HR   H0   U*   W* DT/DZ ZICNV ZIMCH M-O LEN   Z0 BOWEN ALBEDO REF WS   WD
HT REF TA   HT
- -
- - - - - - - - - - -
 09 01 01   1 01 -12.6 0.221 -9.000 -9.000 -999. 250.   77.5 0.11   0.90   1.00   2.86   51.
10.0 279.2   2.0
 09 01 01   1 02 -23.5 0.413 -9.000 -9.000 -999. 637.   269.8 0.11   0.90   1.00   4.86   48.
10.0 279.2   2.0
 09 01 01   1 03 -11.1 0.195 -9.000 -9.000 -999. 254.   59.8 0.07   0.90   1.00   2.86   94.

```
10.0  278.8    2.0
 09 01 01   1 04   -9.5  0.166 -9.000 -9.000 -999.  164.     43.7  0.11   0.90   1.00    2.36   53.
10.0  278.1    2.0
 09 01 01   1 05  -11.1  0.195 -9.000 -9.000 -999.  206.     59.6  0.07   0.90   1.00    2.86   63.
10.0  278.1    2.0
 09 01 01   1 06   -8.2  0.143 -9.000 -9.000 -999.  131.     32.3  0.07   0.90   1.00    2.36   72.
10.0  278.1    2.0
 09 01 01   1 07   -8.2  0.143 -9.000 -9.000 -999.  130.     32.3  0.07   0.90   1.00    2.36   75.
10.0  278.1    2.0
 09 01 01   1 08   -4.1  0.078 -9.000 -9.000 -999.   53.     10.3  0.11   0.90   0.75    1.76   13.
10.0  277.5    2.0
 09 01 01   1 09   -6.3  0.246 -9.000 -9.000 -999.  292.    211.6  0.12   0.90   0.40    2.86  347.
10.0  278.1    2.0
 09 01 01   1 10    6.6  0.303  0.261  0.016   96.  401.   -378.3  0.11   0.90   0.27    3.36   51.
10.0  278.8    2.0
 09 01 01   1 11   15.4  0.317  0.422  0.017  176.  429.   -186.8  0.07   0.90   0.23    3.86   94.
10.0  279.9    2.0
 09 01 01   1 12   47.5  0.448  0.742  0.017  309.  720.   -170.5  0.11   0.90   0.22    4.86   56.
10.0  280.9    2.0
 09 01 01   1 13   49.0  0.405  0.820  0.014  403.  621.   -122.0  0.07   0.90   0.21    4.86   63.
10.0  281.4    2.0
 09 01 01   1 14   42.7  0.405  0.809  0.014  444.  619.   -139.5  0.11   0.90   0.22    4.36   59.
10.0  282.0    2.0
 09 01 01   1 15   60.8  0.372  0.922  0.014  463.  545.    -75.6  0.07   0.90   0.25    4.36   72.
10.0  281.4    2.0
 09 01 01   1 16   14.1  0.309  0.569  0.016  467.  414.   -187.5  0.11   0.90   0.34    3.36   54.
10.0  282.0    2.0
 09 01 01   1 17  -30.4  0.311 -9.000 -9.000 -999.  417.     89.1  0.07   0.90   0.58    4.36   61.
10.0  280.4    2.0
 09 01 01   1 18  -27.0  0.239 -9.000 -9.000 -999.  282.     45.2  0.11   0.90   1.00    3.36   47.
10.0  279.9    2.0
 09 01 01   1 19  -14.9  0.131 -9.000 -9.000 -999.  120.     13.7  0.07   0.90   1.00    2.86   64.
10.0  279.2    2.0
 09 01 01   1 20   -5.8  0.078 -9.000 -9.000 -999.   53.      7.3  0.11   0.90   1.00    1.76   47.
10.0  278.8    2.0
 09 01 01   1 21 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.10   0.90   1.00    0.00    0.
10.0  277.5    2.0
```

```
 09 01 01   1 22   -4.9  0.070 -9.000 -9.000 -999.   44.      6.2  0.07   0.90   1.00    1.76   82.
10.0  276.4    2.0
 09 01 01   1 23 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.10   0.90   1.00    0.00    0.
10.0  277.0    2.0
 09 01 01   1 24 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.10   0.90   1.00    0.00    0.
10.0  277.0    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 09 01 01 01   10.0 1   51.    2.86   279.3   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
```

```
 *** AERMOD - VERSION 16216r ***   *** Livermore Solar Farm
***         04/18/18
 *** AERMET - VERSION  14134 ***   ***
***         15:43:22


                              *** THE PERIOD ( 43872 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE
GROUP: ONSITE   ***
                                  INCLUDING SOURCE(S):     PAREA1      ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                         ** CONC OF OTHER    IN MICROGRAMS/M**3
**

       X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)   Y-COORD (M)
CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - -
         609051.23    4177887.90        0.55339                     609066.19    4177887.90
0.52553
         608766.99    4177903.51        2.60940                     608781.95    4177903.51
2.23818
         608796.91    4177903.51        1.95625                     608811.87    4177903.51
1.73638
         608826.83    4177903.51        1.55987                     608841.79    4177903.51
1.41423
         608856.75    4177903.51        1.29165                     608871.71    4177903.51
1.18679
         608886.67    4177903.51        1.09584                     608901.63    4177903.51
1.01612
         608916.59    4177903.51        0.94575                     608931.55    4177903.51
0.88304
         608946.51    4177903.51        0.82839                     608961.47    4177903.51
0.77908
         608976.43    4177903.51        0.73272                     608991.39    4177903.51
0.69022
```

609006.35 4177903.51 0.65135 609021.31 4177903.51 0.61568
609036.27 4177903.51 0.58284 609051.23 4177903.51 0.55251
609066.19 4177903.51 0.52444 608766.99 4177919.12 2.60110
608781.95 4177919.12 2.24161 608796.91 4177919.12 1.96007
608811.87 4177919.12 1.73980 608826.83 4177919.12 1.56300
608841.79 4177919.12 1.41705 608856.75 4177919.12 1.29412
608871.71 4177919.12 1.18891 608886.67 4177919.12 1.09761
608901.63 4177919.12 1.01752 608916.59 4177919.12 0.94661
608931.55 4177919.12 0.88334 608946.51 4177919.12 0.82762
608961.47 4177919.12 0.77734 608976.43 4177919.12 0.73140
608991.39 4177919.12 0.68941 609006.35 4177919.12 0.65035
609021.31 4177919.12 0.61441 609036.27 4177919.12 0.58133
609051.23 4177919.12 0.55079 609066.19 4177919.12 0.52253
608405.84 4177550.32 0.53903 608415.84 4177550.32 0.56291
608425.84 4177550.32 0.59040 608435.84 4177550.32 0.62229
608445.84 4177550.32 0.65954 608455.84 4177550.32 0.70341
608465.84 4177550.32 0.75551 608475.84 4177550.32 0.81789
608485.84 4177550.32 0.89437 608495.84 4177550.32 0.99403
608405.84 4177560.32 0.55133 608415.84 4177560.32

0.57473					
	608425.84	4177560.32	0.60183	608435.84	4177560.32
0.63344					
	608445.84	4177560.32	0.67059	608455.84	4177560.32
0.71456					
	608465.84	4177560.32	0.76697	608475.84	4177560.32
0.82985					
	608485.84	4177560.32	0.90667	608495.84	4177560.32
1.00471					
	608405.84	4177570.32	0.56632	608415.84	4177570.32
0.58913					
	608425.84	4177570.32	0.61569	608435.84	4177570.32
0.64690					
	608445.84	4177570.32	0.68386	608455.84	4177570.32
0.72790					
	608465.84	4177570.32	0.78065	608475.84	4177570.32
0.84414					
	608485.84	4177570.32	0.92126	608495.84	4177570.32
1.01780					
	608405.84	4177580.32	0.58506	608415.84	4177580.32
0.60717					
	608425.84	4177580.32	0.63306	608435.84	4177580.32
0.66374					
	608445.84	4177580.32	0.70042	608455.84	4177580.32
0.74453					

*** AERMOD - VERSION 16216r ***   *** Livermore Solar Farm
***   04/18/18
 *** AERMET - VERSION 14134 ***   ***
***   15:43:22

 *** MODELOPTs: RegDFAULT CONC ELEV FLGPOL RURAL

*** THE PERIOD (43872 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: OFFSITE ***

INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 , L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 , L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 , L0000020 , L0000021 , L0000022 , L0000023 , L0000024 , L0000025 , L0000026 , L0000027 , L0000028 , . . . , RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
609051.23	4177887.90	0.24421	609066.19	4177887.90	0.23511
608766.99	4177903.51	0.56950	608781.95	4177903.51	0.53975
608796.91	4177903.51	0.51222	608811.87	4177903.51	

0.48668					
	608826.83	4177903.51	0.46295	608841.79	4177903.51
0.44085					
	608856.75	4177903.51	0.42024	608871.71	4177903.51
0.40097					
	608886.67	4177903.51	0.38293	608901.63	4177903.51
0.36601					
	608916.59	4177903.51	0.35012	608931.55	4177903.51
0.33517					
	608946.51	4177903.51	0.32104	608961.47	4177903.51
0.30771					
	608976.43	4177903.51	0.29518	608991.39	4177903.51
0.28335					
	609006.35	4177903.51	0.27217	609021.31	4177903.51
0.26157					
	609036.27	4177903.51	0.25153	609051.23	4177903.51
0.24200					
	609066.19	4177903.51	0.23295	608766.99	4177919.12
0.56725					
	608781.95	4177919.12	0.53735	608796.91	4177919.12
0.50970					
	608811.87	4177919.12	0.48405	608826.83	4177919.12
0.46022					
	608841.79	4177919.12	0.43804	608856.75	4177919.12
0.41735					
	608871.71	4177919.12	0.39804	608886.67	4177919.12
0.37997					
	608901.63	4177919.12	0.36304	608916.59	4177919.12
0.34716					
	608931.55	4177919.12	0.33223	608946.51	4177919.12
0.31816					
	608961.47	4177919.12	0.30489	608976.43	4177919.12
0.29239					
	608991.39	4177919.12	0.28058	609006.35	4177919.12
0.26945					
	609021.31	4177919.12	0.25892	609036.27	4177919.12
0.24894					

