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Alameda Grant Line Solar 1 Draft EIR

for Alameda County

PLACEWORKS


COUNTY OF ALAMEDA
CALIFORNIA

May 6, 2022

Alameda Grant Line Solar 1 Draft EIR

for Alameda County

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Table of Contents

1. EXECUTIVE SUMMARY 1-1

1.1 Environmental Procedures 1-1
1.2 Summary of Proposed Project 1-3
1.3 Summary of Project Alternatives 1-3
1.4 Issues to Be Resolved 1-4
1.5 Areas of Concern 1-4
1.6 Summary of Significant Impacts and Mitigation Measures 1-5

2. INTRODUCTION 2-1

2.1 Proposed Project 2-1
2.2 EIR Scope 2-1
2.3 Environmental Review Process 2-2

3. PROJECT DESCRIPTION 3-1

3.1 Project Site Location and Characteristics 3-1
3.2 Project Objectives 3-7
3.3 Proposed Project 3-7
3.4 Required Permits and Approvals 3-14

4. ENVIRONMENTAL ANALYSIS 4-1

4.1 Aesthetics 4.1-1
4.2 Agriculture and Forestry Resources 1
4.3 Air Quality 4.3-1
4.4 Biological Resources 4.4-1
4.5 Greenhouse Gas Emissions 4.5-1
4.6 Hazards and Hazardous Materials 4.6-1
4.7 Land Use and Planning 4.7-1
4.8 Noise 4.8-1
4.9 Tribal Cultural Resources 4.9-1

5. ALTERNATIVES 5-1

5.1 Introduction 5-1
5.2 Potentially Significant Impacts 5-1
5.3 Project Objectives 5-2
5.4 Selection of a Reasonable Range of Alternatives 5-3
5.5 Alternative A: No Project 5-4

TABLE OF CONTENTS

5.6 Alternative B: Reduced Size Alternative 5-9
5.7 Environmentally Superior Alternative 5-15

6. CEQA-MANDATED SECTIONS 6-1

6.1 Impacts Found Not to be Significant 6-1
6.2 Significant Irreversible Changes 6-5
6.3 Growth-Inducing Impacts of the Proposed Project 6-6

7. ORGANIZATIONS AND PERSONS CONSULTED 7-1

APPENDICES

Appendix A: Notice of Preparation and Scoping Comments
Appendix B: Glare Study
Appendix C: Air Quality and Greenhouse Gas Emissions Data
Appendix D: Health Risk Assessment
Appendix E: Biological Resource Studies
Appendix F: Noise Data
Appendix G: Tribal Consultation Correspondence
Appendix H: Hazardous Materials Information

LIST OF FIGURES

Figure 3-1 Regional Location 3-3
Figure 3-2 Local Vicinity 3-4
Figure 3-3 Aerial Photograph 3-5
Figure 3-4 Groundmount Array Layout 3-9
Figure 3-5 Proposed Fence Surrounding Project Site 3-11
Figure 3-6 Fence Prototypes 3-12

LIST OF TABLES

Table 1-1 Summary of Impacts and Mitigation Measures 1-6
Table 4-1 Cumulative Projects within the Vicinity of the Proposed Project 4-3
Table 4.3-1 Criteria Air Pollutant Health Effects Summary 4.3-2
Table 4.3-2 Ambient Air Quality Standards for Criteria Pollutants 4.3-6
Table 4.3-3 Attainment Status of Criteria Pollutants in the San Francisco Bay Area Air Basin 4.3-16
Table 4.3-4 Ambient Air Quality Monitoring Summary 4.3-17
Table 4.3-5 BAAQMD Regional (Mass Emissions) Criteria Air Pollutant Significance Thresholds 4.3-19
Table 4.3-6 Construction-Related Criteria Air Pollutant Emissions Estimates 4.3-26
Table 4.3-7 Construction Health Risk Assessment Results 4.3-27
Table 4.4-1 Special-Status Plant Species Evaluated 4.4-8
Table 4.4-2 Special-Status Animal Species Evaluated 4.4-10
Table 4.5-1 GHG Emissions and Their Relative Global Warming Potential Compared to CO_2 ..... 4.5-2
Table 4.5-2 Summary of GHG Emissions Risk to California 4.5-5
Table 4.5-3 2017 Climate Change Scoping Plan Emissions Reductions Gap to Achieve the 2030 GHG Target 4.5-11
Table 4.5-4 2017 Climate Change Scoping Plan Emissions By Sector to Achieve the 2030 GHG Target 4.5-11
Table 4.8-1 Alameda County Residential Exterior Noise Standards 4.8-3
Table 4.8-2 Estimated Construction Noise Levels by Phase 4.8-6
Table 4.8-3 Groundborne Vibration Criteria 4.8-7
Table 4.8-4 Vibration Levels for Typical Construction Equipment 4.8-8
Table 5-1 Comparison of Project Alternatives 5-4

TABLE OF CONTENTS

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1. Executive Summary

This summary presents an overview of the proposed Alameda Grant Line Solar 1 project, herein referred to as the "proposed project" (PLN #2021-00124). This section also summarizes the alternatives to the proposed project, identifies issues to be resolved, specific areas of concern, and conclusions of the analysis contained in Chapters 4.1 through 4.9 of this Draft Environmental Impact Report (Draft EIR). For a complete description of the proposed project, please see Chapter 3, Project Description, of this Draft EIR. For a discussion of project alternatives, please see Chapter 5, Alternatives to the Project.

This Draft EIR addresses the environmental effects associated with the proposed project. The California Environmental Quality Act (CEQA) requires that local government agencies, prior to taking action on projects over which they have discretionary approval authority, consider environmental impacts of such projects. An EIR is a public document designed to provide the public, local, and State governmental agency decision-makers with an analysis of a project's potential environmental impacts to support informed decision-making.

This Draft EIR has been prepared pursuant to the requirements of CEQA[1] and the State CEQA Guidelines[2] to determine if approval of the proposed project could have a significant impact on the environment. Alameda County (the County), as the Lead Agency, has reviewed and revised as necessary 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 Draft EIR was obtained from on-site field observations; 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., air quality, cultural and tribal cultural resources, biological resources, and noise).

1.1 ENVIRONMENTAL PROCEDURES

This Draft EIR has been prepared to assess the environmental effects associated with approval and implementation of the proposed project. The main purposes of this document as established by CEQA are:

- To disclose to decision-makers and the public the significant environmental effects of proposed activities.
- To identify ways to avoid or reduce environmental damage.

[1] California Public Resources Code, Division 13, Section 2100, et seq.
[2] Title 14 of the California Code of Regulations, Division 6, Chapter 3, Section 15000, et seq.

- To prevent environmental damage by requiring implementation of feasible alternatives or mitigation measures.
- To disclose to the public reasons for agency approval of projects with significant environmental effects.
- To foster interagency coordination in the review of projects.
- To enhance public participation in the planning process.

An EIR is the most comprehensive form of environmental documentation identified in the statute and in the CEQA Guidelines. It provides the information needed to assess the environmental consequences of a proposed project, to the extent feasible. An EIR is intended to provide an objective, factually supported, full-disclosure analysis of the environmental consequences associated with a proposed project that has the potential to result in significant, adverse environmental impacts. An EIR is also one of various decision-making tools used by a Lead Agency to consider the merits and disadvantages of a project that is subject to its discretionary authority. Prior to approving a proposed project, the Lead Agency must consider the information contained in the EIR, determine whether the EIR was properly prepared in accordance with CEQA and the CEQA Guidelines, determine that it reflects the independent judgment of the Lead Agency, adopt findings concerning the project's significant environmental impacts and alternatives, and adopt a Statement of Overriding Considerations if the proposed project would result in significant impacts that cannot be avoided.

1.1.1 REPORT ORGANIZATION

This Draft EIR is organized into the following chapters:

- Chapter 1: Executive Summary. This chapter summarizes the environmental consequences that would result from implementation of the proposed project, the alternatives to the proposed project, the recommended mitigation measures, and indicates the level of significance of environmental impacts with and without mitigation.
- Chapter 2: Introduction. This chapter provides an overview describing the Draft EIR document.
- Chapter 3: Project Description. This chapter describes the proposed project in detail, including the characteristics, objectives, and the structural and technical elements of the proposed action.
- Chapter 4: Environmental Evaluation. This chapter contains the environmental analysis, divided into subchapters per environmental topic area.
- Chapter 5: Alternatives to the Proposed Project. This chapter includes an evaluation of two alternatives to the proposed project, which are the CEQA-required "No Project" Alternative, and Alternative 2, the Reduced Size Alternative.
- Chapter 6: CEQA-Mandated Sections. This chapter includes a discussion of growth inducement, cumulative impacts, significant unavoidable effects, and significant irreversible changes as a result of approval and implementation of the proposed project.
- Chapter 7: Organizations and Persons Consulted. A list of people and organizations that were contacted during the preparation of this Draft EIR for the proposed project is included in this chapter.

- Appendices: The appendices for this Draft EIR (presented in portable document file [PDF] format attached to the back cover) contain the following supporting documents:
  - Appendix A: Notice of Preparation and Scoping Comments
  - Appendix B: Glare Study
  - Appendix C: Air Quality and Greenhouse Gas Modeling
  - Appendix D: Health Risk Assessment
  - Appendix E: Biological Resources Assessment
  - Appendix F: Noise Data
  - Appendix G: Tribal Consultation Correspondence
  - Appendix H: Hazardous Materials Information

1.2 SUMMARY OF PROPOSED PROJECT

The subject property is a 23.07-acre parcel located at West Grant Line Road and Great Valley Parkway in eastern unincorporated Alameda County, California, adjacent to the unincorporated community of Mountain House in San Joaquin County. The subject property is bounded by orchard land to the north, single-family housing to the east across Great Valley Parkway, vacant agricultural land to the south, and the Delta Mendota Canal to the west.

The proposed project would develop an approximately 2 megawatt alternating current (AC) solar photovoltaic (PV) facility known as the Alameda Grant Line Solar 1. The project would have a 15-year Power Purchase Agreement (PPA) with Pacific Gas and Electric (PG&E) under their Electrical Renewable Market Adjusting Tariff (REMAT) program, which is a program specifically designed for small utility-scale local renewable energy projects (<5MW) that benefit the local communities around it by delivering renewable energy via the distribution grid. Power generated by the proposed project would connect to the existing local PG&E distribution grid and would be transmitted via an existing substation near the site. Construction would occur over a 3- to 4-month period and involve minor excavation to construct a gravel access road and electrical pads with a continuous fence installed around the perimeter of the entire site.

1.3 SUMMARY OF PROJECT ALTERNATIVES

1.3.1 NO PROJECT ALTERNATIVE

Consistent with Section 15126.6(e)(2) of the CEQA Guidelines, under the No Project Alternative, the property would remain in its existing condition and the existing layout would remain unchanged.

1.3.2 REDUCED SIZE ALTERNATIVE

Under the Reduced Size Alternative, the subject property would be developed with a photovoltaic (PV) solar farm, with approximately 200 PV solar arrays, or roughly one-half the size of the proposed project, in generally the same configuration as shown on Figure 3-4, *Alameda Grant Line Solar 1 – Groundmount*

Array Layout, in Chapter 3, *Project Description*, but with the northern fence line moved further south to accommodate less space needed for the PV solar arrays. All the components of the proposed project would be constructed, at the appropriate scale to support operation of the PV solar arrays, including the gravel access roads, concrete pads for the infrastructure, inverter, transformer, and fencing. Access to the parcel would continue to be provided via Grant Line Road. With the number of PV arrays reduced by one-half, the overall demand for water for cleaning the arrays would be reduced, as well as the amount of land and habitat impacted by the proposed project.