609051.23 4177919.12 0.23948 609066.19 4177919.12 0.23050
608405.84 4177550.32 8.57469 608415.84 4177550.32 6.93557
608425.84 4177550.32 5.70764 608435.84 4177550.32 4.78986
608445.84 4177550.32 4.09195 608455.84 4177550.32 3.54898
608465.84 4177550.32 3.11704 608475.84 4177550.32 2.76660
608485.84 4177550.32 2.47648 608495.84 4177550.32 2.22971
608405.84 4177560.32 8.59591 608415.84 4177560.32 6.95657
608425.84 4177560.32 5.72785 608435.84 4177560.32 4.80893
608445.84 4177560.32 4.10998 608455.84 4177560.32 3.56627
608465.84 4177560.32 3.13384 608475.84 4177560.32 2.78306
608485.84 4177560.32 2.49299 608495.84 4177560.32 2.24815
608405.84 4177570.32 8.61687 608415.84 4177570.32 6.97594
608425.84 4177570.32 5.74495 608435.84 4177570.32 4.82415
608445.84 4177570.32 4.12404 608455.84 4177570.32 3.57977
608465.84 4177570.32 3.14719 608475.84 4177570.32 2.79646
608485.84 4177570.32 2.50698 608495.84 4177570.32 2.26398
608405.84 4177580.32 8.63954 608415.84 4177580.32 6.99253
608425.84 4177580.32 5.75723 608435.84 4177580.32 4.83418
608445.84 4177580.32 4.13332 608455.84 4177580.32

 *** MODELOPTs: RegDFAULT CONC ELEV FLGPOL RURAL

*** THE SUMMARY OF MAXIMUM PERIOD (43872 HRS) RESULTS ***

** CONC OF OTHER   IN MICROGRAMS/M**3
**

NETWORK GROUP ID OF TYPE	GRID-ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)				
ONSITE	1ST HIGHEST VALUE IS	2.60940 AT	(608766.99,	4177903.51,	170.00,	170.00,	1.50) DC
	2ND HIGHEST VALUE IS	2.60366 AT	(608766.99,	4177887.90,	170.00,	170.00,	1.50) DC
	3RD HIGHEST VALUE IS	2.60110 AT	(608766.99,	4177919.12,	170.25,	170.25,	1.50) DC
	4TH HIGHEST VALUE IS	2.59681 AT	(608766.99,	4177872.29,	170.00,	170.00,	1.50) DC
	5TH HIGHEST VALUE IS	2.58882 AT	(608766.99,	4177856.68,	170.00,	170.00,	1.50) DC
	6TH HIGHEST VALUE IS	2.57978 AT	(608766.99,	4177841.07,	170.00,	170.00,	1.50) DC
	7TH HIGHEST VALUE IS	2.56978 AT	(608766.99,	4177825.46,	170.00,	170.00,	1.50) DC
	8TH HIGHEST VALUE IS	2.55857 AT	(608766.99,	4177809.85,	170.00,	170.00,	

```
1.50)  DC
          9TH HIGHEST VALUE IS       2.54622 AT (  608766.99,  4177794.24,   170.00,   170.00,
1.50)  DC
         10TH HIGHEST VALUE IS       2.53832 AT (  608766.99,  4177778.63,   169.89,   169.89,
1.50)  DC

OFFSITE   1ST HIGHEST VALUE IS       8.67245 AT (  608405.84,  4177600.32,   170.00,   170.00,
1.50)  DC
          2ND HIGHEST VALUE IS       8.66137 AT (  608405.84,  4177590.32,   170.00,   170.00,
1.50)  DC
          3RD HIGHEST VALUE IS       8.64933 AT (  608405.84,  4177610.32,   170.09,   170.09,
1.50)  DC
          4TH HIGHEST VALUE IS       8.63954 AT (  608405.84,  4177580.32,   170.00,   170.00,
1.50)  DC
          5TH HIGHEST VALUE IS       8.61687 AT (  608405.84,  4177570.32,   170.00,   170.00,
1.50)  DC
          6TH HIGHEST VALUE IS       8.60430 AT (  608405.84,  4177620.32,   170.29,   170.29,
1.50)  DC
          7TH HIGHEST VALUE IS       8.59591 AT (  608405.84,  4177560.32,   170.00,   170.00,
1.50)  DC
          8TH HIGHEST VALUE IS       8.57501 AT (  608405.84,  4177630.32,   170.48,   170.48,
1.50)  DC
          9TH HIGHEST VALUE IS       8.57469 AT (  608405.84,  4177550.32,   170.00,   170.00,
1.50)  DC
         10TH HIGHEST VALUE IS       8.56691 AT (  608405.84,  4177640.32,   170.65,   170.65,
1.50)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
```

 *** MODELOPTs: RegDFAULT CONC ELEV FLGPOL RURAL

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of   0 Fatal Error Message(s)
 A Total of   0 Warning Message(s)
 A Total of   15235 Informational Message(s)

 A Total of   43872 Hours Were Processed

 A Total of   13448 Calm Hours Identified

 A Total of   1787 Missing Hours Identified (4.07 Percent)

    ******** FATAL ERROR MESSAGES ********
               *** NONE ***

    ********   WARNING MESSAGES   ********
               *** NONE ***

    ****
    *** AERMOD Finishes Successfully ***
    ****

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Appendix C. Construction Risk Calculations

Table C1
Off-site Residential MER Concentrations for Risk Calculations

Contaminant		Source	Model Output [1] ($\mu g/m^3$)	Emission Rates [2] (g/s)	MER Conc. ($\mu g/m^3$)	Total MER Conc. Annual Average ($\mu g/m^3$)
(a)		(b)	(c)	(d)	(e)	(f)
Residential Receptors - Unmitigated						
DPM	2018	On-Site Emissions	2.61	2.78E-02	7.26E-02	7.27E-02
		Truck Route	0.57	2.86E-06	1.63E-06	
	2019	On-Site Emissions	2.61	2.67E-02	6.97E-02	6.97E-02
		Truck Route	0.57	2.51E-06	1.43E-06	
Total DPM concentrations used for Cancer Risk and Chronic Hazard calculations						
$PM_{2.5}$	2018	On-Site Emissions	2.61	2.60E-02	6.79E-02	6.79E-02
		Truck Route	0.57	2.78E-06	1.58E-06	
	2019	On-Site Emissions	2.61	2.49E-02	6.51E-02	6.51E-02
		Truck Route	0.57	2.34E-06	1.33E-06	
					Maximum Annual $PM_{2.5}$ Concentration	**0.07**
					BAAQMD Threshold	**0.30**

Maximum Exposed Receptor (MER) UTM coordinates: 608766.99 E, 4177903.51 N

[1] Model Output at the MER based on unit emission rates for sources (1 g/s).

[2] Emission Rates from Emission Rate Calculations (Appendix A - Construction Emissions).

Table C2
Quantification of Health Risks for Off-site Residents

Source		MER	Weight	Contaminant			Dose (by age bin)		Carcinogenic Risks (by age bin)		**Total Cancer Risk**	**Chronic Hazards [3]**	
		Conc. ($\mu g/m^3$)	Fraction		URF $(\mu g/m^3)^{-1}$	CPF $(mg/kg/day)^{-1}$	3rd Trimester (mg/kg-day)	0 < 2 years	3rd Trimester per million	0 < 2 years	per million	Chronic REL ($\mu g/m^3$)	RESP
		(a)	(b)	(c)	(d)	(e)	(f)	(g)		(i)		(k)	(l)	(m)
Residential Receptors - Unmitigated													
2018	On & Off-Site	7.27E-02	1.00E+00	DPM	3.0E-04	1.1E+00	2.51E-05	7.59E-05	8.02E-01	1.62E+00	2.4	5.0E+00	1.45E-02
2019	On & Off-Site	6.97E-02	1.00E+00		3.0E-04	1.1E+00		7.29E-05		5.41E+00	5.4	5.0E+00	1.39E-02
										Total	**7.8**		**0.028**
										BAAQMD Threshold	**10.0**		**1.0**

Maximum Exposed Receptor (MER) UTM coordinates: 608766.99 E, 4177903.51 N

		3rd Trimester	0 < 2 years
OEHHA age bin		3rd Trimester	0 < 2 years
exposure year(s)		2018	2018-2019
Dose Exposure Factors:	xposure frequency (days/year)	350	350
	inhalation rate (L/kg-day) [1]	361	1090
	inhalation absorption factor	1	1
	conversion factor (mg/µg; m^3/L)	1.0E-06	1.0E-06
Risk Calculation Factors:	age sensitivity factor	10	10
	averaging time (years)	70	70
	per million	1.0E+06	1.0E+06
	fraction of time at home	0.85	0.85

exposure durations per age bin			exposure durations (year)	
	Construction Year	Risk Scalar [2]	3rd Trimester	0 < 2 years
	2018	0.42	0.25	0.17
	2019	0.58		0.58
	Total	1.00	0.25	0.75

[1] Inhalation rate taken as the 95th percentile breathing rates (OEHHA, 2015).

[2] Risk scalar determined for each year of construction to adjust receptor exposures to the exposure durations for each construction year (see App A - Construction Emissions).

[3] Chronic Hazards for DPM using the chronic reference exposure level (REL) for the Respiratory Toxicological Endpoint.

APPENDIX D:
BIOLOGICAL RESOURCES STUDIES

Biological Resource Assessment for the Proposed Livermore Community Solar Farm Facility, June 21, 2016

LSA ASSOCIATES, INC.
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510.236.6810 TEL
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BERKELEY
CARLSBAD
FRESNO
IRVINE
PALM SPRINGS
RIVERSIDE
ROCKLIN
SAN LUIS OBISPO

June 21, 2016

Jason Vine, P.E.
REALM Engineering
1447 Market Street, Suite B
Redding, CA 96001

Subject: Results of Biological Resource Assessment for the Proposed Livermore Community Solar Farm Facility, Alameda County, California

Dear Jason:

Per your request, LSA has completed a reconnaissance-level biological survey of the Livermore Community Solar Farm Facility (project) in Livermore, California. The purpose of the survey was to identify existing biological resources, evaluate the site's potential to support special-status plant and/or animal species, and to determine if any sensitive habitats, such as wetlands or native plant communities, are present. This letter report includes the following: (1) a summary of relevant federal and State regulations pertaining to biological resources; (2) a description of the methods used to conduct the survey; (3) a brief description of existing habitat conditions; (4) an analysis of special-status species plant and animal species, sensitive plant communities, and/or jurisdictional waters potentially present at the site; and (5) a discussion of potential impacts from the proposed project on these species and habitats as well as potential avoidance and minimization measures, mitigation measures, and compliance with mitigation measures outlined in the East Alameda County Conservation Strategy (EACCS).

PROJECT AND PROPERTY DESCRIPTION

The project site is located at 4871 North Livermore Avenue, Livermore, Alameda County, California (Figure 1). The project site lies in Section S21, Township T02S, and Range R02E within the United States Geological Survey (USGS) 7.5-minute Livermore Quadrangle (Figure 2). The project site is in Assessor's Parcel Number (APN) 902-0002-003. The applicant proposes to construct a solar energy array on approximately 30 acres of the project site. The proposed project includes installation of approximately 12,800 solar panel modules, two equipment pads, fire access roads using compacted native soils, a driveway, a drainage channel, culverts, and a detention basin. The total permanent impact from the proposed project is approximately 152,100 square feet (3.5 acres).