1.4 ISSUES TO BE RESOLVED

Section 15123(b)(3) of the CEQA Guidelines require that an EIR identify issues to be resolved, including the choice among alternatives and whether or how to mitigate significant impacts. With regard to the proposed project, the major issues to be resolved include decisions by Alameda County, as Lead Agency, related to:

- Whether this Draft EIR adequately describes the environmental impacts of the proposed project.
- Whether the Project is compatible with the character of the existing area.
- Whether the identified mitigation measures should be adopted or modified.
- Whether there are other mitigation measures that should be applied to the proposed project besides those identified in the Draft EIR.
- Whether there are any alternatives to the proposed project that would substantially lessen any of the significant impacts of the proposed project and achieve most of the basic objectives.

1.5 AREAS OF CONCERN

Alameda County issued a Notice of Preparation (NOP) for the EIR on October 21, 2021, and held a public scoping meeting on October 28, 2021, to receive agency and public comments. The scoping period for this EIR ran from October 21, 2021, to November 19, 2021, during which time responsible agencies and interested members of the public were invited to submit comments as to the scope and content of the EIR. The comments received focused primarily on aesthetics, agricultural resources, air quality, biological resources, greenhouse gas emissions, hazardous materials, land use and planning, and cumulative impacts. Comments received during the public scoping meeting are included in Appendix A, *Notice of Preparation and Scoping Comments*, of this Draft EIR.

To the extent that these issues have environmental impacts and to the extent that analysis is required under CEQA, they are addressed in Chapters 4 through 7 of this Draft EIR.

1.6 SUMMARY OF 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 few areas. Table 1-1, *Summary of Impacts and Mitigation Measures*, summarizes the conclusions of the environmental analysis contained in this Draft EIR and presents a summary of impacts and mitigation measures identified. It is organized to correspond with the environmental issues discussed in Chapters 4.1 through 4.9. The table is arranged in four columns: 1) environmental impacts, 2) significance prior to mitigation, 3) mitigation measures, and 4) significance after mitigation. For a complete description of potential impacts, please refer to the specific discussions in Chapters 4.1 through 4.9.

EXECUTIVE SUMMARY

TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
AESTHETICS			
AES-1: The proposed project would not have a substantial adverse effect on a scenic vista.	LTS	N/A	N/A
AES-2: 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-3: The proposed project would not substantially degrade the existing visual character or quality of the site and its surroundings. The proposed project would not conflict with applicable zoning and other regulations governing scenic quality.	LTS	N/A	N/A
AES-4: The proposed project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.	LTS	N/A	N/A
AES-5: The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in cumulative impacts with respect to aesthetics.	LTS	N/A	N/A
AGRICULTURE AND FORESTRY RESOURCES			
AG-1: 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.	No Impact	N/A	N/A
AG-2: The proposed project would not conflict with existing zoning for agricultural use, or a Williamson Act contract.	LTS	N/A	N/A

LTS = Less than Significant; S = Significant; SU = Significant and Unavoidable; N/A = Not Applicable

TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
AG-3: 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)).	No Impact	N/A	N/A
AG-4: The proposed project would not result in the loss of forest land or conversion of forest land to non-forest use.	No Impact	N/A	N/A
AG-5: The proposed project would not involve other changes in the existing environment which, due to their location or nature, would result in conversion of Farmland, to non-agricultural use.	No Impact	N/A	N/A
AG-6: The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in less-than-significant cumulative impacts with respect to agricultural and forestry resources.	LTS	N/A	N/A
AIR QUALITY			
AQ-1: The proposed project would not conflict with or obstruct implementation of the applicable air quality plan.	LTS	N/A	N/A

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EXECUTIVE SUMMARY

TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
AQ-2: Uncontrolled fugitive dust (PM_{10} and $PM_{2.5}$) could expose the areas that are downwind of construction sites to air pollution from construction activities without the implementation of the Air District's best management practices.	S	AQ-2: 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 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-3: The proposed project would not expose sensitive receptors to substantial pollutant concentrations.	LTS	N/A	N/A
AQ-4: The proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	LTS	N/A	N/A

LTS = Less than Significant; S = Significant; SU = Significant and Unavoidable; N/A = Not Applicable

TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
AQ-5: The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in less-than-significant cumulative impacts with respect to air quality.	LTS	N/A	N/A
BIOLOGICAL RESOURCES			
BIO-1: The proposed project may 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 by the California Department of Fish and Wildlife or United States Fish and Wildlife Service.	S	**BIO-1.1:** A qualified biologist will conduct an environmental education program for all persons employed or otherwise working on the project site before they perform any work. The program shall consist of a presentation from the biologist that includes a discussion of the biology and general behavior of special-status species on or near the site; information about the distribution and habitat needs of the species; sensitivity of the species to human activities; the status of the species pursuant to the Federal Endangered Species Act, the California Endangered Species Act, and the California Fish and Game Code including legal protection; recovery efforts; penalties for violations; and any project-specific protective measures described in this document or any subsequent documents or permits. Interpretation shall be provided for non-English speaking workers, and the same instruction shall be provided for any new workers before their performing work on the site. The biologist shall prepare and distribute wallet-sized cards or a fact sheet handout containing this information for workers to carry on the site. Upon completion of the program, employees shall sign a form stating they attended the program and understand all the protection measures. **BIO-1.2:** A qualified biologist will be on the site daily to monitor initial grubbing/ vegetation clearing, grading, and ground disturbing activities. The biologist will have the authority to stop work that may impact special-status species. **BIO-1.3:** The Applicant shall include in the contract specifications a requirement to use tightly woven fiber of natural materials (e.g., coir rolls or mats) or similar material for erosion control. Plastic mono-filament netting (erosion control matting) or similar material shall be prohibited, to prevent the entrapment of wildlife. **BIO-1.4:** Surveys for California Tiger Salamander, California red-legged frog, San Joaquin coachwhip, California glossy snake, and Coast horned lizard shall be conducted by a qualified biologist within 24 hours prior to the initiation of any	LTS

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TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
		vegetation clearing or ground disturbing activities. All suitable habitat including refuge such as burrows, under rocks, duff, debris, etc., shall be thoroughly inspected. Any listed wildlife that are encountered will be allowed to leave the work area of their own volition. **BIO-1.5:** To avoid entrapment, injury, or mortality of listed species resulting from falling into steep-sided holes or trenches, all excavated holes or trenches deeper than 12 inches shall be covered at the end of each workday with plywood or similar materials. Larger excavation that cannot easily be covered shall be ramped at the end of the workday to allow trapped animals an escape method. **BIO-1.6:** Prior to initiating construction activities, a California Department of Fish and Wildlife (CDFW)-approved biologist shall conduct surveys for burrowing owl within 500 feet of the project site, where safely accessible. This measure incorporates avoidance and minimization guidelines from the CDFW 2012 Staff Report on Burrowing Owl Mitigation. The surveys will establish the presence or absence of western burrowing owl and/or habitat features and evaluate use by owls. Surveys shall take place near sunrise or sunset in accordance with CDFW survey guidelines. All burrows or burrowing owls shall be identified and mapped. Surveys shall take place no more than 30 days prior to construction. During the breeding season (February 1–August 31), surveys shall document whether burrowing owls are nesting in or directly adjacent to disturbance areas. During the nonbreeding season (September 1–January 31), surveys shall document whether burrowing owls are using habitat in or directly adjacent to any disturbance area. Survey results shall be valid only for the season (breeding or nonbreeding) during which the survey is conducted. **BIO-1.7:** If burrowing owls are found during the breeding season (February 1–August 31), the project proponent shall avoid all nest sites that could be disturbed by project construction during the remainder of the breeding season or while the nest is occupied by adults or young. Avoidance shall include establishment of a no disturbance buffer zone (described below). Construction may occur during the breeding season if a qualified biologist monitors the nest and determines that the nest is inactive. During the nonbreeding season (September 1–January 31), the	

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TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
		project proponent shall avoid the owls and the burrows they are using. Avoidance shall include the establishment of a buffer zone. **BIO-1.8:** If occupied burrows for nonbreeding burrowing owls are not avoided, passive relocation shall be implemented. Owls shall be excluded from burrows in the immediate impact zone and within an appropriate buffer zone as recommended by the biologist in coordination with the California Department of Fish and Wildlife (CDFW) by installing one-way doors in burrow entrances. These doors shall be in place for 48 hours prior to excavation. The project area shall be monitored daily for 1 week to confirm that the owl has abandoned the burrow. Whenever possible, burrows shall be excavated using hand tools and refilled to prevent reoccupation. Plastic tubing or a similar structure shall be inserted in the tunnels during excavation to maintain an escape route for any owls inside the burrow. **BIO-1.9:** To mitigate for the alteration of burrowing owl habitat, 10 acres on the western and northern edges of the site will be protected in perpetuity under a conservation easement or deed restriction. This land is contiguous with the levee and open space associated with the Mendota Canal. A mitigation and management plan (MMP) with success criteria will be developed for this area and approved by the California Department of Fish and Wildlife (CDFW). **BIO-1.10:** The mitigation and management plan (MMP) described in Mitigation Measure BIO-1.9 for the 10-acre conservation area shall include a prescription for managing the area as habitat for Swainson's hawk. The MMP will include success criteria for Swainson's hawk habitat. **BIO-1.11:** Pre-construction surveys shall be conducted for the American badger no more than 14 days prior to the initiation of ground-disturbing activities. Surveys shall be conducted by a qualified wildlife biologist with experience and knowledge in identifying badger burrows and include walking parallel transects looking for badger burrows and sign. Any badger dens identified shall be flagged and mapped. **BIO-1.12:** In the event active badger dens are identified, a no-work buffer of 200 feet shall be established around the den and associated occupied areas. If avoidance is not feasible, a biologist shall determine if the burrow is being used as an active maternity den through utilization of remote cameras. If young are	

LTS = Less than Significant; S = Significant; SU = Significant and Unavoidable; N/A = Not Applicable

TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
		determined to be present, the burrow shall be avoided until the young have vacated the burrow as determined by a qualified biologist. If the burrow is determined not to be an active maternity den and young are not present, in coordination with the California Department of Fish and Wildlife (CDFW), a one-way eviction door shall be installed between September 1 and January 1 to passively relocate the badger and to avoid impacts during the breeding season. If the badger digs back into the burrow, CDFW staff may allow the use of live traps to relocate badgers to suitable habitat from the area of project impact. **BIO-1.13:** The mitigation and management plan (MMP) described in Measure BIO-1.9 for the 10-acre conservation area shall include prescription of an appropriate seed mix and planting plan targeted for the monarch butterfly, including milkweed and native flowering plant species known to be visited by monarch butterflies and containing a mix of flowering plant species with continual floral availability through the entire breeding season for monarch butterfly (early spring to fall). The MMP will include success criteria for monarch butterfly. **BIO-1.14:** A qualified biologist will conduct a minimum of two pre-construction surveys conducted within 30 days during appropriate activity periods (i.e., March through September) and conditions prior to the start of ground disturbing activities to look for milkweed host plants and signs of monarch breeding activity (larvae or chrysalides). Appropriate conditions for conducting the survey include surveying when temperatures are above 60 degrees Fahrenheit (15.5 degrees Celsius) and not during wet conditions (e.g., foggy, raining, or drizzling). The survey should be conducted at least 2 hours after sunrise and 3 hours before sunset and should occur at least 1 hour after rain subsides. Preferably, the survey should be conducted during sunny days with low wind speeds (less than 8 miles per hour) but surveying during partially cloudy days or overcast conditions are permissible if the surveyors can still see their own shadow. **BIO-1.15:** If monarch butterflies are observed within the project site, a plan to protect monarch butterflies shall be developed and implemented in consultation with the United States Fish and Wildlife Service. The plan shall include, but not be limited to, the following measures: ▪ Specifications for construction timing and sequencing requirements;	