The project site occurs on a 69.21 acre parcel in a valley 2.5 miles north of Livermore, California. The elevation ranges from approximately 579 feet to the north to approximately 553 feet to the south at May School Road (Figure 2). The majority of the site is a cattle pasture of annual grassland. A small residence, barn, and shop are located in the southwest area of the site along Livermore Avenue. A stand of mature blue gum eucalyptus (*Eucalyptus globulus*) lines the perimeter of the residence and outbuildings (Figure 3). Two potential seasonal wetlands are located adjacent to the residential

property (Figure 3). The project site is surrounded by agricultural uses and annual grassland. A PG&E power station is adjacent to the residential property to the west on Livermore Avenue. Adjacent to the east are 6 rural residential properties (Figure 3).

REGULATORY CONTEXT

Federal Endangered Species Act

The U.S. Fish and Wildlife Service (USFWS) has jurisdiction over federally listed threatened and endangered plant and animal species. The federal Endangered Species Act (ESA) protects listed species from harm or "take," broadly defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Any activity can be defined as a "take" even if it is unintentional or accidental. The USFWS has jurisdiction over federally listed plant and animal species, while the National Marine Fisheries Service (NMFS) (formerly known as NOAA Fisheries) has jurisdiction over all federally listed anadromous fish.

An endangered species is one that is considered in danger of becoming extinct throughout all or a significant portion of its range. A threatened species is one that is likely to become endangered in the foreseeable future. Any activity that could result in the taking of a federally listed species requires an ESA Section 10 take permit from the USFWS, or an ESA Section 7 consultation with the USFWS in conjunction with a federal permit process. Section 7 of the ESA requires other federal agencies involved in permitting projects that may result in take of federally listed species (e.g., U.S. Army Corps of Engineers) to consult with the USFWS prior to allowing any activities that may result in take.

Clean Water Act

The U.S. Army Corps of Engineers (Corps) is responsible under Section 404 of the Clean Water Act to regulate the discharge of fill material into waters of the United States. Waters of the United States and their lateral limits are defined in 33 CFR Part 328.3(a) and include streams that are tributaries to navigable waters and their adjacent wetlands. The lateral limits of jurisdiction for a non-tidal stream are measured at the line of the ordinary high water mark (33 CFR 328.3[e]) or the limit of adjacent wetlands (33 CFR 328.3[b]). Any permanent extension of the limits of an existing water of the United States, whether natural or man-made, results in a similar extension of Corps jurisdiction (33 CFR 328.5).

Waters of the United States fall into two broad categories: wetlands and other waters. Other waters include waterbodies and watercourses such as rivers, streams, lakes, springs, ponds, coastal waters, and estuaries. Wetlands include marshes, wet meadows, seeps, floodplains, basins, and other areas experiencing extended seasonal soil saturation. Seasonally or intermittently inundated features, such as seasonal ponds, ephemeral streams, and tidal marshes, are categorized as wetlands if they have hydric soils and support wetland plant communities. Seasonally inundated waterbodies or watercourses that do not exhibit wetland characteristics are classified as other waters of the United States.

In general, a project proponent must obtain a Section 404 permit from the Corps before placing fill or grading in wetlands or other waters of the United States. Prior to issuing the permit, the Corps is

required to consult with the USFWS under Section 7 of the ESA if the project may result in the take of federally listed species.

All Corps permits require water quality certification under Section 401 of the Clean Water Act. In the Bay Area, this regulatory program is administered by the San Francisco Bay Regional Water Quality Control Board (RWQCB). Project proponents who propose to fill wetlands or other waters of the United States must apply for water quality certification from the RWQCB. The RWQCB has adopted a policy requiring mitigation for any loss of wetland, streambed, or other jurisdictional area.

Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA), which is enforced by the USFWS, prohibits the taking, hunting, killing, selling, purchasing, etc. of migratory birds, parts of migratory birds, or their eggs and nests. As used in the MBTA, the term "take" is defined as "to pursue, hunt, shoot, capture, collect, kill, or attempt to pursue, hunt, shoot, capture, collect, or kill, unless the context otherwise requires." Most bird species native to North America are covered by this act.

California Endangered Species Act

The California Department of Fish and Wildlife (CDFW) has jurisdiction over State-listed endangered, threatened, and rare plant and animal species under the California Endangered Species Act (CESA). CESA is similar to the federal ESA both in process and substance; it is intended to provide additional protection to threatened and endangered species in California. Species may be listed as threatened or endangered under both acts (in which case the provisions of both State and federal laws apply) or under only one act. A candidate species is one that the Fish and Game Commission has formally noticed as being under review by CDFW for addition to the State list. Candidate species are protected by the provisions of CESA.

Porter-Cologne Water Quality Control Act

Under this Act (California Water Code Sections 13000–14920), the RWQCB is authorized to regulate the discharge of waste that could affect the quality of the State's waters. The RWQCB asserts jurisdiction over isolated waters and wetlands, as well as waters and wetlands that are regulated by the Corps. Therefore, even if a project does not require a federal permit, it still requires review and approval by the RWQCB. When reviewing applications, the RWQCB focuses on ensuring that projects do not adversely affect the "beneficial uses" associated with waters of the State. In most cases, the RWQCB seeks to protect these beneficial uses by requiring the integration of waste discharge requirements (WDRs) into projects that will require discharge into waters of the State. For most construction projects, the RWQCB requires the use of construction and post-construction best management practices (BMPs).

California Fish and Game Code

CDFW is also responsible for enforcing the California Fish and Game Code, which contains several provisions potentially relevant to construction projects. For example, Section 1602 of the Fish and Game Code governs the issuance of Lake or Streambed Alteration Agreements by CDFW. Lake or

Streambed Alteration Agreements are required whenever project activities substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated as such by CDFW.

The Fish and Game Code also designates animal species as Fully Protected or Protected. Fully Protected animals and protected animals may not be taken or possessed at any time. CDFW does not issue licenses or permits for take of these species except for necessary scientific research or live capture and relocation pursuant to a permit for the protection of livestock. Fully Protected species are listed in Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the Fish and Game Code, while Protected amphibians and reptiles are listed in Chapter 5, Sections 41 and 42.

Section 3503 of the Fish and Game Code prohibits the take, possession, or needless destruction of the nest or eggs of any bird. Subsection 3503.5 specifically prohibits the take, possession, or destruction of any birds in the orders Falconiformes (hawks and eagles) or Strigiformes (owls) and their nests. These provisions, along with the federal MBTA, essentially serve to protect nesting native birds. Non-native species, including European starling, house sparrow, and rock pigeon, are not afforded any protection under the MBTA or California Fish and Game Code.

California Species of Special Concern

The CDFW maintains an administrative list of Species of Special Concern, defined as a "species, subspecies, or distinct population of an animal native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria:

- is extirpated from the State, or, in the case of birds, in its primary seasonal or breeding role;
- is listed as federally, but not State-, threatened or endangered;
- meets the State definition of threatened or endangered but has not formally been listed;
- is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status;
- has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status."

Section 15380 of the CEQA Guidelines clearly indicates that Species of Special Concern should be included in an analysis of project impacts if they can be shown to meet the criteria of sensitivity outline therein. In contrast to species listed under the ESA or CESA, however, Species of Special Concern have no formal legal status.

California Rare Plant Ranks

Special-status plants in California are assigned to one of five "California Rare Plant Ranks" by a collaborative group of over 300 botanists in government, academia, non-governmental organizations, and the private sector. This effort is jointly managed by the CDFW and the non-profit California

Native Plant Society (CNPS). The five California Rare Plant Ranks currently recognized by the CNDDB include the following:

- Rare Plant Rank 1A – presumed extinct in California.
- Rare Plant Rank 1B – rare, threatened, or endangered in California and elsewhere.
- Rare Plant Rank 2 – rare, threatened, or endangered in California but more common elsewhere.
- Rare Plant Rank 3 – a review list of plants about which more information is needed.
- Rare Plant Rank 4 – a watch list of plants of limited distribution.

Substantial impacts to plants ranked 1A, 1B, and 2 are typically considered significant based on Section 15380 of the CEQA Guidelines depending on the policy of the lead agency. Plants ranked 3 and 4 may be evaluated by the lead agency on a case-by-case basis to determine significance thresholds under CEQA.

East Alameda County Conservation Strategy

The East Alameda County Conservation Strategy (EACCS) is a collaborative document developed by multiple federal, State, and local entities (e.g., Alameda County, East Bay Regional Park District, RWQCB, CDFG, USFWS) that is intended to "provide an effective framework to protect, enhance, and restore natural resources in eastern Alameda County, while improving and streamlining the environmental permitting process for impacts resulting from infrastructure and development projects" (ICF International 2010). The EACCS enables project proponents to comply with federal and State regulatory requirements within a framework of comprehensive conservation goals and objectives by implementing standardized mitigation requirements. Although the EACCS does not directly result in permits from any regulatory agencies, the standardized avoidance, minimization, and mitigation measures for species and natural communities provides more certainty for project proponents and local agencies of regulatory expectations and costs. This approach is expected to streamline the environmental permitting process, reducing the overall cost of environmental permitting and consolidating mitigation. The EACCS addresses 18 "focal species" comprised of 12 wildlife and 6 plant species that meet one of the following criteria: (1) listed under the federal ESA as threatened or endangered, or proposed for listing; (2) listed under the California ESA as threatened or endangered, or proposed for listing; (3) listed under the Native Plant Protection Act as rare; or (4) expected be listed under the federal or State ESA in the foreseeable future. Focal species with the potential to occur are discussed in the attached Table A.

METHODS

Prior to conducting fieldwork, LSA reviewed the California Natural Diversity Database (CNDDB) for occurrence records of special-status species and sensitive natural communities in the project site vicinity. The CNDDB is maintained by the CDFW for the purpose of tracking and monitoring the occurrence of special-status species and sensitive natural communities throughout the State.

The CNDDB search was conducted for an area within a 2-mile radius around the project site. The special-status species listed in the CNDDB for the 2-mile radius have a potential to occur on the

project site if suitable habitat is present. Other special-status species may also have a potential to occur because the project site is within their geographic range and suitable habitat may be present in the area. The special-status species evaluated for the project site are discussed in Table A.

For the purpose of this assessment, special-status species are defined as follows:

- Species that are listed or formally proposed for listing as threatened or endangered under the federal Endangered Species Act
- Species that are listed, or designated as candidates for listing, as rare, threatened, or endangered under the California Endangered Species Act
- Animal species designated as Species of Special Concern or Fully Protected by the CDFW
- Species that meet the definition of rare, threatened, or endangered under Section 15380 of the CEQA guidelines
- Plant species with a California Rare Plant Rank of 1B and 2; California Native Plant Society (CNPS 2015)

LSA biologist Tim O'Donnell surveyed the project site on April 27, 2016. The weather during the survey was 63°F with 70 percent cloud cover and 8 mph east wind. The site survey was focused on the project site area and adjacent areas. The focus of the field survey was to evaluate the site's potential to support special-status species, sensitive natural communities, and wetlands. Transects were walked along the entire site. Habitat types and all plants and animals observed within and adjacent to the project site were recorded in field notes

RESULTS

The project site comprised primarily of cattle pasture with a residential property and outbuildings. Four land cover types occur on the project site: non-native annual grassland, eucalyptus stand, developed, and potential seasonal wetland (Figure 3).

Soils

The entire project site is comprised of Clear Lake clay. Clear Lake clays are very deep, poorly drained soils that are formed in basins and swales of level drainages. When dry, Clear Lake clays form strong prismatic structures which are very hard. The soil was completely dry to 16 inches at the time of the survey. No mammal burrows were observed throughout the entire pasture. This is likely due to the extremely hard clay soil that does not likely provide a friable substrate for mammals to burrow.

Plant Communities

Non-Native Grassland. The majority of the site is non-native annual grassland. Dominant species observed include slender wild oat (*Avena barbata*), soft chess (*Bromus hordeaucus*), cut-leaved geranium (*Geranium dissectum*), foxtail barley (*Hordeum murinum*), spring vetch (*Vicia sativa*),

Italian rye grass (*Festuca perennis*), canary grass (*Phalaris paradoxa*), and shamrock clover (*Trifolium dubium*). Other non-native species observed include field bindweed (*Convolvulus arvensis*), Italian thistle (*Carduus pycnocephalus*), black mustard (*Brassica nigra*), cheeseweed mallow (*Malva parviflora*), horehound (*Marrubium vulgare*), prickly lettuce (*Lactuca serriola*), rose clover (*Trifolium hirtum*), milk thistle (*Silybum marianum*), and annual bluegrass (*Poa annua*). A few native species were observed in the grassland including purple owl's clover (*Castillejo exserta*), blow wives (*Microseris douglasii*), annual lupine (*Lupinus bicolor*), fiddleneck (*Amsinckia douglasiana*), and California dandelion (*Agoseris grandiflora*).

Eucalyptus Stand. A stand of mature blue gum trees (*Eucalyptus globulus*) lines the perimeter of the residential property (Figure 3). Smaller trees adjacent to the residence and outbuildings include California buckeye (*Aesculus californica*) and mulberry (*Morus alba*).

Potential Seasonal Wetland. A formal wetland delineation was not within the scope of the field survey; however, the potential waters of the United States are two potential seasonal wetlands features located in topographic depressions adjacent to the residential property (Figure 3). Vegetation in these areas consisted primarily of hydrophytic plant species including toad rush (*Juncus bufonius*) (FACW), Italian rye grass (FAC), spiny fruit buttercup (*Ranunculus muricatu*) (FACW), and Mediterranean barley (*Hordeum marinum*) (FAC).

SPECIAL-STATUS SPECIES

Based on the results of the CNDDB search and literature review, LSA identified 10 special-status plant species as potentially occurring in the vicinity of the site (Table A): heartscale (*Atriplex cordulata var.cordulata*), brittlescale (*Atriplex depressa*), lesser saltscale (*Atriplex minuscula*), Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*), Hispid salty bird's beak (*Chloropyron molle* ssp.*hispidum*), palmate-bracted salty bird's-beak (*Chloropyron palmatum*), Livermore tarplant (*Deinandra bacigalupii*), San Joaquin spearscale (*Extriplex joaquinana*), California alkali grass (*Puccinellia simplex*), and caper-fruited tropidocarpum (T*ropidocarpum capparideum*). Table A also includes all of the focal species identified in the EACCS. Nine of the special-status plant species are not expected to occur due to a lack of suitable substrates (i.e., alkaline soils), vegetation communities (i.e., chenopod scrub), and abundance of non-native ruderal species that typically out-compete native plants. Congdon's tarplant is known to occur in disturbed grassland, therefore could potentially occur on the project site. The applicant is currently conducting rare plant surveys for the 2016 floral season.

Seven CNDDB occurrence records for special-status animal species occur in the vicinity of the site (Table A): vernal pool fairy shrimp (*Branchinecta lynchi*), longhorn fairy shrimp (*Branchinecta longiantenna*), California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana draytonii*), Alameda whipsnake (*Masticophis lateralis euryxanthus*), burrowing owl (*Athene cunicularia*), and San Joaquin kit fox (*Vulpes macrotis mutica*). Five of these seven are not likely to occur on the project site due to absence of suitable habitat (e.g., vernal pools; chaparral; mammal burrows), but are discussed in Table A below due to the species proximity to the project site. The remaining two species that have potential to occur on the site are discussed below.

California Tiger Salamander. California tiger salamanders (CTS) occur in grassland and oak woodland habitats of the Central Valley and coastal hills and valleys from Santa Rosa southward to the Santa Rita Hills in Santa Barbara County (Stebbins 2003). During the dry summer months, adult

and juvenile CTS remain underground in small rodent burrows or soil cracks in order to survive the summer heat (Stebbins 2003). After the first autumn rains, adults emerge from underground to mate and lay their eggs in vernal pools, stock ponds, and other ephemeral water bodies where fish and other predators of CTS eggs and larvae are absent. After hatching, larvae remain in the water during metamorphosis to juvenile life stage. After metamorphosis is complete, juveniles disperse from the aquatic breeding site to underground burrows or crevices for the summer. The distance between upland sites and aquatic breeding sites depends of local topography, vegetation, and the distribution of rodent burrows. A study by Trenham and Shaffer (2005) showed that 95 percent of adult and sub-adult CTS dispersed to within 2,067 feet of their breeding pond. Another study conducted over 5 years found CTS moving as far as 1.3 miles to and from breeding ponds (Orloff 2007).

The CNDDB includes 9 CTS occurrences within 2 miles of the site, the closest of which is approximately 1.3 miles to the south, where numerous adults were found in nocturnal surveys and pitfall trapps (Occurrence No. 238). CTS occurrence have been recorded in Cayetano Creek approximately 1.8 miles to the north. Cayetano Creek flows south within approximately 2,000 feet of the west side of the project site. The site is contiguous with extensive open space/rangelands in which numerous occurrences are located.

The site itself is devoid of ephemeral wetlands suitable for CTS breeding, and is nearly devoid of mammal burrows due to the very hard clay soils, with minimal cracking to provide refuge. However, given the presence of known and potential breeding sites within 1.3 miles, CTS may use the project site for migration and dispersal.

California Red-legged Frog. California red-legged frogs (CRLF) occur in and along freshwater marshes, streams, ponds, and other semi-permanent water sources. Optimal habitat contains dense emergent or shoreline riparian vegetation closely associated with deep (i.e., greater than 2.3 feet), still, or slow-moving water (Jennings and Hayes 1994). Although the species can occur in intermittent streams and ponds, they are unlikely to persist in streams in which all surface water disappears (Jennings and Hayes 1994). Suitable breeding ponds and pools usually have a minimum depth of 20 inches, but California red-legged frogs do sometimes breed successfully in pools as shallow as 10 inches (Fellers 2005). Regardless of water depth, suitable breeding habitat must contain water during the entire development period for eggs and tadpoles.

Limited information is available regarding CRLF use of uplands and other nonbreeding habitats. In a study of CRLF habitat use in coastal Marin County, however, Fellers and Kleeman (2007) found that while some frogs remained at breeding sites year-round, 66 percent of female and 25 percent of male frogs moved to nonbreeding areas, even when the breeding site retained water. At all of their study sites, frogs moved primarily in one direction, often toward the nearest riparian area. They concluded that nonbreeding habitats must have the following characteristics: (1) sufficient moisture to allow amphibians to survive throughout the nonbreeding season (up to 11 months), (2) sufficient cover to moderate temperatures during the warmest and coldest times of the year, and (3) protection (e.g., deep pools in a stream or complex cover such as root masses or thick vegetation) from predators such as raptors, herons, and small carnivores.

The CNDDB includes 20 known CRLF occurrences within 2 miles of the site, the closest of which is an observation of 5 CRLF juveniles approximately 1.3 miles to the southwest (Occurrence No. 297). There are occurrence records of CRLF approximately 1.5 miles to the north and south in Cayetano

Creek. Cayetano Creek flows within 2,000 feet to the west of the project site. Critical habitat for the CRLF lies within 1,000 feet to the northeast and approximately 2,000 feet to the west.

The presence of potential breeding habitats within 1 mile (Cayetano Creek) of the site, as well as a 11 known CRLF occurrence within 1 mile of the site, increase the likelihood that CRLF could occur on the project site (i.e., moving between pools, foraging) at certain times of the year. Based on the habitat conditions in the channel and in the adjacent uplands, LSA anticipates that both the USFWS and CDFW will assume presence of CRLF at the site.

JURISDICTIONAL WATERS

A formal wetland delineation was not within the scope of the field survey; however, potential waters of the United States were identified on the site and are shown on Figure 3 asthe potential seasonal wetland features observed adjacent to the residential property. Evidence of redoximorphic features, a hydric soil indicator, as well as hydrologic indicators such as algal matting, and hydrophytic vegetation were present in these areas. Both are likely subject to the jurisdiction of the Corps and RWQCB.

No other potential wetlands or other waters of the United States were identified on the project site. A formal delineation of jurisdictional areas would be required to confirm the status of these features with the Corps.

NESTING BIRDS

Nests of all native bird species are protected under the federal Migratory Bird Treaty Act (MBTA) and Section 3503 the California Fish and Game Code, which prohibits the take, possession, or needless destruction of the nest or eggs of any bird. The mature stand of eucalyptus provides potential nesting habitat for raptors. The non-native annual grassland vegetation also provides nesting habitat for resident bird species such as song sparrow and red-winged blackbird.

POTENTIAL IMPACTS TO BIOLOGICAL RESOURCES AND RECOMMENDED MITIGATION MEASURES

Special-Status Plants

As described in Table A, the disturbed grassland on the project site provides potential habitat for Congdon’s tarplant. The proposed project may impact Congdon’s tarplant, if present.

Recommended Mitigation Measures. Implementation of the following measures would avoid or minimize project-related impacts on special-status plant species:

1. To further evaluate the presence or absence of special-status plant species in areas proposed for development, a qualified botanist should conduct focused botanical surveys in accordance with CDFG (2009) protocols. Surveys should be timed to coincide with the blooming period for the Congdon’s tarplant. Based on the blooming periods for the target species, botanical surveys should be conducted from summer (May) to fall (October).

2. If any special-status plants are detected, their locations should be mapped with a GPS unit and their population sizes estimated. Project designers should strive to avoid any impacts to special-status plants to the greatest extent feasible.
3. Depending on the species detected and its rarity, further mitigation may be required if the project is unable to avoid special-status plants detected during the focused botanical surveys. Because it is very difficult to restore or establish new populations of special-status plants through translocation of species from one site to another, mitigation options typically include avoidance of the species on site or preservation of an off-site population in either a mitigation bank or through the establishment of a conservation easement on a property where the species is known to occur. Mitigation ratios required through CEQA and/or by the agencies are typically greater than 1:1 for such preservation.