LTS = Less than Significant; S = Significant; SU = Significant and Unavoidable; N/A = Not Applicable

TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
		▪ Establishment of appropriate no-disturbance buffers for milkweed and construction monitoring by a qualified biologist to ensure compliance if milkweed is identified; ▪ Restrictions associated with construction practices, equipment, or materials that may harm monarch butterflies (e.g., avoidance of pesticides/herbicides, best management practices to minimize the spread of invasive plant species); and ▪ Provisions to avoid monarch butterflies if observed away from a milkweed plant during project activity (e.g., ceasing of project activities until the animal has left the active work area on its own volition).	
BIO-2: The proposed project would not have a substantial adverse effect on any riparian habitat, but it could have a substantial adverse effect on other sensitive natural communities identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service.	No Impact	N/A	N/A
BIO-3: The proposed project would not have a substantial adverse effect on state or federally protected wetlands (marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.	No Impact	N/A	N/A
BIO-4: The proposed project would not interfere with the movement of a 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.	LTS	N/A	N/A
BIO-5: 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

LTS = Less than Significant; S = Significant; SU = Significant and Unavoidable; N/A = Not Applicable

TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
BIO-6: 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
BIO-7: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to biological resources.	LTS	N/A	N/A
CULTURAL RESOURCES *(see Initial Study contained in Appendix A of this Draft EIR for full analysis; only criteria requiring mitigation are included below)*			
b) The proposed project would not project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5, with implementation of Mitigation Measure CULT (b).	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 shall 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 subject property outside the 50-foot area while mitigation for historical resources or unique archaeological resources is being carried out.	LTS

LTS = Less than Significant; S = Significant; SU = Significant and Unavoidable; N/A = Not Applicable

TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
c) The proposed project would not disturb any human remains, including those interred outside of formal cemeteries, with implementation of Mitigation Measure CULT (c).	S	**CULT (c):** 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.	LTS

LTS = Less than Significant; S = Significant; SU = Significant and Unavoidable; N/A = Not Applicable

TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
GEOLOGY AND SOILS *(from Initial Study contained in Appendix A of this Draft EIR for full analysis; only criteria requiring mitigation are included below)*			
a) The proposed project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, with implementation of mitigation measure GEO (f).	S	GEO (f): The construction contractor shall incorporate the following in all grading, demolition, and construction plans: ▪ In the event that fossils or fossil-bearing deposits are discovered during grading, demolition, or building, excavations within 50 feet of the find shall be temporarily halted or diverted. ▪ The contractor shall notify the Alameda County Building Department and a County-approved 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 applicant determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the proposed project based on the qualities that make the resource important. The excavation plan shall be submitted to the County for review and approval prior to implementation.	LTS
GREENHOUSE GAS EMISSIONS			
GHG-1: The proposed project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant effect on the environment.	LTS	N/A	N/A
GHG-2: 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

LTS = Less than Significant; S = Significant; SU = Significant and Unavoidable; N/A = Not Applicable

TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
GHG-3: The proposed project would not, in combination with past, present, and reasonably foreseeable projects, result in cumulative impacts with respect to greenhouse gas emissions.	LTS	N/A	N/A
LAND USE AND PLANNING			
LU-1: The proposed project would not physically divide an established community.	LTS	N/A	N/A
LU-2: The proposed project would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.	LTS	N/A	N/A
LU-3: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to land use and planning.	LTS	N/A	N/A
NOISE			
NOI-1: The proposed project would not result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards.	LTS	N/A	N/A
NOI-2: Implementation of the proposed project would not result in generation of excessive groundborne vibration or groundborne noise levels.	LTS	N/A	N/A
NOI-3: Implementation of the proposed project would not expose people working within two miles of a private airstrip or airport to excessive noise levels.	No Impact	N/A	N/A

LTS = Less than Significant; S = Significant; SU = Significant and Unavoidable; N/A = Not Applicable

TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
NOI-4: The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in less-than-significant cumulative impacts with respect to noise.	LTS	N/A	N/A
TRIBAL CULTURAL RESOURCES			
TCR-1: The proposed project would have potential to cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Sections, 21074, 5020.1(k), or 5024.1.	S	**TCR-1.1:** Implement 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 County and the archaeologist shall 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 subject property outside the 50-foot area while mitigation for historical resources or unique archaeological resources is being carried out. **TCR-1.2:** Implement Mitigation Measure CULT (c): 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	LTS

LTS = Less than Significant; S = Significant; SU = Significant and Unavoidable; N/A = Not Applicable

TABLE 1-1 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Significant Impact	Significance Without Mitigation	Mitigation Measures	Significance With Mitigation
		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.	
TCR-2: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to cultural resources.	LTS	N/A	N/A

LTS = Less than Significant; S = Significant; SU = Significant and Unavoidable; N/A = Not Applicable

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2. Introduction

Pursuant to Section 21080(d) of the California Environmental Quality Act (CEQA)[1] and Section 15378[a] of the CEQA Guidelines,[2] the Alameda Grant Line Solar 1 project is considered a "project" subject to environmental review because its approval is "an action [involving the issuance to a person of a permit by a public agency] which has the potential for resulting in either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment." This Draft Environmental Impact Report (Draft EIR) provides an assessment of the potential environmental consequences the implementation of the Alameda Grant Line Solar 1 project, herein referred to as "proposed project" could potentially create. Additionally, this Draft EIR identifies mitigation measures and alternatives to the proposed project that would avoid or reduce significant impacts. This Draft EIR compares the development of the proposed project with the existing baseline condition, described in detail in Chapter 4.0, *Environmental Evaluation*. Alameda County is the Lead Agency for the proposed project. This assessment is intended to inform the County's decision-makers, responsible and trustee agencies, and the public-at-large of the nature of the proposed project and its effect on the environment.

2.1 PROPOSED PROJECT

The proposed solar power facility would include photovoltaic (PV) panels that convert solar energy, or sunlight, into electricity. The dark colored 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. The majority of the site would consist of rows of arrays, in addition to a gravel access road and electrical pads supporting the associated electrical infrastructure, including an inverter and transformer. The proposed project would connect to Pacific Gas and Electric's (PG&E) existing distribution grid near the project site.

2.2 EIR SCOPE

The following environmental topics with the potential to result in significant impacts are analyzed in this EIR:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality

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

- Biological Resources
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Land Use and Planning
- Noise
- Tribal Cultural Resources

These topics (with the exception of hazards and hazardous materials, discussed below) were identified in the Initial Study that was circulated with the Notice of Preparation, which is included in Appendix A of this EIR. This Draft EIR examines the specific short-term impacts (project construction) and long-term impacts (project operation) that would occur as a result of project approval. This Draft EIR does not include all CEQA mandated sections for review, as the Initial Study (Appendix A) determined that there was no potential for impacts for certain topics (or, for cultural resources, that impacts would be reduced to less-than-significant with the implementation of mitigation measures), including: [3]

- Cultural Resources
- Energy
- Geology and Soils
- Hydrology and Water Quality
- Mineral Resources
- Population and Housing
- Public Services
- Recreation
- Transportation
- Utilities and Service Systems
- Wildfire

Hazards and hazardous materials were initially scoped out in the Initial Study. As the result of a comment received in response to the NOP, which stated concerns on the potential for groundwater contamination resulting from panel washing, hazardous materials are further addressed in this Draft EIR.

2.3 ENVIRONMENTAL REVIEW PROCESS

2.3.1 DRAFT EIR

An Initial Study was prepared for the proposed project in October 2021. Pursuant to State CEQA Guidelines Section 15063, Alameda County determined that the proposed project could result in potentially significant environmental impacts and that an EIR would be required. In compliance with Section 21080.4 of the California Public Resources Code, the County circulated the Initial Study and Notice

[3] "Effects dismissed in an Initial Study as clearly insignificant and unlikely to occur need not be discussed further in the EIR unless the Lead Agency subsequently receives information inconsistent with the finding in the Initial Study. A copy of the Initial Study may be attached to the EIR to provide the basis for limiting the impacts discussed." (CEQA Guidelines § 15143.)

of Preparation (NOP) of an EIR for the proposed project to the Office of Planning and Research (OPR) State Clearinghouse and interested agencies and persons on October 21, 2021, for a 30-day review period that ended on November 19, 2021. A public scoping meeting was held on October 28, 2021, at 1:30 pm. Due to the COVID-19 pandemic, the scoping meeting was held via a Zoom Webinar. The NOP and scoping process solicited comments from identified responsible and trustee agencies, as well as interested parties regarding the scope of the Draft EIR. "Responsible agencies" are public agencies that carry out or approve a project for which a lead agency is conducting CEQA review; responsible agencies are all agencies other than the lead agency with discretionary approval power over the project. "Trustee agencies" are certain State agencies with jurisdiction over natural resources affected by the project. Appendix A of this Draft EIR includes the NOP, Initial Study, and comments received in response to the NOP.

The scope of this EIR was established by the Alameda County through the EIR scoping process and includes an analysis of both the direct and cumulative impacts of the proposed project. The CEQA Guidelines provide that an Initial Study may be used to assist in the preparation of an EIR by focusing the EIR's analysis on a project's effects determined to be significant.[4]

This Draft EIR will be available for review by the public and interested parties, agencies, and organizations for a 45-day comment period. During the comment period, the public is invited to submit written or e-mail comments on the Draft EIR or the proposed project to the County. Written comments should be submitted (if via email, with the subject line "Alameda Grant Line Solar 1 Project EIR") to:

Albert V. Lopez, Planning Director
Alameda County Community Development Agency
224 W. Winton Avenue, Suite 111
Hayward, CA 94544
Email: albert.lopez@acgov.org

2.3.2 FINAL EIR

Following the conclusion of the 45-day public review period for the Draft EIR, the Alameda County will review all comments received and prepare written responses to comments on environmental issues. A Final EIR will then be prepared, which contains all of the comments received, responses to comments raising environmental concerns, and any changes to the Draft EIR (if necessary). The Final EIR will then be presented to the Board of Zoning Adjustments for certification. All agencies, organizations, and individuals who commented on the Draft EIR will be notified of the availability of the Final EIR and the date of the public hearing before the Board of Supervisors. Responses to comments submitted on the Draft EIR by public agencies will be provided to those agencies at least 10 days prior to certification of the EIR. Public input is encouraged at all public hearings before the County. The Board of Zoning Adjustments will also make findings regarding each significant environmental effect of the proposed project as identified in the Final EIR. The Final EIR will need to be certified as having been prepared in compliance with CEQA by the County prior to deciding to approve or deny the proposed project.

[4] CEQA Guidelines § 15063(c)(3)

After certification of the Final EIR, the Board of Zoning Adjustments would then consider whether to approve the proposed project. The Board of Zoning Adjustments will adopt and make conditions of project approval all feasible mitigation measures identified in the EIR.

2.3.3 MITIGATION MONITORING

Public Resources Code Section 21081.6 requires that the lead agency adopt a mitigation monitoring or reporting program (MMRP) for any project for which it has adopted mitigation measures. The MMRP is intended to ensure compliance with the adopted mitigation measures during the project implementation. The MMRP for the proposed project will be completed as part of the environmental review process.

3. *Project Description*

Soltage, LLC is proposing to construct, install, operate, and maintain an approximately 2-megawatt (MW) alternating current (AC) solar photovoltaic (PV) facility known as the Alameda Grant Line Solar 1 (project). The project is located on a 23.07-acre site at West Grant Line Road and Great Valley Parkway in eastern unincorporated Alameda County, adjacent to the unincorporated community of Mountain House in San Joaquin County.

The proposed project was awarded a 15-year Power Purchase Agreement (PPA) with PG&E under their Electrical Renewable Market Adjusting Tariff (REMAT) program, which is a program specifically designed for small utility-scale local renewable energy projects (<5MW) that benefit the local communities around it by delivering renewable energy via the distribution grid. The project would have a PPA with PG&E and is anticipated to commence delivery in early 2023.

The power generated by the proposed project would be transmitted by Pacific Gas and Electric's (PG&E) distribution system at 12 kilovolts (kV) via the Herdlyn 1102 substation, located approximately 4.5 miles north of the project site, on Byron Highway near Clifton Court Forebay. The proposed project would interconnect to the local PG&E distribution grid immediately adjacent to the site, thereby providing clean, renewable energy to the electrical grid. The project would involve the construction of three new on-site utility poles along West Grant Line Road, which PG&E would connect its distribution grid to via an overhead distribution line extension from the existing 12kV pole on the south side of West Grant Line Road.

This chapter provides a detailed description of the proposed project, including the location, setting, characteristics of the project site, a project construction schedule, and a listing of required permits and approvals.

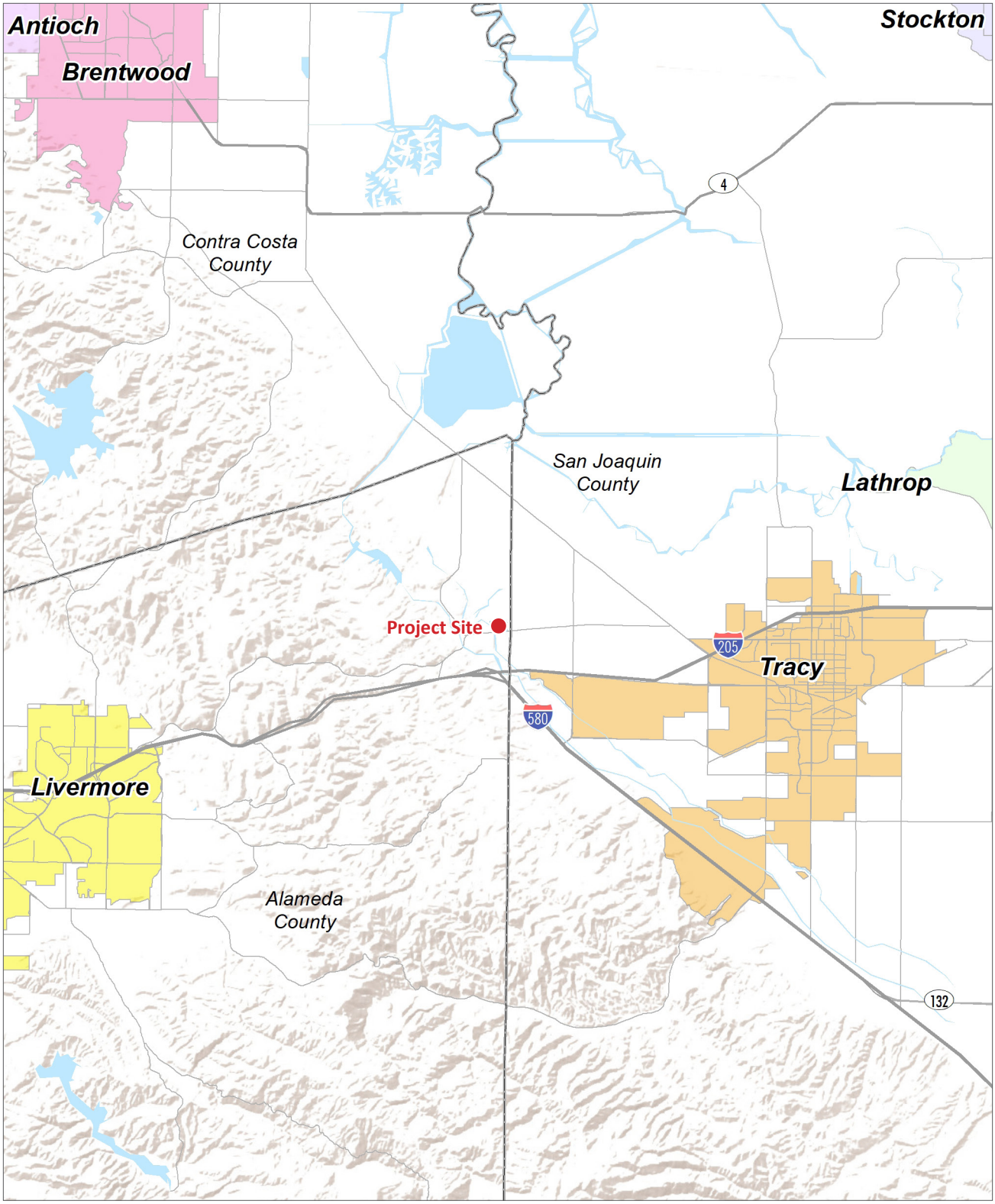
3.1 PROJECT SITE LOCATION AND CHARACTERISTICS

3.1.1 PROJECT SITE LOCATION AND SETTING

As shown on Figure 3-1, *Regional Location*, the project site is located in eastern Alameda County, at the San Joaquin County boundary, west of the City of Tracy. 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, I-580 and I-205. Direct access to the project site is provided via the I-205 interchange at Mountain House Parkway.

PROJECT DESCRIPTION

As shown on Figures 3-2, *Local Vicinity*, and 3-3, *Aerial Photograph*, the project site is located in a rural agricultural area at the intersection of West Grant Line Road and Great Valley Parkway, adjacent to the unincorporated community of Mountain House in San Juaquin County. The project site is bounded by orchard land to the north, vacant agricultural land to the south, and single-family housing to the east across Great Valley Parkway. The Delta Mendota Canal is located west of the project site. Local vehicular access to the project site is provided via Mountain House Parkway and West Grant Line Road.



Source: ESRI, 2021.
Note: Unincorporated county areas are shown in white.

Project Site County Boundaries

0 3
Scale (Miles)

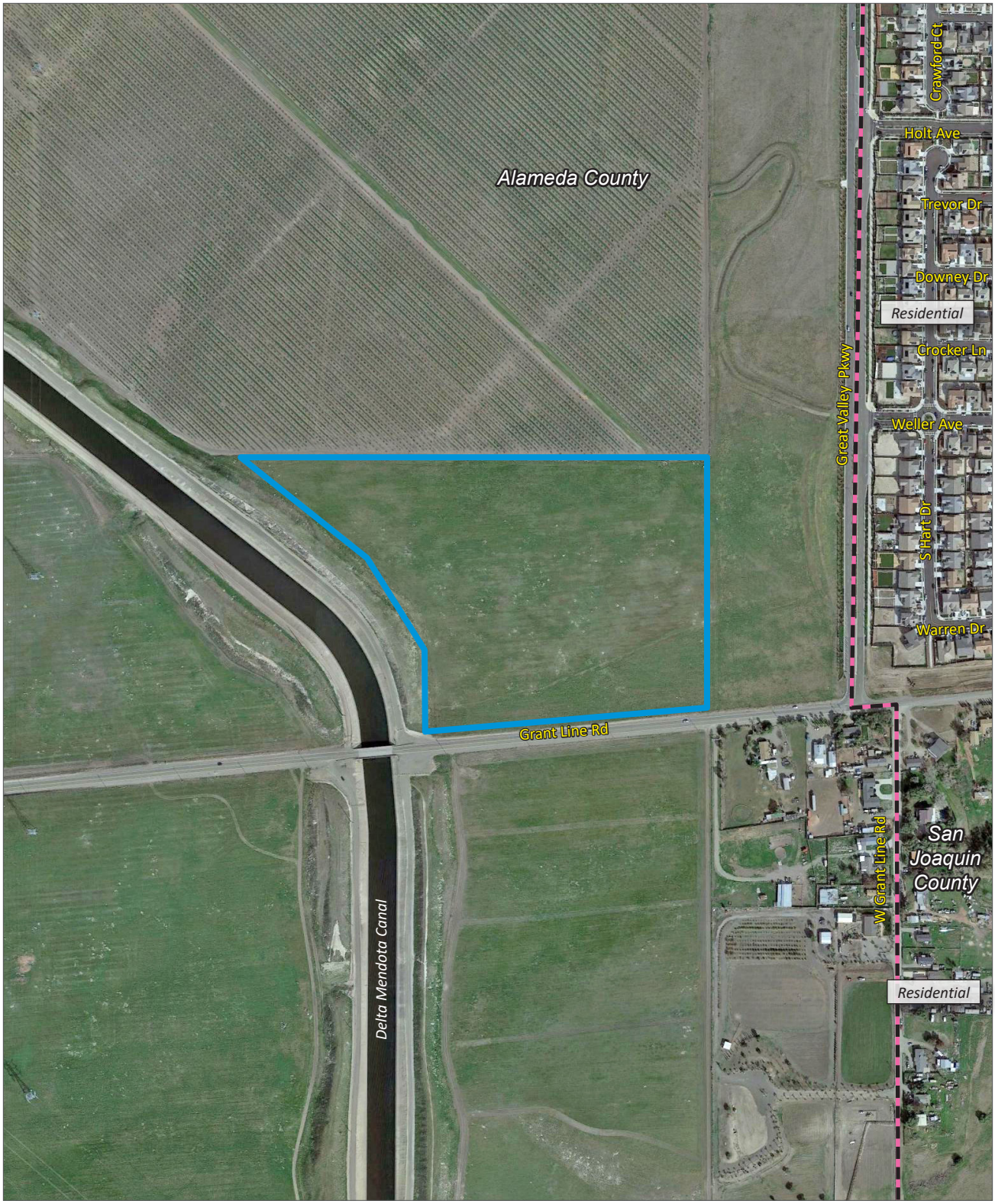
Figure 3-1
Regional Location

Source: ESRI, 2021.

Project Boundary County Boundary

0 2,000
Scale (Feet)

Figure 3-2
Local Vicinity



Source: Google Earth, 2021.

Project Boundary

County Boundary

0 500

Scale (Feet)

Figure 3-3
Aerial Photograph

3.1.2 EXISTING SITE CONDITIONS

The 23.07-acre project site is assigned Assessor's Parcel Number (APN) 99B-7650-7-1. The project site is currently undeveloped.

3.1.3 GENERAL PLAN LAND USE AND ZONING DESIGNATION

3.1.3.1 GENERAL PLAN

The project site is located within the Alameda County *East County Area Plan* (ECAP), which was amended in 2000 by voter-approved Measure D. The ECAP Planning Area encompasses 418 square miles in eastern Alameda County. The ECAP includes policies that address physical development, in addition to social, environmental, and economic issues related to land use considerations, which are intended to preserve the rural, pastoral, character of the County lands, outside of the County's Urban Growth Boundary.

The ECAP land use designation on the project site is *Large Parcel Agriculture*. This designation permits, subject to the provisions of Measure D, 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.

3.1.3.2 ZONING

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. The County Planning Commission made findings in 2008 pursuant to ACMC Sections 17.54.050 and 17.54.060 regarding district classifications of uses not listed within the Ordinance.[1] The Planning Commission made findings that a solar electric facility would not be contrary to the specific intent clauses or performance standards established for the A District and could be permitted under a conditional use permit (CUP). The County reiterated these findings to reconfirm the conditional permissibility of similar solar uses within the A District in 2011[2] and 2012.[3]

[1] County of Alameda Planning Commission, June 16, 2008, Meeting Minutes.
[2] County of Alameda East County Board of Zoning Adjustments, December 15, 2011, Resolution No. Z-11-72, PLN2011-00009.
[3] County of Alameda Board of Supervisors, February 28, 2012, Planning Meeting, Summary Action Minutes.