California Tiger Salamander

Based on our experience, LSA expects the USFWS and CDFW to consider the site to be potentially occupied by CTS. Consequently, the most efficient way for the project to obtain incidental take coverage is for the Corps to request that the project be appended to the Programmatic Biological Opinion (PBO) for the EACCS pursuant to Section 7 of the ESA and obtain a CESA Section 2081 incidental take permit (ITP) from CDFW. Both permits will include measures required before, during, and after construction to avoid and/or minimize the take of CTS. Technical guidance should be sought from the agencies regarding the status of CTS (and CRLF) on the site to confirm that they are eligible for inclusion in the EACCS PBO and that the site is considered occupied. At a minimum, for the project to be covered under the PBO, the following species-specific avoidance and minimization measures for CTS and other focal amphibian species (e.g., CRLF) from the EACCS will need to be implemented:

- A qualified biologist will conduct preconstruction surveys before ground disturbance. If individuals are found, work will not begin until they are moved out of the construction zone to a USFWS/CDFW-approved relocation site.
- A USFWS- and CDFW-approved biologist should be present for initial ground disturbing activities.
- If the work site is within potential dispersal distance of potential breeding habitat, barrier fencing will be installed around the work site to prevent amphibians from entering the work area. Barrier fencing will be removed within 72 hours of completion of work.
- Construction personnel will inspect open trenches in the morning and evening for trapped amphibians.
- A qualified biologist possessing a valid ESA Section 10(a)(1)(A) permit or who is USFWS-approved under an active biological opinion, will be contracted to trap and move amphibians to nearby suitable habitat if any are found inside the fenced area.
- Work will be avoided within CTS aquatic habitat from October 15 (or the first measurable rainfall of 1” or greater) to May 1.

Based on the EACCS, standardized mitigation ratios for permanent impacts to CTS range from 3:1 to 4:1 for the area in which the project site is located (i.e., outside USFWS-designated critical habitat but

inside the EACCS CTS North Mitigation Zone), depending on the location of the off-site mitigation lands. Although the EACCS does not differentiate between temporary and permanent impacts in its definition of mitigation ratios, the PBO for the EACCS identifies the following mitigation requirements for temporary impacts: (1) restoration of the affected areas to pre-project conditions within 12 months of the commencement of the activity; and (2) compensation at a 1:1 ratio at a Service-approved conservation/mitigation bank or through land acquisition, management and protection. To ensure the impacts to CTS are minimized and fully mitigated as required under CESA, the applicant would have to demonstrate habitat enhancement, not just permanent protection, on properties used for mitigation. If credits are purchased at a CDFW-approved mitigation bank, this enhancement is assumed, and therefore, the full mitigation standard would be met upon purchase of the credits.

California Red-legged Frog

LSA anticipates that the USFWS will consider the project site to be occupied by CRLF. Therefore, the project will need to obtain incidental take coverage through the Programmatic Biological Opinion (PBO) for the EACCS pursuant to Section 7 of the ESA. The EACCS avoidance and minimization measures for CTS outlined above are also applicable to CRLF.

Based on the EACCS, the standardized mitigation ratios for permanent impacts to CRLF range from 2.5:1 to 3.5:1 for the area in which the project site is located (i.e., outside USFWS-designated critical habitat), depending on the location of the off-site mitigation lands. Any temporary impacts to CRLF would be addressed via the PBO requirements which involve the following: (1) restoration of the affected areas to pre-project conditions within 12 months of the commencement of the activity; and (2) compensation at a 1:1 ratio at a Service-approved conservation/mitigation bank or through land acquisition, management and protection.

Jurisdictional Waters

As mentioned above, the project site contains potential seasonal wetlands. Given that the project will potentially impact waters of the U.S., the applicant will need to obtain a Clean Water Act Section 404 permit from the Corps and Section 401 Water Quality Certification from the RWQCB. No streams were found onsite so a Streambed Alteration Agreement will not be required from CDFW.

Nesting Birds

Nests of all native bird species are protected under the federal Migratory Bird Treaty Act (MBTA) and Section 3503 the California Fish and Game Code, which prohibits the take, possession, or needless destruction of the nest or eggs of any bird. The mature stand of eucalyptus provides potential nesting habitat for raptors. If construction is scheduled to occur in the raptor-nesting season from February 1 to August 31, it is recommended that a qualified biologist experienced with raptors conduct a preconstruction survey within 14 days of construction activities. If nesting raptors are found, a qualified biologist will establish buffers around nests that are sufficient to ensure that breeding is not likely to be disrupted or adversely impacted by construction. Buffers around active raptor nests are typically 200 to 500 feet for non-listed raptors, and will be determined by a qualified biologist. The biologist may determine that smaller buffers would be sufficient to avoid impacts to

nesting raptors. Factors to be considered for determining buffer size include the presence of natural buffers provided by vegetation or topography; nest height; locations of foraging territory; and baseline levels of noise and human activity in the area. Buffers will be maintained until a qualified biologist has determined that young have fledged and are no longer reliant upon the nest or parental care for survival. (CDFW 2015).

The non-native annual grassland vegetation also provides nesting habitat for resident bird species such as song sparrow and red-winged blackbird. If conducted during the nesting season (typically defined by CDFW as February 1 to August 31), project construction could directly impact nesting birds by destroying active nests. LSA recommends that a qualified biologist conduct a preconstruction survey within 14 days of construction activities. If nesting birds are found, a qualified biologist will establish buffers around nests that are sufficient to ensure that breeding is not likely to be disrupted or adversely impacted by construction. Typical buffers for song birds and other non-raptors is 25 to 50 feet.

Please contact me if you have any questions or require further information.

Sincerely,

LSA ASSOCIATES, INC

Tim O'Donnell
Senior Biologist

Attachments: Table A – Special-status Species Evaluated
Figure 1 – Regional Location
Figure 2 – Project Site Location
Figure 3 – Land Cover Map

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Table A: Special-status Species Evaluated for the Livermore Community Solar Farm Project, Alameda County, California

Species	Status* (Federal/State/Other)	Habitat Requirements	Discussion
Plants			
Heartscale *Atriplex cordulata var.cordulata*	–/–/1B	Alkaline soils and seeps in chenopod scrub, meadows and seeps, playas, valley and foothill grassland. Elevation: 16–110 meters. Blooms April to October.	Not expected to occur due to disturbed condition of grassland and lack of alkaline soils.
Brittlescale *Atriplex depressa*	–/–/1B	Alkaline soils and seeps in chenopod scrub, meadows and seeps, playas, valley and foothill grassland. Elevation: 1–320 meters. Blooms April to October.	Not expected to occur due to disturbed condition of grassland and lack of alkaline soils.
Lesser saltscale *Atriplex minuscula*	–/–/1B	Alkaline sink and grassland in sandy, alkaline soils. Elevation: 20—100 meters. Blooms May to October.	Not expected to occur due to disturbed condition of grassland and lack of alkaline soils.
Congdon's tarplant *Centromadia parryi* ssp. *congdonii*	–/–/1B (EACCS)	Alkaline soils in valley and foothill grassland. Also known to occur in disturbed grasslands. Elevation: 1–230 m. Blooms May to October.	May occur, disturbed grasslands on the project site.
Hispid salty bird's beak *Chloropyron molle* ssp.*hispidum*	–/–/1B	Damp alkaline soils in meadow and seep wetlands. Elevation: 1–155 meters. Blooms June to September.	Not expected to occur due to disturbed condition of grassland and lack of alkaline soils.
Palmate-bracted salty bird's-beak *Chloropyron palmatum*	FE/SE/1B (EACCS)	Chenopod scrub, alkaline soils in valley and foothill grassland. Elevation 5–155 m. Blooms May to October.	Not expected to occur due to lack of suitable habitat (i.e., saline-alkaline soils in lowland plains and basins).
Livermore tarplant *Deinandra bacigalupii*	–/SCE/1B (EACCS)	Alkaline meadows and seeps. Elevation: 155–200 meters. Blooms June to October.	Not expected to occur due to disturbed condition of grassland and lack of alkaline soils. Species only known from five occurrences near Livermore (CNPS 2016).
San Joaquin spearscale *Extriplex joaquinana*	–/–/1B (EACCS)	Alkaline soils and seeps in chenopod scrub, meadows and seeps, playas, valley and foothill grassland. Elevation: 1–835 meters. Blooms April to October.	Not expected to occur due to disturbed condition of grassland and lack of alkaline soils.

Species	Status* (Federal/State/Other)	Habitat Requirements	Discussion
California alkali grass *Puccinellia simplex*	–/–/1B	Alkaline soils and seeps in chenopod scrub, meadows and seeps, playas, valley and foothill grassland, vernal pools. Elevation: 1–915 meters. Blooms March to May.	Not expected to occur due to disturbed condition of grassland and lack of alkaline soils and vernal pools.
Caper-fruited tropidocarpum *Tropidocarpum capparideum*	–/–/1B	Alkaline clay in valley and foothill grassland. Elevation: 1–455 m. Blooms March to April.	Not expected to occur due to lack of alkaline clay soils.
Invertebrates			
Vernal pool fairy shrimp *Branchinecta lynchi*	FT/–/– (EACCS)	Vernal pools ranging from small, clear sandstone rock pools to large, turbid, alkaline grassland valley floor pools.	Not expected to occur due to lack of vernal pools.
Longhorn fairy shrimp *Branchinecta longiantenna*	FE/–/– (EACCS)	Vernal pools ranging from small, clear sandstone rock pools to large, turbid, alkaline grassland valley floor pools.	Not expected to occur due to lack of vernal pools.
Amphibians and Reptiles			
California tiger salamander *Ambystoma californiense*	FT/ST/CSC (EACCS)	Grasslands and foothills that contain small mammal burrows (for dry-season retreats) and seasonal ponds and pools (for breeding during the rainy season).	May occur. Breeding habitat absent and lack of mammal burrows to provide dry-season underground retreats. Site is within dispersal distance of known occurrences as well as potential breeding habitat.
California red-legged frog *Rana draytonii*	FT/–/CSC (EACCS)	Ponds, streams, drainages and associated uplands; requires areas of deep, still, and/or slow-moving water for breeding.	May occur. No aquatic habitat present. Site is within dispersal distance (0.87 miles) of known CNDDB occurrence. CRLF are known to occur in Cayetano Creek, approximately 2000 feet to the west. Critical habitat is approximately 1000 feet to the northeast.
Alameda whipsnake *Masticophis lateralis euryxanthus*	FT/ST/– (EACCS)	Chaparral and sage scrub with rock outcrops, deep crevices or abundant rodent burrows.	Not expected to occur due to lack of chaparral on or adjacent to the site.