3.2 PROJECT OBJECTIVES

The project objectives are listed below:

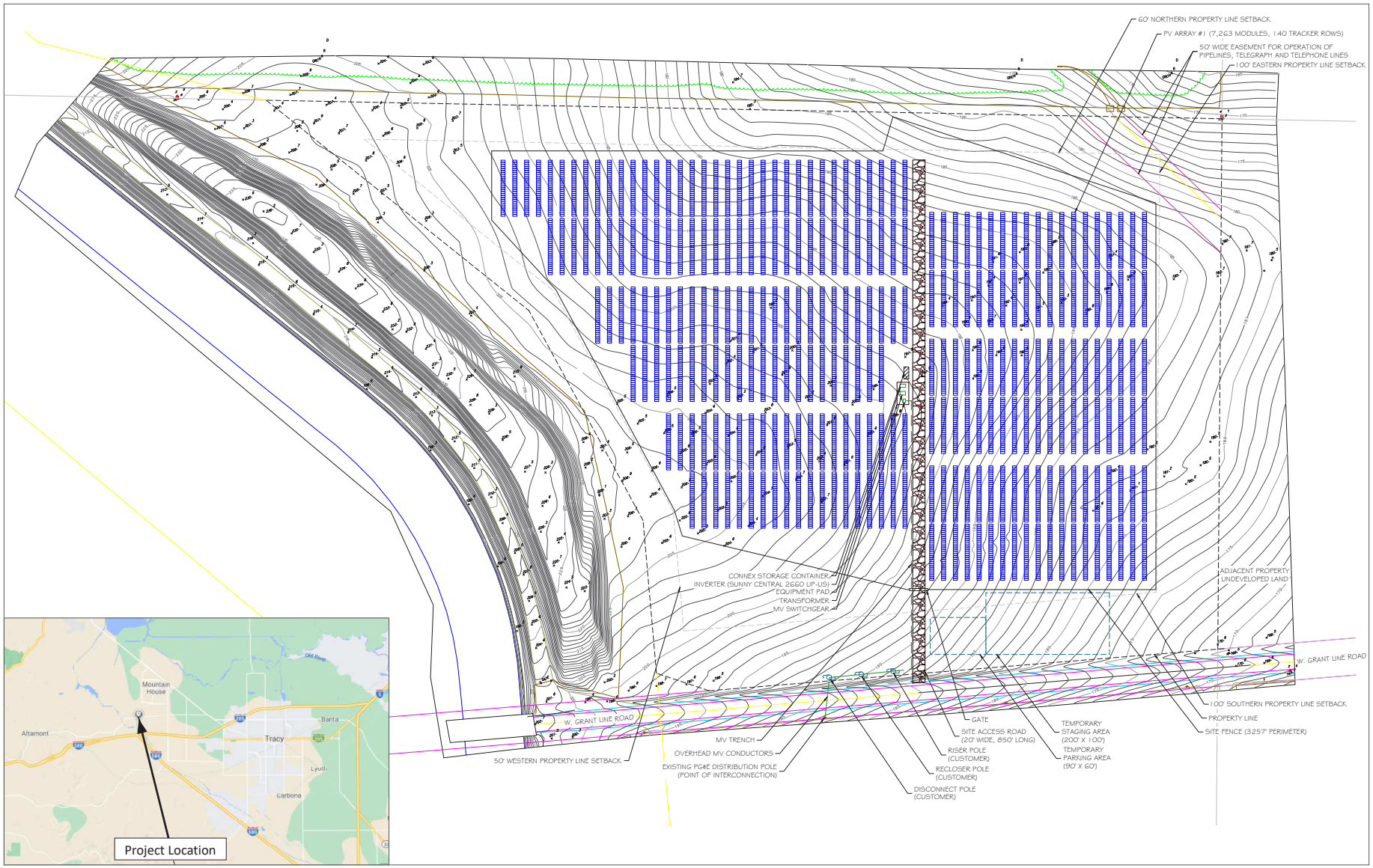
- Assist California in meeting renewable energy generation goals under Senate Bill (SB) 100. SB 100 requires 100 percent of all electric retail sales to end-use customers to come from renewable energy and zero-carbon resources by 2045;
- Create construction jobs and permanent jobs in the San Francisco Bay Area;
- Complete construction and achieve commercial operation in accordance with the schedule under the PPA;
- Locate solar power plant facilities as near as possible to electrical load to avoid capacity constraints of the transmission gird by utilizing distribution grid, and to provide system reliability;
- Utilize existing utility facilities, roads, and other infrastructure to the extent feasible to minimize impacts;
- Contribute to Alameda County climate change and renewable energy goals by generating fossil-free clean power for use by Alameda County and Bay Area residents;
- Site the project in an area with excellent solar energy resource capabilities, in order to maximize productivity from the photovoltaic panels;
- Minimize environmental impacts associated with solar development, construction, and operation, through low-impact design, short construction timeline with minimal ground disturbance, low impervious surfaces, the continued use of existing habitat by present wildlife, and ease of decommissioning at the end of the project's life in order to restore the site to its original conditions;
- Achieve economies of scale to provide approximately 2 MWs of affordable, local, wholesale solar electricity to Bay Area residents; and
- Help Bay Area Load Serving Entities in fulfilling their local renewable energy procurement goals.

3.3 PROPOSED PROJECT

The proposed project would consist of solar panels producing direct current (DC) voltage that would be converted to AC voltage through one inverter and one transformer. As shown on Figure 3-4, *Groundmount Array Layout*, the inverter and transformer would be located in the center of the site mounted on a pad foundation. The inverter and transformer specifications will be submitted upon final design.

Although the specific panel technology that would be used has not been selected, Soltage is considering the Trina Solar Duomax Twin Bifacial Dual Glass 144 Half-Cell Module, 380-405W – DEG15HC.20(II) or similar model for the proposed project. The solar panels would be a silicon model that does not use Teflon coating, and would use a non-toxic anti-reflective coating. Each panel consists of a module assembly (with frame) that is approximately 80 inches by 40 inches in size. The solar panels would be mounted on a steel racking frame that is positioned three to nine feet above ground to allow for vegetation control and periodic maintenance. The panels would include a single axis tracking system that is mounted on steel

posts driven into the ground and would have a +/- 60-degree range of motion driven by electric motors. As shown on Figure 3-4, *Groundmount Array Layout*, the solar arrays will be in three rows with the longest row in the rear. Final panel selection will be made during final design due to the ever-changing nature of the technology, however the panel used will be similar to the Trina Solar Duomax Twin module.



Source: Soltage LLC, 2021.

SYMBOL LEGEND		
SYMBOL	NAME	DESCRIPTION
	TRACKER PV MOD.	TRINA SOLAR TSM-DE15H(II)

NOTE:
SITE DIMENSIONS DERIVED FROM TOPOGRAPHICAL/GEOLOGICAL SURVEY

TOTAL SITE AREA: 1,004,825 sqft. / 23.068 Acres
USEABLE OPEN SPACE: 1,004,825 sqft. / 23.068 Acres
AREA INSIDE FENCING: 615416 sqft. / 14.128 Acres
PERCENTAGE OF SITE UTILIZED: 61.25%

PV SYSTEM SUMMARY TABLE

Array ID	Inverter ID	Mod Qty.	kW size	GCR	Tilt	Azimuth
1	Inv 1	7263	2868.89	34.7%	±60°	180°

0 280
Scale (Feet)

Figure 3-4
Groundmount Array Layout

3.3.1 SITE PREPARATION, CONSTRUCTION, AND SOLAR INSTALLATION

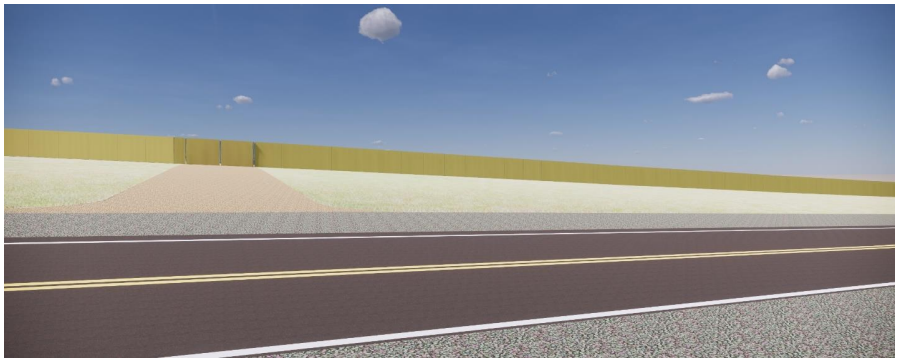
Construction of the proposed project would occur in one phase over an approximately 2-month period. Site preparation would involve minor excavation to construct the gravel access road and electrical pads. All other areas of the site will be minimally cleared and grubbed as needed with minimal ground disturbance. Additional facilities within the project footprint necessary for the photovoltaic system includes internal vehicular access ways to facilitate construction and maintenance of the solar arrays and panels, temporary parking, an equipment laydown staging area to be used during construction and routine maintenance, and additional chain-link fencing that surrounds the solar arrays within the site boundary. The proposed project would introduce 500 square feet of impervious concrete for the inverter and transformer pad for use as a base for the inverter and transformer. Other impervious surfaces include the storage container pad and the solar array piers. As shown on Figure 3-4, *Groundmount Array Layout*, a gravel access road would run north to south through the middle of the project site. The crushed aggregate rock used for the gravel access road would be delivered to the project site, requiring approximately 25 to 30 haul trips. The total estimated amount of impervious surface for the project is 2,200 square feet. Equipment used during the construction phase of the proposed project includes a backhoe, skid steer, telehandler, excavator, front loader, compactor, and pile driver.

The project would utilize 100-foot setbacks from the southern and eastern site boundaries to minimize the visual impact of the project from West Grant Line Road and the housing development east of the site on Great Valley Parkway in San Joaquin County. The western and northern boundary setbacks would be 50 and 60 feet, respectively. Furthermore, the project would include a chain link fence with plastic slats matching the color of the landscape on the southern and eastern portion of the project site between the project site and West Grant Line Road to further reduce visual impact of the solar panels from the road. The proposed fence would be 8 feet high, located 100 feet north of the site's southern boundary, and extend easterly east along the southern boundary of the project site. There would be a continuous fence installed around the perimeter of the entire solar arrays to prevent the public or unauthorized members from exposure to electrical hazards and equipment. Figure 3-5, *Project Fence Renderings*, depicts renderings of the proposed fencing that would surround the site and Figure 3-6, *Fence Prototypes*, includes fence prototypes to be used for the proposed project.

Site preparation and construction activities would adhere to the requirements of ACMC Chapter 16.36, *Grading Erosion and Sediment Control*, and Section 17.64.150, *Stormwater Management*.

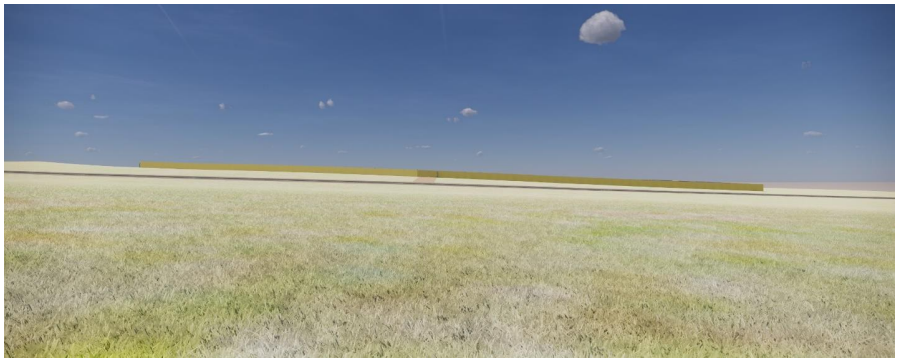
An electrical-powered video surveillance system would be installed on-site for security purposes. The system would connect to a central system at the equipment pad. A cellular radio (cell modem) would be installed to provide remote internet connection for monitoring and other internet reliant devices and systems.