Species	Status* (Federal/State/Other)	Habitat Requirements	Discussion
Birds			
Burrowing owl *Athene cunicularia*	–/–/CSC	Open habitats (e.g., grasslands, agricultural areas) with mammal burrows or other features (e.g., culverts, pipes, and debris piles) suitable for nesting and roosting.	May occur in disturbed grassland habitat. LSA recommends that a qualified biologist conduct a preconstruction survey within 14 days of construction activities. If nesting birds are found, a qualified biologist will establish buffers around nests that are sufficient to ensure that breeding is not likely to be disrupted or adversely impacted by construction.
Mammals			
San Joaquin kit fox *Vulpes macrotis mutica*	FE/ST/– (EACCS)	Annual grasslands with scattered shrubby vegetation. Loose-textured soils required for digging burrows.	Not expected to occur. No known occurrences within 5 miles. Soil is non-friable and not suitable for burrows.

***Status Codes**
FE = federally endangered
FT = federally threatened
SE = State endangered
ST = State threatened
SCE = State Candidate Endangered
1B = California Rare Plant Rank 1B
CSC = California Species of Special ConcernEACCS = East Alameda County Conservation Strategy focal species

LSA

FIGURE 1

N

0 1000 2000
FEET

Livermore Solar
Alameda County, California
Regional Location

SOURCE: ESRI StreetMap North America (2012).

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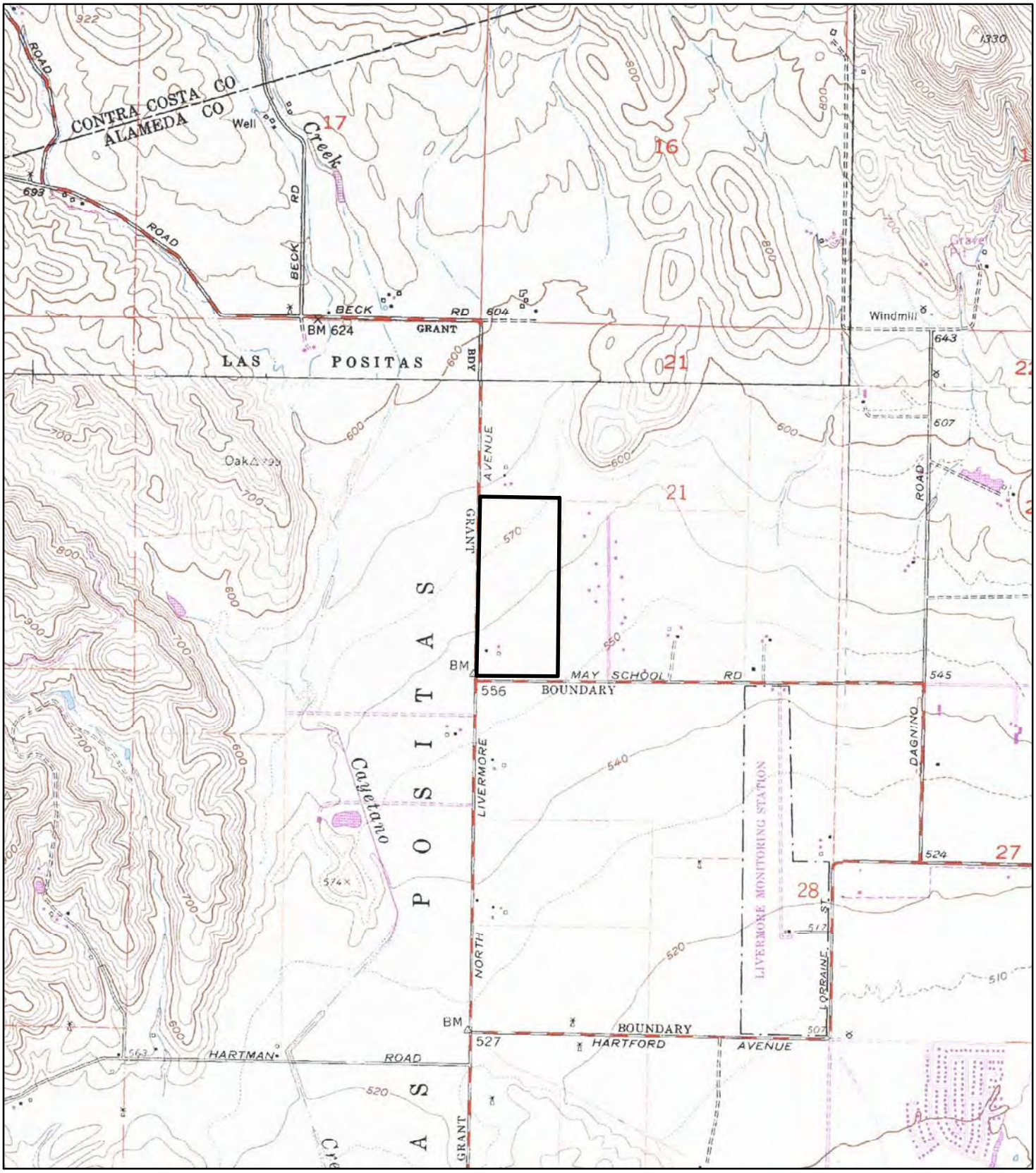

LSA

LEGEND

Project Site

FIGURE 2

N

0 1000 2000

FEET

Livermore Solar
Alameda County, California

Site Location

SOURCE: 7.5-minute Quads: *Tassajara, Calif.* (1968), *Byron Hot Springs, Calif.* (1968), *Livermore, Calif.* (1980), and *Altamont, Calif.* (1981).

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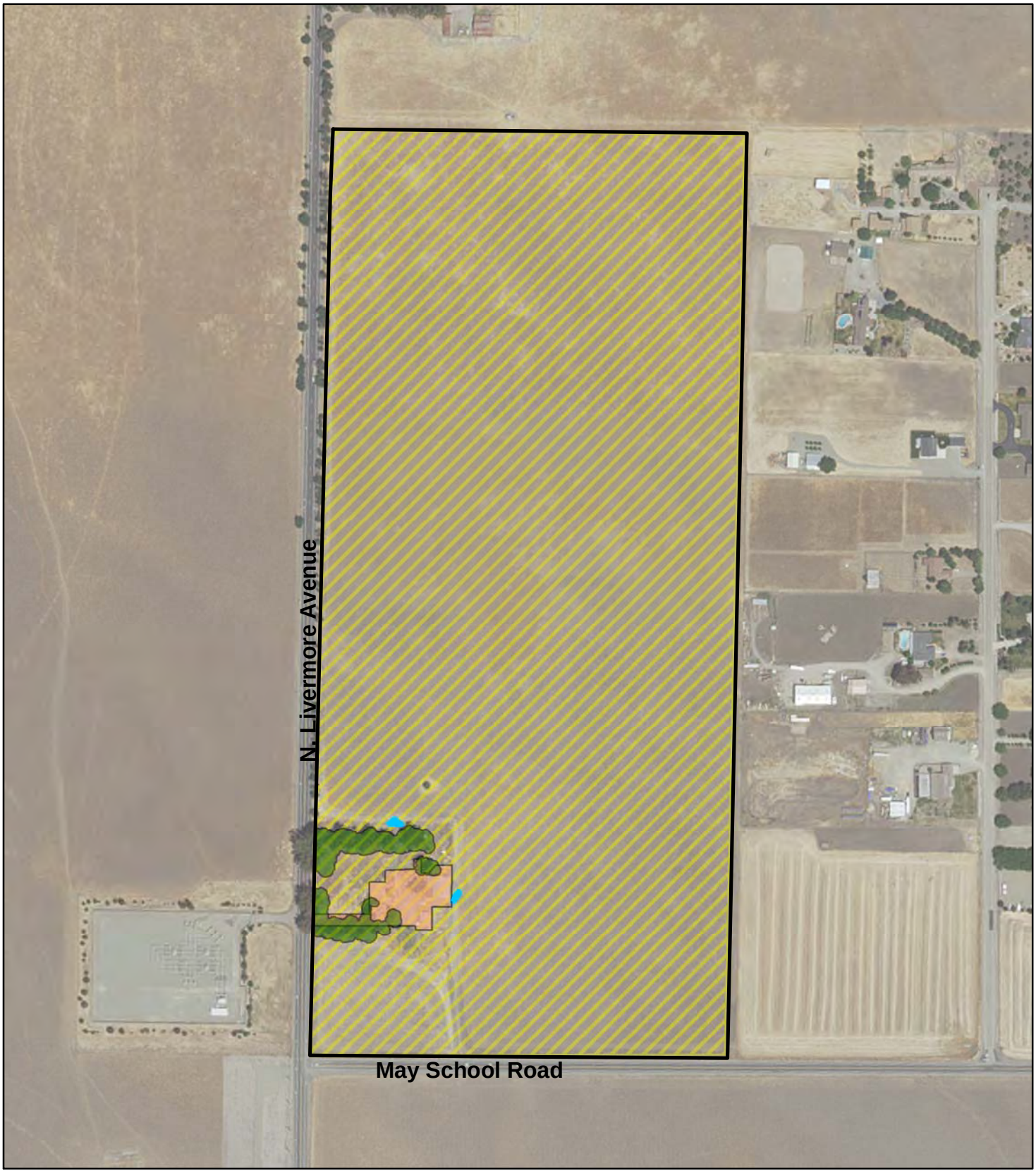

LSA

Legend

Project Site (69.21 acres)

Land Cover

Eucalyptus (1.06 acres)

Developed (0.89 acre)

Potential Seasonal Wetland

AnnualGrassland (67.26 acres)

N

0 200 400

FEET

FIGURE 3

Livermore Community Solar Farm Facility
Livermore, Alameda County, California

Land Cover

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Sunwalker Energy Livermore Community Solar Farm Congdon's Tarplant Survey Results, October 25, 2017

LSA

BERKELEY
CARLSBAD
FRESNO
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

MEMORANDUM

DATE: October 25, 2017

TO: Steve Noack, PlaceWorks

FROM: Sheryl Creer, Botanist

SUBJECT: Sunwalker Energy Livermore Community Solar Farm Congdon's Tarplant Survey Results

LSA conducted a survey for Congdon's tarplant on the approximately 70-acre project site located at 4871 North Livermore Avenue in Livermore, Alameda County, California (Figure 1). This memorandum provides the results of the survey conducted in October 2017.