No security or other nighttime lighting is proposed as part of the project.



View of Southern Fence line of Project from West Grant Line Road (looking North)

View of Eastern Fence line of Project from West Grant Line Road (looking West)

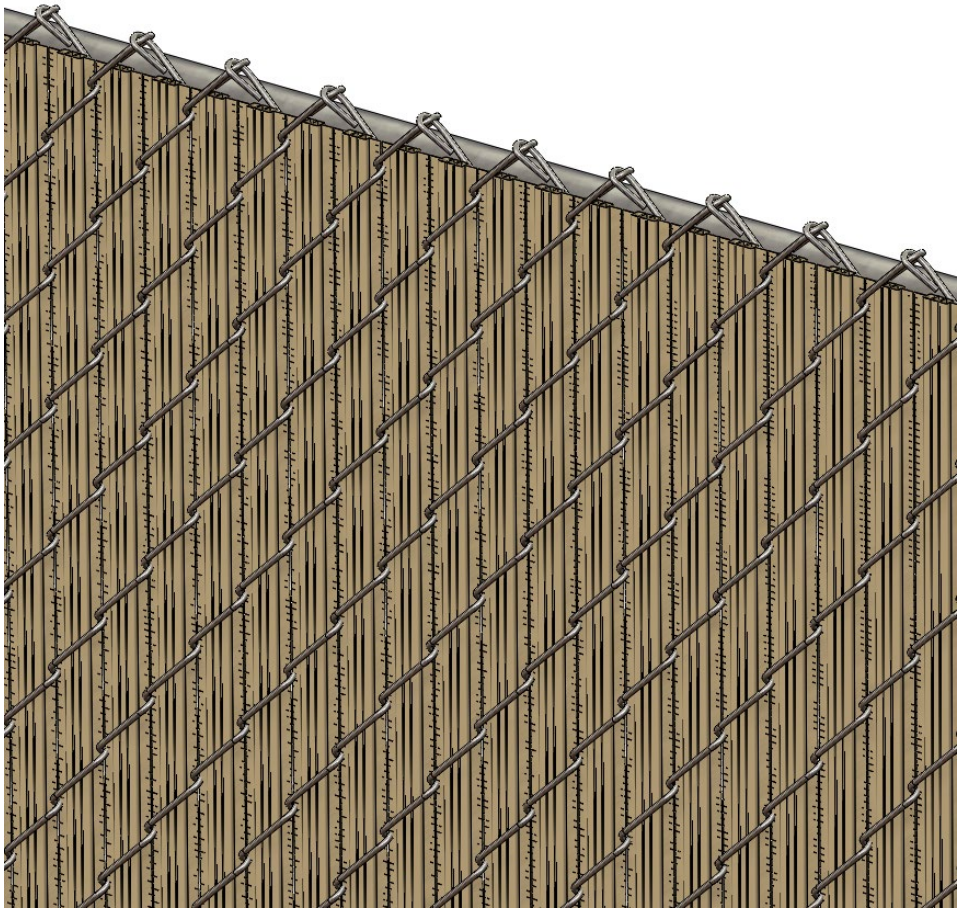


View of Southern Fence line of Project from Parcel opposite the road of the Project (across from West Grant Line Road looking North)

View of entire Eastern Fence line of Project from further east of the Project site along West Grant Line Road (looking West)

Source: Soltage, 2021.

Figure 3-5
Project Fence Renderings



Source: Soltage, 2021.

Figure 3-6
Fence Prototypes

3.3.2 SITE ACCESS

Access to the project site would be provided via a gated, graveled driveway located on West Grant Line Road. The proposed gravel access road would be overlaid with 304 cubic yards of crushed aggregate rock. Internal vehicular access ways would remain un-graveled and would connect to the gravel access road throughout the site.

3.3.3 LIGHTING

Existing sources of lighting in the vicinity of the project include exterior lighting from nearby residential development. No on-site lighting, including security or emergency lighting, is proposed as part of the project because the proposed project would be inactive during the nighttime. 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.[4] 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 and reduce glare as much as possible.[5] Therefore, no light or glare will be produced from the proposed project.

3.3.4 PROJECT OPERATION

The project would interconnect to the PG&E distribution electrical grid on the north side of West Grant Line Road, via an overhead wire, which PG&E would construct and maintain during the life of the project. The project would erect three wooden utility poles along the southern edge of the project site, where the project's 12kV electrical output would be connected. PG&E's interconnection facilities would connect to the project at one of these wooden utility poles.

During the operation period of the project, the solar modules would be washed one to two times per year with an electronic cleaning system. This cleaning system dramatically reduces the amount of water needed to clean the modules. The water source would be from the orchard located immediately north of the project, which is owned by the same property owner.[6] It is expected that water for washing would be delivered by a 500-gallon water truck with one trip per cleaning event.

3.3.5 PROJECT DECOMMISSIONING

The project is anticipated to have an expected useful life of at least 40 years. Once the expected useful life of the solar PV facility is over, it would either be refurbished and repowered or disassembled and decommissioned by the project owner. If refurbishing and repowering the solar PV facility is elected,

[4] 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 April 9, 2018.

[5] 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 April 9, 2018.

[6] Bilella, Lori. Vice President, Soltage, LLC. Personal email communication with Steve Noack, PlaceWorks, February 7, 2022.

Soltage would be required to obtain all required agreements with the landowner and all required permit approvals.

Project decommissioning would occur in accordance with the terms of the CUP and would involve the removal of all above-ground facilities and fencing, buried electrical conduits, and concrete foundations in accordance with a decommissioning plan, further described below. Equipment associated with the solar PV facility would be recycled, repurposed, or disposed of off-site, as appropriate and in accordance with all then-applicable laws and regulations.

In the event that activities associated with decommissioning involve exposure and disturbance of soils, measures for erosion and sediment control would be implemented in accordance with a future, separate, Stormwater Pollution Prevention Plan (SWPPP) specifically tailored for decommissioning. It is anticipated that decommissioning activities would involve the use of heavy equipment and labor similar to that used for construction of the project.

Post decommissioning, all areas compacted during original construction or by equipment used for decommissioning would be restored in a manner comparable to adjacent properties, or to the zoning or general plan land use designation applicable to the site at the time of decommissioning or to pre-project conditions. A decommissioning plan would be prepared and submitted to Alameda County that includes steps that would be taken to restore the site to pre-project conditions to the extent feasible.

3.4 REQUIRED PERMITS AND APPROVALS

Alameda County is the Lead Agency for the preparation and certification of the Focused EIR. Where appropriate, responsible, trustee, and other agencies will be consulted during the Focused EIR process. Subsequent development entitlements for the project may require approval of State, federal, and regional responsible and trustee agencies that may rely on the Focused EIR for decisions in their areas of expertise.

Approval of the project would require the following permits and approvals from the Alameda County:

- Conditional Use Permit
- Variance
- Building Permit
- Grading Permit
- Encroachment Permit
- Fire Clearance and Approval

4. Environmental Analysis

The following sections describe the format of the environmental analysis, the format of the thresholds of significance, and the methodology of the cumulative impact analysis.

FORMAT OF ENVIRONMENTAL ANALYSIS

The California Environmental Quality Act (CEQA) Guidelines Section 15128 allows for no analysis of environmental issues for which there is no likelihood of significant impact. Based on the conclusions in the Initial Study (Appendix A), this chapter of the Draft EIR is made up of nine subchapters, which evaluate the direct, indirect, and cumulative environmental impacts of the proposed project. In accordance with 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)], the potential environmental effects of the proposed project are analyzed for potential significant impacts in the following nine environmental issue areas, which are organized with the listed abbreviations:

- Aesthetics (AES)
- Agriculture and Forestry Resources (AG)
- Air Quality (AQ)
- Biological Resources (BIO)
- Greenhouse Gas Emissions (GHG)
- Hazards and Hazardous Materials (HAZ)
- Land Use and Planning (LU)
- Noise (NOI)
- Tribal Cultural Resources (TCR)

Each subchapter is organized into the following sections:

- Environmental Setting offers a description of the existing environmental conditions, providing a baseline against which the impacts of the proposed project can be compared, and an overview of federal, State, regional, and local regulations relevant to each environmental issue.
- Standards of Significance explains the quantitative or qualitative standards, performance levels, or criteria used to evaluate the existing setting with and without the proposed project to determine whether the impact is significant. These thresholds are based primarily on the CEQA Guidelines Appendix G Checklist.
- Impact Discussion gives an overview of the potential impacts of the proposed project and explains why impacts are found to be significant or less than significant prior to mitigation. This section also includes a discussion of cumulative impacts related to the proposed project. Impacts and mitigation measures are numbered consecutively within each topical analysis and begin with an acronym or abbreviated reference to the impact section.

THRESHOLDS OF SIGNIFICANCE

As noted above, significance criteria are identified in the Standards of Significance section. For each impact identified in the Impact Discussion section, a level of significance is determined using the following classifications:

- *Significant (S)* impacts include a description of the circumstances where an established or defined threshold would be exceeded.
- *Less than significant (LTS)* impacts include effects that are noticeable, but do not exceed established or defined thresholds, or can mitigated below such thresholds.
- *No impact* describes circumstances where there is no adverse effect on the environment.

For each impact identified as being significant, the EIR identifies mitigation measures to reduce, eliminate, or avoid the adverse effect. If one or more mitigation measure(s) would reduce the impact to a less than significant level successfully, this is stated in the EIR. *Significant and unavoidable (SU)* impacts are described where mitigation measures would not diminish these effects to less than significant levels. The identification of a program-level significant and unavoidable impact does not preclude the finding of less than significant impacts for subsequent projects that comply with the applicable regulations and meet applicable thresholds of significance.

CUMULATIVE IMPACT ANALYSIS

A cumulative impact consists of an impact created as a result of the combination of the project evaluated in the EIR, together with other reasonably foreseeable impacts not caused by the proposed project. CEQA Guidelines Section 15130 requires an EIR to discuss cumulative impacts of a project when the project's incremental effect is "cumulatively considerable." Used in this context, cumulatively considerable means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effect of probable future projects.

Where the incremental effect of a project is not "cumulatively considerable," a lead agency need not consider that effect significant but must briefly describe its basis for concluding that the incremental effect is not cumulatively considerable. Where the cumulative impact caused by the project's incremental effect and the effects of other reasonably foreseeable projects is not significant, the EIR must briefly indicate why the cumulative impact is not significant.

The cumulative impact discussions in subchapters 4.1 through 4.9 explain the geographic scope of the area affected by each cumulative effect (e.g., immediate project vicinity, city, county, watershed, or air basin). The geographic area considered for each cumulative impact depends upon the impact that is being analyzed. For example, in assessing aesthetic impacts, the pertinent geographic study area is the vicinity of the proposed project from which the new development can be publicly viewed and may contribute to a significant cumulative visual effect. In assessing macro-scale air quality impacts, on the other hand, all development within the air basin contributes to regional emissions of criteria pollutants, and basin-wide projections of emissions is the best tool for determining the cumulative effect.

CEQA Guidelines Section 15130 of the CEQA Guidelines permits two different methodologies for completion of the 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 analysis is based on a list approach with known relevant projects in the area. This includes similar projects (i.e., similar project or land uses) and other projects that are in close proximity to the project site (within approximately 2 miles of the project site). As shown in Table 4-1, *Cumulative Projects Within the Vicinity of the Proposed Project,* the County of Alameda has identified three similar projects within the Livermore Valley at the time that the Notice of Preparation for this Draft EIR was issued. In addition, active projects from the western portion of San Joaquin County (within approximately 2 miles of the project site) are included as the project site is located adjacent to the western edge of San Joaquin County.