METHODS

Prior to visiting the project site, LSA searched the California Natural Diversity Database (CNDDB) (CDFW 2017) for records of special-status plant species occurrences within 5 miles of the site. LSA also reviewed the California Native Plant Society (CNPS) online Inventory of Rare and Endangered Plants (CNPS 2017) and current Google Earth aerial images of the site. LSA botanist Sheryl Creer conducted a protocol-level rare plant survey within the 70-acre project site on October 3, 2017. All areas within the project site were surveyed except for the approximately 2.7-acre fenced residence in the southwest corner of the site. The survey was floristic in nature and conducted in accordance with the survey guidelines published by the CNPS (CNPS 2001), CDFW (CDFW 2009), and USFWS (USFWS 1996). For the purposes of this survey, special-status plant species are defined as follows:

- Species that are listed, formally proposed, or designated as candidates for listing as threatened or endangered under the federal Endangered Species Act
- Species that are listed, or designated as candidates for listing, as rare, threatened, or endangered under the California Endangered Species Act
- Species assigned California Rare Plant Ranks (CRPR) 1A, 1B, and 2

RESULTS

Literature Review

A search of the CNDDB database resulted in eight records of documented occurrences of Congdon's tarplant within 5 miles of the project site; occurrences within 2 miles of the project site are shown inFigure 2). In addition to Congdon's tarplant, the CNDDB database includes occurrences of 19 additional special-status species that have the potential to occur in the project vicinity. Based on a

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review of the distribution and habitat requirements of these species and the habitat conditions within the project area, five of these species, large-flowered fiddleneck (*Amsinckia grandiflora*), hairless popcorn flower (*Plagiobothrys glaber*), Mt. Diablo manzanita (*Arctostaphylos auriculata*), Brewer's dwarf flax (*Hesperolinon breweri*), California alkali grass (*Puccinellia simplex*), are not expected to occur within the project site due to lack of suitable habitat (e.g. out of the known elevation range, no meadows or seeps). The remaining 15 species included in Table A have potential to occur within the project site due to the presence of suitable habitat. Of these 15 species, 9 have blooming periods that do not overlap with the October site visit and were therefore not expected to be detectable or identifiable at that time. Those species are as follows:

- Diablo helianthella (*Helianthella castanea*)
- caper-fruited tropidocarpum (*Tropidocarpum capparideum*)
- alkali milkvetch (*Astragalus tener* var. *tener*)
- saline clover (*Trifolium hydrophilum*)
- round-leaved filaree (*California macrophylla*)
- hispid bird's-beak (*Chloropyron molle* subsp. *hispidum*)
- palmate salty bird's-beak *(Chloropyron palmatum*)
- prostrate vernal pool Navarretia (*Navarretia prostrata*)
- Mt. Diablo fairy lantern (*Calochortus pulchellus*)

Field Survey

Of the 15 species with potential to occur within the project site, 5 in addition to Congdon's tarplant were expected to be detectable (if present) during the October survey:

- Livermore tarweed (*Deinandra bacigalupii*)
- heartscale (*Atriplex cordulata* var. *cordulata*)
- brittlescale (*Atriplex depressa*)
- lesser saltbush (*Atriplex minuscula*)
- San Joaquin spearscale (*Extriplex joaquinana*)

Prior to surveying within the project site, CNDDB Occurrence #44 of Congdon's tarplant was visited as a reference site. This occurrence is located along Hartford Avenue approximately 1 mile south of

the project site, and at the time of the visit several individuals were observed in various stages of development, from bud to blooming.

The majority of the vegetation within the project site is non-native annual grassland dominated by slender wild oat (*Avena barbata*), soft chess (*Bromus hordeaceus*), and Italian rye grass (*Festuca perennis*). Other species present include foxtail barley (*Hordeum murinum*), (*Convolvulus arvensis*), Italian thistle (*Carduus pycnocephalus*), black mustard (*Brassica nigra*), and alkali mallow (*Malvella leprosa*). All plant species observed during the survey are listed in Table B. At the time of the survey, the annual grasslands were in a state of senescence, and yellow starthistle (*Centaurea solstitialis*) was at peak bloom, forming a dense stand that covered approximately 60 percent of the project site. There were a few patches of native grass on the project site composed of creeping wild rye (*Elymus triticoides* subsp. *triticoides*) and saltgrass (*Distichlis spicata).* One small area on the eastern side of the site where yellow star thistle had not invaded supported a small patch of white hayfield tarplant (*Hemizonia congesta* subsp. *luzulifolia*). An approximately 10-acre area in the southeast corner of the property appears to have recently burned, and was devoid of new vegetation. A stand of mature blue gum trees (*Eucalyptus globulus*) is also present along the perimeter of the residence.

Congdon's tarplant was not observed during this survey. However, one plant species was observed that may be hispid bird's-beak (*Chloropyron molle* subsp. *hispidum*), a CNPS 1B.1 species. The location of the observation is shown in Figure 3. All individuals encountered were in an advanced state of senescence, which reduced the number of diagnostic characters available to use for identification. The project site is within the known range of hispid bird's-beak, and there is documented occurrence of this species within 2 miles. The vegetation within the project site has been extensively disturbed, but the presence of saltgrass and other halophytic species (e.g. alkali mallow) indicate that the site is somewhat saline and could therefore provide suitable habitat for hispid bird's-beak.

SUMMARY AND RECOMMENDATION

Congdon's tarplant was not observed within the project site during the appropriately-timed survey conducted on October 3, 2017, and none of the other five species that also would have been detectable, Livermore tarweed, heartscale, brittlescale, lesser saltbush, San Joaquin spearscale, were observed. Nine rare plant species that may occur within the project site would not have been detectable (if they were present) due to the late-season timing of the survey. In order to determine whether any of these nine species are present or not, and to fulfill the CNPS, CDFW, and USFWS published guidelines for conducting appropriately-timed rare plant surveys, an additional survey should be conducted in late April or early May.

Table A: Special-Status Plant Species Evaluated for Potential to Occur

Species	Status* (Federal/ State/ CRPR)	Habitat	Potential to Occur/Survey Results
Asteraceae (Compositae) – Sunflower Family			
Congdon's tarplant *Centromadia parryi* subsp. *congdonii*	--/--/1B.1	Congdon's tarplant is an annual herb that occurs in alkaline soils in valley and foothill grassland below 750 feet in elevation. It blooms May through November.	There are eight documented occurrences of Congdon's tarplant within 5 miles of the project site (Figure 2), three of which are within 2 miles, and there is suitable habitat within the project site. One CNDDB occurrence (#44) was visited as a reference prior to surveying within the project site. This species was not detected within the project site during the appropriately-timed survey conducted in October 2017 and is therefore not expected to occur within the project site. **Not observed**
Livermore tarweed *Deinandra bacigalupii*	--/CE/1B.1	Livermore tarweed is an annual herb that occurs in alkaline meadows and seeps between 490 and 610 feet in elevation. It blooms from June through October.	There are four documented occurrences of Livermore tarweed within 5 miles of the project site, two of which are within 2 miles, and there is suitable alkaline habitat within the project site. However, this species was not detected during the appropriately-timed survey and is therefore not expected to occur within the project site. **Not observed**
Diablo helianthella *Helianthella castanea*	--/--/1B.2	Diablo helianthella is a perennial herb that occurs in broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland between 200 and 4,250 feet in elevation. It blooms from March through June.	There are four documented occurrences of Diablo helianthella within 5 miles of the project site, two of which are within 3 miles, and there is suitable grassland habitat present. This species was not detected during the survey conducted in October 2017. Diablo helianthella may occur within the project site; additional surveys within the appropriate time frame should be conducted. **May occur, additional surveys needed**
Brassicaceae(Cruciferae) – Mustard Family			
Tropidocarpum capparideum Caper-fruited tropidocarpum	--/--/1B.1	Caper-fruited tropidocarpum is an annual herb that occurs in alkaline hills in valley and foothill grassland below 1,500 feet in elevation. It blooms from March through April.	There is one documented occurrence of caper-fruited tropidocarpum within 5 miles of the project site, and there is suitable alkaline grassland habitat present. This species was not detected during the survey conducted in October 2017. Caper-fruited tropidocarpum may occur within the project site; additional surveys within the appropriate time frame should be conducted. **May occur, additional surveys needed**

Species	Status* (Federal/ State/ CRPR)	Habitat	Potential to Occur/Survey Results
Chenopodiaceae – Goosefoot Family			
Atriplex cordulata var. *cordulata* Heartscale	--/--/1B.2	Heartscale occurs on alkaline substrates in chenopod scrub, meadows and seeps, and valley and foothill grassland habitats below 1,230 feet in elevation. It blooms from April through October.	There are four documented occurrences of heartscale within 5 miles of the project site, two of which are within 2 miles, and there is suitable alkaline grassland habitat within the project site. However, this species was not detected during the appropriately-timed survey and is therefore not expected to occur within the project site. **Not observed**
Atriplex depressa Brittlescale	--/--/1B.2	Brittlescale is an annual herb that occurs in alkali and clay soils in vernal pools, playas, meadows and seeps, and valley and foothill grassland below 1,000 feet in elevation. It blooms April through October.	There are six documented occurrences of brittlescale within 5 miles of the project site, three of which are within 2 miles, and there is suitable alkaline/clay grassland habitat within the project site. However, this species was not detected during the appropriately-timed survey and is therefore not expected to occur within the project site. **Not observed**
Atriplex minuscula Lesser saltbush	--/--/1B.1	Lesser saltscale is an annual herb that occurs in sandy, alkaline soils in chenopod scrub, playas, and valley and foothill grassland below 650 feet in elevation. It blooms May through October.	There are three documented occurrences of lesser saltbush within 5 miles of the project site, one of which is within 2 miles, and there is suitable alkaline grassland habitat within the project site. However, this species was not detected during the appropriately-timed survey and is therefore not expected to occur within the project site. **Not observed**
Extriplex joaquinana San Joaquin spearscale	--/--/1B.2	San Joaquin spearscale is an annual herb that occurs in alkaline soils in chenopod scrub, meadows, alkali sinks, playas, and valley and foothill grassland below 2,750 feet in elevation. It blooms April through October.	There are 11 documented occurrences of San Joaquin spearscale within 5 miles of the project site, two of which are within 2 miles, and there is suitable alkaline grassland habitat within the project site. However, this species was not detected during the appropriately-timed survey and is therefore not expected to occur within the project site. **Not observed**