TABLE 4-1 CUMULATIVE PROJECTS WITHIN THE VICINITY OF THE PROPOSED PROJECT

Project Name/Location	Approximate Distance from Project	Project Type	Project Size	Status
Alameda County				
Aramis Solar Energy Generation and Storage/North Livermore Avenue	12 miles	Energy	410 acres	Approved
KOLA/NextEra Battery Energy Storage/Midway Road	3.5 miles	Energy	60 acres	Pending
Vasco Road Landfill CUP	8 miles	Utility	246 acres	Pending
San Joaquin County				
19550 W Grant Line Road	0.3 miles	Residential/Major Subdivision	36 acres	Pending
22261 South Mountain House Parkway	0.9 miles	Residential/Major Subdivision	143 acres	Pending
Arnaudo Boulevard at Mountain House II Apartments	1.4 miles	Residential	8.8 acres	Pending
Telecommunications Tower/21000 South Mountain House Park	1.6 miles	Utility	900 square feet	Pending
17400 West Bethany Road	2 miles	Office/Warehouse	3 acres	Approved

Sources: Alameda County; San Joaquin County, Map of Active Planning Applications, https://www.sjgov.org/commdev/cgi-bin/cdyn.exe?grp=planning&htm=active&typ=apd, accessed January 26, 2022.

The following provides a summary of the cumulative impact setting for each impact area:

- Aesthetics: The cumulative setting for visual impacts that can be publicly viewed includes the effects of the proposed project together with other cumulative development projects in the vicinity of the subject property.
- Agriculture and Forestry Resources: The cumulative setting for agriculture and forestry resources impacts includes other agriculture and forestry land within the vicinity of the proposed project.

- Air Quality: The cumulative air quality setting is the regional growth within the San Francisco Bay Area Air Basin and San Joaquin Valley Air Basin.
- Biological Resources: The geographic scope of the cumulative analysis for biological resources is the area surrounding the subject property.
- Greenhouse Gas Emissions: The cumulative impact analyses for greenhouse gas emissions are related to the ongoing development in Alameda County and the entire region. Because greenhouse gas emissions are not confined to a particular air basin but are dispersed worldwide, the cumulative impact analysis focuses on the global impacts and thus is cumulative by nature.
- Hazards and Hazardous Materials: The cumulative setting for impacts related to hazards and hazardous materials includes Alameda County, which is the service area for the Alameda County Department of Environmental Health.
- Land Use and Planning: The cumulative setting for land use and planning considers the effects of the proposed project when considered along with other projects in the vicinity of the subject property that are pending.
- Noise: The analysis of potential cumulative noise impacts from construction and stationary sources considers the proposed project along with the cumulative projects in the immediate vicinity of the subject property. The analysis of cumulative traffic noise levels is based on cumulative traffic conditions.
- Tribal Cultural Resources: Cumulative impacts to tribal cultural resources occur when a series of actions leads to the loss of a substantial type of tribal cultural site, building, or resource.

4.1 AESTHETICS

This chapter describes the regulatory framework and existing conditions on the project site related to aesthetics, and the potential impacts of the project on aesthetics.

4.1.1 ENVIRONMENTAL SETTING

4.1.1.1 REGULATORY FRAMEWORK

This section summarizes key State and local regulations related to aesthetics concerning the proposed project. There are no federal regulations pertaining to aesthetics that directly apply to the proposed project.

State Regulations

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. The nearest State-designated scenic highway is a portion of Interstate 580 (I-580), which is located approximately 1 mile southeast 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 (CBC) is located in Part 2 of Title 24 of the CCR. The CBC is updated every three years. It is generally adopted on a jurisdiction-by-jurisdiction basis, subject to further modification based on local conditions. The CBC has been adopted for use by Alameda County pursuant to the Alameda County Municipal Code Chapter 15.08.

Local Regulations

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 1 mile south of the project

[1] California Department of Transportation, Officially Designated State Scenic Highways, https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways, accessed on October 6, 2021.

site, as a Scenic Freeway, Grant Line Road bordering the project site on the south as a Scenic Thoroughfare, and Mountain House Road to the east of 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 authorized in corridors along scenic routes with outstanding distant views above the roadbed.[3]

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 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 viewpoints.

[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 October 6, 2021.

[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 October 6, 2021.

- 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 119: The County shall require that access roads be sited and designed to minimize grading.

4.1.1.2 EXISTING CONDITIONS

Site and Vicinity Conditions

As described in Chapter 3, *Project Description*, the project site is in a rural agricultural area within Alameda County and is bounded by orchard land to the north, single-family housing to the east, vacant agricultural land to the south, and the Delta Mendota Canal to the west. More vacant agricultural land is located west of the Delta Mendota Canal. The project site is relatively flat, and currently undeveloped with little vegetation. The immediately surrounding area is also relatively flat, with the elevation increasing into the foothills approximately 1 mile west and south of the project site. New residential development is under construction to the east of the project site in the Mountain House community in San Joaquin County.

Scenic Corridors and Scenic Vistas

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. There are no scenic route corridors near the project site.[4]

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 considered for the purposes of CEQA 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.

The ECAP designates visually sensitive ridgelines, including those of Pleasanton, Main, and Sunol Ridges west of Pleasanton; ridgelines of Schafer, Shell, Skyline, Oak and Divide Ridges west of Dublin and the ridgelines above Doolan Canyon east of Dublin; ridgelines above Collier Canyon and Vasco Road and the ridgelines surrounding Brushy Peak north of Livermore; ridgelines above the vineyards south of Livermore; and ridgelines above Happy Valley south of Pleasanton. The project site is located east of the Altamont Pass adjacent to the San Joaquin County border, and is therefore outside the viewshed of these

[4] Alameda County Municipal Code, Chapter 17.104 – Scenic Route Corridors.

ridgelines.[5] The subject property is located in a relatively flat area and is not located on a major visually sensitive ridgeline, nor in the vicinity of any of these designated visually sensitive ridgelines.

The ECAP also designates viewsheds, which include the aforementioned major ridgelines, in addition to Brushy Peak, Donlan Peak, Mount Diablo, and Cresta Blanca near Arroyo Road south of Livermore. The project site is not located on or near these viewsheds.[6]

Scenic Roads and Highways

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. Alameda County has both State- and County- designated scenic roads. As described in Section 4.1.1.1, Regulatory Framework, the nearest State-designated scenic highway, I-580, is located 1 mile south of the project site.[7] As described in Section 4.1.1.1, Regulatory Framework, the nearest State-designated scenic highway is a portion of Interstate 580 (I-580), which is located approximately 1 mile southeast of the project site.[8] Additionally, the County's Scenic Route Element of the Alameda County General Plan designates Grant Line Road bordering the project site on the south as a Scenic Thoroughfare, and Mountain House Road to the east of the project site as a Scenic Rural-Recreation Route.[9]

Pursuant to the development standards outlined in the Countywide Scenic Route Element, no building or structure of more than one story, or approximately 15 feet in height is authorized in corridors along scenic routes with outstanding distant views above the roadbed.[10]

Light and Glare

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. Due to the undeveloped nature of the project site, there is no existing light pollution or glare produced from on-site. Lighting from surrounding land uses is limited primarily to exterior lighting from the residential homes east of the project site.

[5] Alameda County, 2000, East County Area Plan, page 30.

[6] Alameda County, 2000, East County Area Plan, page 32.

[7] 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.

[8] California Department of Transportation, Officially Designated State Scenic Highways, https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways, accessed on October 6, 2021.

[9] 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 October 6, 2021.

[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, page 18, accessed on April 18, 2018.

4.1.2 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant aesthetic impact if it would:

1. Have a substantial adverse effect on a scenic vista.
2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.
3. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings. (Public views of the site are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?
4. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.
5. In combination with past, present, and reasonably foreseeable projects, result in cumulative impacts with respect to aesthetics.

4.1.3 IMPACT DISCUSSION

AES-1 The proposed project would not have a substantial adverse effect on a scenic vista.

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 subject property. Long-range views of the scenic vistas would be impacted by the proposed project if the project were to block or obstruct these views. As described in Section 4.1.1.2, Existing Conditions, the project site is in a relatively flat area, is undeveloped with little vegetation, and is not located in or near a scenic vista, ridgeline, or corridor.

The primary components of the proposed project that could affect long-range views are the solar arrays and the transformers. The midpoint of the mounted solar panels would be approximately 7 feet above ground, and at maximum tilt, the height of the solar arrays would be less than 14 feet above the finished grade elevation. Therefore, regardless of the project site's proximity to scenic vistas, ridgelines, or corridors, the low height of the PV facility would not substantially block any views.

Therefore, the proposed project would not result in a substantial adverse effect on a scenic vista and the impact would be *less than significant*.

Significance Without Mitigation: Less than significant.

AES-2	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.

As discussed in Section 4.1.1.2, Existing Conditions, Grant Line Road bordering the project site on the south is a Scenic Thoroughfare, Mountain House Road to the east of the project site is a Scenic Rural-Recreation Route, and I-580 1 mile south of the project site is a State-designated scenic highway. North Livermore Avenue adjacent to the proposed project is considered a County-designated scenic corridor. However, in compliance with the Countywide Scenic Route Element, the proposed project would not include structures of a greater height than 15 feet. As described under Impact Discussion AES-1, the maximum height of the PV facility would be less than this. Additionally, in accordance with Policy 115 of the East County Area Plan, a fence around the proposed project would provide screening to minimize the visual impact of development and blend with the surrounding area. Accordingly, no impact would occur in this respect.

Furthermore, there are no notable trees, rock outcroppings, or historical buildings on the subject property that would be affected, and the proposed project would not alter long-range views to 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*.

Significance without Mitigation: Less than significant.

AES-3	The proposed project would not substantially degrade the existing visual character or quality of the site and its surroundings. The proposed project would not conflict with applicable zoning and other regulations governing scenic quality.

Installation of the proposed PV facility would represent a change in the existing visual character of the subject property and its surrounding. However, as described in Section 4.1.1.2, Existing Conditions, the project site is in a relatively flat area, is undeveloped with little vegetation, and is not located in or near a scenic vista, ridgeline, or corridor. The maximum height would be less than 14 feet, and the project site would be surrounded by fencing which would help shield views of the PV facility, as shown in Figure 3-5, *Project Figure Renderings*, in Chapter 3, *Project Description*. It would not substantially degrade the existing visual character or quality of the site and its surroundings.

The proposed project would also not conflict with applicable zoning and other regulations governing scenic quality. As described in Impact Discussion AES-2, it would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway, and therefore would not conflict with regulations pertaining to State-designated Scenic Highways. The project site is located adjacent to County-designated scenic routes, however pursuant to the development standards outlined in the Countywide Scenic Route Element, the proposed project would not include structures more than one story in height. As the project site is not included in or in the vicinity of visually sensitive ridgelines or prominent visual features as identified in the ECAP, it would not

conflict with related policies governing scenic quality. In accordance with Policy 115, and as shown in Figure 3-5 in Chapter 3, *Project Description*, the proposed project would include fencing which would largely shield views of the PV facility.

Implementation of the proposed project would alter but not degrade the existing visual character or quality of the site and its surroundings. The project would be implemented in compliance with applicable zoning and other regulations governing scenic quality. Therefore, impacts in this regard would be *less than significant.*

Significance without Mitigation: Less than significant.

AES-4 The project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

A Glare Study was prepared for the proposed project, and is included in this Draft EIR as Appendix B. The Glare Study utilized software to provide a quantified assessment of when and where glare would be predicted to occur throughout the year for the solar installation, potential effects on the human eye, and estimated maximum annual energy production. As described in the Glare Study, PV panels typically produce some glare mostly during sunrise and sunset through the spring through fall months.