Species	Status* (Federal/ State/ CRPR)	Habitat	Potential to Occur/Survey Results
Fabaceae (Leguminosae) – Pea Family			
Astragalus tener var. *tener* Alkali milkvetch	--/--/1B.2	Alkali milkvetch is an annual herb that occurs in adobe clay soil in playa and alkaline vernal pools and flats within valley grassland below 550 feet in elevation. It blooms March through June.	There is one documented occurrence of alkali milkvetch within 5 miles of the project site, but this occurrence has not been documented since 1958 and is presumed to be extirpated. There is suitable habitat present, but this species was not detected during the survey conducted in October 2017. Alkali milkvetch may occur within the project site; additional surveys within the appropriate time frame should be conducted. **May occur, additional surveys needed**
Trifolium hydrophilum Saline clover	--/--/1B.2	Saline clover is an annual herb that occurs in marshes and swamps, mesic valley and foothill grassland with alkaline soils, and vernal pools below 1,000 feet in elevation. It blooms April through June.	There is one documented occurrence of saline clover within 5 miles of the project site, and there is suitable alkaline grassland habitat present. This species was not detected during the survey conducted in October 2017. Saline clover may occur within the project site; additional surveys within the appropriate time frame should be conducted. **May occur, additional surveys needed**
Geraniaceae – Geranium Family			
California macrophylla Round-leaved filaree	--/--/1B.2	Round-leaved filaree is an annual herb that occurs in clay substrates in cismontane woodland and valley and foothill grassland between 50 and 3,900 feet in elevation. It blooms March through May.	There is one documented occurrence of round-leaved filaree within 4 miles of the project site, and there is suitable clayey grassland habitat present. This species was not detected during the survey conducted in October 2017. Round-leaved filaree may occur within the project site; additional surveys within the appropriate time frame should be conducted. **May occur, additional surveys needed**
Liliaceae – Lily Family			
Mt. Diablo fairy-lantern *Calochortus pulchellus*	--/--/1B.2	Mt. Diablo fairy lantern is a perennial bulbiferous herb that occurs in chaparral, cismontane and riparian woodland, and valley and foothill grassland below 2,750 feet in elevation. It blooms April through June.	There is one documented occurrence of Mt. Diablo fairy lantern within 4 miles of the project site, and there is suitable grassland habitat present. This species was not detected during the survey conducted in October 2017. Mt. Diablo fairy lantern may occur within the project site; additional surveys within the appropriate time frame should be conducted. **May occur, additional surveys needed**

Species	Status* (Federal/ State /CRPR)	Habitat	Potential to Occur/Survey Results
Orobanchaceae – Broomrape Family			
Soft salty bird's-beak *Chloropyron molle* subsp. *hispidum*	--/--/1B.1	Hispid bird's-beak is a hemiparasitic herb that occurs in alkaline meadows and seeps, playas, and valley and foothill grassland below 500 feet in elevation. It blooms June through September.	There is one documented occurrence of hispid bird's-beak within 2 miles of the project site, and there is suitable alkaline grassland habitat present. A preliminary identification of this species occurring within the project site was made during the October 2017 survey. Additional surveys timed earlier in the blooming period for this species should be conducted to confirm the identity and extent of the occurrence within the project site. **May be present, additional surveys needed**
Chloropyron palmatum Palmate salty bird's-beak	FE/CE/1B.1	Palmate-bracted bird's-beak is a hemiparasitic annual herb that occurs in alkaline soils in chenopod scrub and valley and foothill grassland between 15 and 510 feet in elevation. It blooms May through October.	There is one documented occurrence of palmate salty bird's-beak within 2 miles of the project site, and there is suitable alkaline grassland present. In addition, this occurrence (#10) is mapped as co-occurring with occurrence #15 of hispid bird's-beak. Additional surveys timed earlier in the blooming period for this species should be conducted. **May occur, additional surveys needed**
Polemoniaceae – Phlox Family			
Navarretia prostrata Prostrate vernal pool navarretia	--/--/1B.1	Prostrate vernal pool navarretia is an annual herb that occurs in mesic coastal scrub, meadows and seeps, alkaline valley and foothill grasslands, and vernal pools below 2,300 feet in elevation. It blooms April through July.	There is one documented occurrence of prostrate vernal pool navarretia within 5 miles of the project site, and there is suitable alkaline grassland habitat present. Prostrate vernal pool navarretia may occur within the project site; additional surveys within the appropriate time frame should be conducted. **May occur, additional surveys needed**

***Status:**

Federal
FE: Federal Endangered

State
CE: California Endangered

California Rare Plant Rank
1B.1: Rare, threatened, or endangered in CA elsewhere; seriously threatened in CA
1B.2: Rare, threatened, or endangered in CA elsewhere; moderately threatened in CA

Table B: Plant Species Observed

Angiosperms - Dicots

Apocynaceae - Milkweed Family	
Asclepias fascicularis	Narrow-leaf milkweed
Asteraceae (Compositae) - Sunflower Family	
**Carduus pycnocephalus* subsp. *pycnocephalus*	Italian thistle
**Centaurea solstitialis*	Yellow starthistle
**Dittrichia graveolens*	Stinkwort
**Helminthotheca echioides*	Bristly ox-tongue
Hemizonia congesta subsp. *luzulifolia*	White hayfield tarweed
**Lactuca serriola*	Prickly lettuce
**Silybum marianum*	Milk thistle
Brassicaceae (Cruciferae) - Mustard Family	
**Brassica nigra*	Black mustard
**Hirschfeldia incana*	Short-podded mustard
Chenopodiaceae - Goosefoot Family	
**Atriplex rosea*	Tumbling orach
Chenopodium berlandieri var. *sinuatum*	Pitseed goosefoot
Convolvulaceae - Morning-Glory Family	
**Convolvulus arvensis*	Bindweed
Euphorbiaceae - Spurge Family	
Croton setiger	Turkey mullein
Fabaceae (Leguminosae) - Legume Family	
Lathyrus sp.	Wild pea
**Robinia pseudoacacia*	Black locust
**Trifolium hirtum*	Rose clover
**Vicia sativa*	Common vetch
Geraniaceae - Geranium Family	
**Geranium dissectum*	Cut-leaf geranium
Malvaceae - Mallow Family	
Malvella leprosa	Alkali mallow
Myrtaceae - Myrtle Family	
**Eucalyptus globulus*	Blue gum

Plantaginaceae - Plantain Family	
**Plantago lanceolata*	English plantain
Polygonaceae - Buckwheat Family	
**Rumex crispus*	Curly dock
Sapindaceae - Soapberry Family	
Aesculus californica	California buckeye
Solanaceae - Nightshade Family	
Solanum americanum	American black nightshade
Angiosperms - Monocots	
Poaceae (Gramineae) - Grass Family	
**Avena barbata*	Slender wild oat
**Bromus diandrus*	Ripgut grass
**Bromus hordeaceus*	Soft chess
**Bromus madritensis* subsp. *rubens*	Red brome
Distichlis spicata	Saltgrass
Elymus triticoides subsp. *triticoides*	Creeping wildrye
**Festuca perennis*	Italian ryegrass
**Hordeum marinum* subsp. *gussoneanum*	Mediterranean barley
**Hordeum murinum*	Foxtail barley
**Phalaris paradoxa*	Paradox canary-grass

*non-native species

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LSA

FIGURE 1

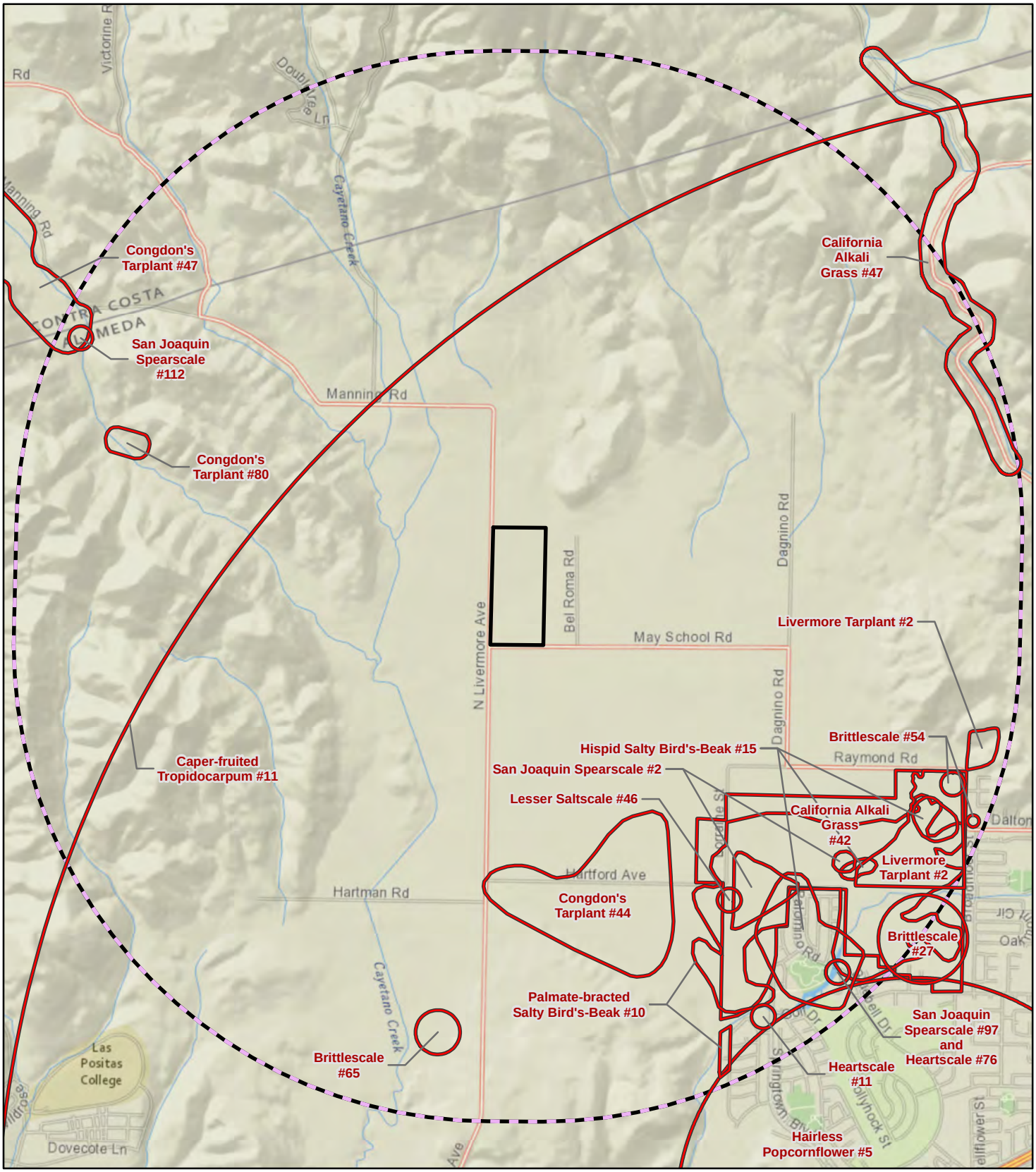
N

0 1000 2000
FEET

Livermore Solar
Alameda County, California
Regional Location

SOURCE: ESRI StreetMap North America (2012).

I:\PLN1702\GIS\Maps\Botanical Survey Memo\Figure 1_Regional Location.mxd (10/18/2017)



LSA

LEGEND

- Project Site
- 2-mile Buffer of Project Site
- CNDDB Special-status Plant Occurrence

0 1500 3000
FEET

SOURCE: National Geographic Map Service.

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FIGURE 2

Livermore Solar
Alameda County, California

CNDDB Special-status Plant Occurrences within 2 Miles of Project Site

LSA

LEGEND

Project Site

Potential Rare Plant Occurrence

FIGURE 3

N

0 200 400

FEET

SOURCE: Google Maps.

Livermore Solar
Alameda County, California

Botanical Survey Results

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