As described in Chapter 3, *Project Description*, the proposed project would not include any on-site lighting, including security or emergency lighting as the project would be inactive during the nighttime. In addition, the iridescent blue panels of the PV arrays are textured with indentations in order to reduce the amount of sunlight reflect off of their surfaces and are also coated with anti-reflective materials to maximize light absorption and reduce glare as much as possible. PV panels are designed to maximize refracted light through the panels, and do not produce as much glare and reflectance as standard window glass, car windshields, white concrete, or snow.[11] As such, the proposed project would not create a new source of substantial light or glare and impacts in this regard would therefore be *less than significant.*

Significance without Mitigation: Less than significant.

AES-5 The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in cumulative impacts with respect to aesthetics.

The method used for cumulative impact analysis is described in Chapter 4.0, *Environmental Analysis*, of this Draft EIR. This cumulative analysis considers the effects of the proposed project together with other cumulative development projects in the vicinity of the subject property.

[11] 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.

As described in Chapter 4.0, *Environmental Analysis*, the cumulative development project in the vicinity of the proposed project includes proposed subdivisions, a proposed apartment building, a telecommunications tower, and an office/warehouse development within two miles of the project site in San Joaquin County.

The project site is not located in a State-or County-designated scenic vista. As discussed above, the proposed project would not block views of the ridgelines from the public rights-of-way. The project site does not contain notable trees, rock outcroppings, or historical buildings and the proposed project would not alter long-range views to the ridgelines or other natural features. The proposed project, in addition to the cumulative projects, would be required to meet the development standards required by the Scenic Route Element of the Alameda General Plan. Therefore, the proposed project would not contribute to any cumulative impacts associated with scenic highways.

The installation of the proposed PV facility would represent a change in the existing visual character of the subject property and surroundings, however, based on project site location and existing conditions, it would not substantially degrade existing visual character. Therefore, it would not contribute to cumulative impacts in this regard.

The proposed project would not create a new source of substantial light or glare, and therefore would not contribute to any cumulative impacts associated with light and glare.

The proposed project, in addition to cumulative projects, would not significantly change the visual character of the subject property and the surrounding area. Therefore, cumulative impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

4.2 AGRICULTURE AND FORESTRY RESOURCES

This chapter describes the regulatory framework and existing conditions on the project site related to agriculture and forestry resources, and the potential impacts of the project on agriculture and forestry resources.

4.2.1 ENVIRONMENTAL SETTING

4.2.1.1 REGULATORY FRAMEWORK

This section summarizes key State and local regulations related to agricultural resources concerning the proposed project. There are no federal regulations pertaining to agricultural resources that directly apply to the proposed project.

State Regulations

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 reduced a property tax assessment based upon farming and open space uses as opposed to full market value.

Farmland Mapping and Monitoring Program

The California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP) provides designations for classifications of farmland throughout the State and produces maps and statistical data used for analyzing impacts on California's agricultural resources. Agricultural land is classified according to soil quality and irrigation status, with the categories being Prime Farmland, Farmland, Farmland of Local Importance, Grazing Land, Urban and Built-Up Land, and Other Land.[1]

Local Regulations

East County Area Plan

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

- Policy 1: The County shall identify and maintain a County Urban Growth Boundary that divides areas inside the Boundary, next to existing cities, generally suitable for urban development from areas

[1] California Department of Conservation, Program Overview, https://www.conservation.ca.gov/dlrp/fmmp, accessed October 6, 2021.

outside suitable for long-term protection of natural resources, agriculture, public health and safety, and buffers between communities.

- 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, wind power, and mineral extraction), protection of sensitive viewsheds, preservation of biological resources, and the physical separation between neighboring communities.

- 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.

- Policy 73: The County shall require buffers between those areas designated for agricultural use and new non-agricultural uses within agricultural areas or abutting parcels. The size, configuration and design of buffers shall be determined based on the characteristics of the project site and the intensity of the adjacent agricultural uses, and if applicable, the anticipated timing of future urbanization of adjacent agricultural land where such agricultural land is included in a phased growth plan. The buffer shall be located on the parcel for which a permit is sought and shall provide for the protection of the maximum amount of arable, pasture, and grazing land feasible.

- Policy 85: The County shall utilize provisions of the Williamson Act and other appropriate economic incentives to support agricultural uses.

- 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.

- Policy 93: The County shall seek to stimulate agricultural investment and enhance the economic viability of existing or potential rural agricultural uses.

- Policy 98: The County shall require Site Development Review for all proposed buildings, except accessory uses related to agricultural production (see definition in Table 1), in the "A-100" (Agriculture - 100-acre minimum parcel size), "A-160" (Agriculture- 160-acre minimum parcel size), or "A-320" (Agriculture- 320-acre minimum parcel size) Districts.

4.2.1.2 EXISTING CONDITIONS

The subject property is designated as Large Parcel Agriculture by the ECAP and is zoned Agricultural (A) District pursuant to the ACMC. It is currently undeveloped. The project site is not located on land enrolled in a Williamson Act contract.[2] Pursuant to the California Department of Conservation, the subject property is designated as Grazing Land; it is not considered Prime Farmland, Unique Farmland, or Farmland of Local Importance.[3] In addition, according to the 2006 mapping data from the California Department of Forestry and Fire Protection (CAL FIRE), Alameda County does not contain any woodland or forest land cover on or in the vicinity of the project site.[4]

4.2.2 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant agriculture and forestry resources impact if it would:

1. 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.
2. Conflict with existing zoning for agricultural use, or a Williamson Act contract.
3. 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)).
4. Result in the loss of forest land or conversion of forest land to non-forest use.
5. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use
6. In combination with past, present, and reasonably foreseeable projects, result in cumulative impacts with respect to agricultural and forestry resources.

4.2.3 IMPACT DISCUSSION

AG-1	**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.**

[2] California Department of Conservation, 2015, *Alameda County Williamson Act FY 2014/2015* map.

[3] California Department of Conservation, California Important Farmland Finder, https://maps.conservation.ca.gov/DLRP/CIFF/, accessed January 3, 2022.

[4] California Department of Forestry and Fire Protection (CAL FIRE) Fire and Resource Assessment Program, 2006, *Land Cover* map.

As described in Section 4.2.1.2, Existing Conditions, the project site is not classified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Therefore, there would be *no impact*.

Significance without Mitigation: No impact.

AG-2 The proposed project would not conflict with existing zoning for agricultural use, or a Williamson Act contract.

As described in Section 4.2.1.2, Existing Conditions, the project site is not under a Williamson Act contract. Therefore, the proposed project would not conflict with a Williamson Act contract.

The project site is zoned Agricultural (A) District, for which, according to ACMC Section 17.06.030, permitted uses 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. Additionally, per ACMC Section 17.06.040, conditional uses may also include privately owned wind-electric generators. While solar electric facilities are not specifically listed under the categories of permitted or conditional uses within the A District, other uses not specifically listed as a permitted or conditional use may be allowed if they are similar in nature to other allowed uses. Solar energy facilities were previously determined by the County to be similar to wind electric generators. As described in Section 3.1.3.2, Zoning, in Chapter 3, *Project Description*, the County Planning Commission made findings in 2008 pursuant to ACMC Sections 17.54.050 and 17.54.060 regarding district classifications of uses not listed within the Ordinance, including that a solar electric facility would not be contrary to the specific intent clauses or performance standards established for the A District and could be permitted under a conditional use permit. The County reiterated these findings to reconfirm the conditional permissibility of similar solar uses within the A District in 2011 and 2012. Accordingly, the proposed project would not conflict with existing zoning. Therefore, impacts in this regard would be *less than significant*.

Significance without Mitigation: Less than significant.

AG-3 The proposed project would not conflict with existing zoning for, or cause rezoning of, forestland (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.[5] The proposed project would therefore not conflict with

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

existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned timberland production. Therefore, there would be *no impact*.

Significance without mitigation: No impact.

AG-4	The proposed project would not result in 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 and residential land uses. Therefore, the proposed 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*.

Significance without mitigation: No impact.

AG-5	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 conversion of forest land to non-forest use.

As described in Section 4.2.1.2, Existing Conditions, the project site is designated as Large Parcel Agriculture by the ECAP and is designated Grazing Land by the California Department of Conservation. It is not considered Prime Farmland, Unique Farmland, or Farmland of Local Importance. It is also not subject to a Williamson Act contract. Finally, the installation of solar panels involves minimal ground disturbance that would not permanently alter the viability of the project site to be used for agriculture, should the intent for the site change in the future. 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, and there would be *no impact.*

Significance without Mitigation: No impact.

AG-6	The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in less-than-significant cumulative impacts with respect to agricultural and forestry resources.

Cumulative impacts would occur when a series of actions leads to a loss of agricultural resources, which occurs when agricultural lands are converted to non-agricultural uses. This generally occurs in newly urbanized areas where development encroaches into agricultural areas through general plan and zoning amendments leading to the long-term conversion of agricultural lands.

As noted above, the proposed project would not involve conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use; would not conflict with existing agricultural zoning or a Williamson Act contract; would not involve changes to forest land, timberland, or timberland

zoned for Timberland Production; would not result in the loss of forest land or the conversion of forest land to non-forest use; and would not involve other changes that would result in the conversion of farmland to non-agricultural use. In addition, the installation of solar panels as described under the proposed project involves minimal ground disturbance that would not permanently alter the viability of the project site to be used for agriculture, should the intent for the site change in the future.

The analysis of cumulative impacts to agricultural lands is based on impacts of the proposed project plus development in the vicinity of the project site. As described in Table 4-1, *Cumulative Projects within the Vicinity of the Proposed Project*, in Chapter 4.0, *Environmental Analysis*, development within approximately 2 miles of the proposed project include proposed major subdivisions, a proposed apartment building, a telecommunications tower, and an office/warehouse development. Similar projects to the proposed project within Alameda County include another solar facility, a battery energy storage facility, and a grow facility.

Because the proposed project would not result in impacts to agriculture or forestry resources, it would not contribute to cumulative impacts. Similarly, the Aramis Solar Energy Generation and Storage project in Alameda County (approximately 12 miles west of the project site) was determined not to have any agricultural and forestry resource impacts.[6] The office/warehouse development in nearby San Joaquin County also was determined not to have any agricultural and forestry resource impacts.[7] While the telecommunications tower and the battery energy storage facility are within agricultural-designated lands, the other San Joaquin County projects within the vicinity of the project site are not.

Therefore, in combination with past, present, and reasonably foreseeable projects, the proposed project would result in a *less than significant* cumulative impact with respect to agricultural resources.

Significance without Mitigation: Less than significant.

[6] HELIX Environmental Planning, Inc., 2020. *Aramis Solar Energy Generation and Storage Final Environmental Impact Report*, SCH No. 2020059008.

[7] San Joaquin County Community Development Department, 2020. *PA-2000063(MP), PA-2000064(SP), & PA-2000065(SA) – Initial Study/Mitigated Negative Declaration,* SCH No. 2020070583.

4.3 AIR QUALITY

This chapter describes the regulatory framework and existing conditions related to air quality in the vicinity of the proposed project, evaluates the potential air quality impacts that could occur as a result of implementation of the proposed project related to air quality, and details mitigation measures needed to reduce significant impacts, as necessary.

The project is within the County of Alameda; and therefore, this chapter is based on the methodology recommended by the Bay Area Air Quality Management District (BAAQMD or Air District) for project-level review. The analysis focuses on air pollution from regional emissions and localized pollutant concentrations from buildout of the proposed project. In this chapter "emissions" refers to the actual quantity of pollutant, measured in pounds per day (lbs/day) or tons per year (tpy) and "concentrations" refers to the amount of pollutant material per volumetric unit of air. Concentrations are measured in parts per million (ppm), parts per billion (ppb), or micrograms per cubic meter ($\mu g/m^3$). Construction criteria air pollutant emissions modeling is included in Appendix C, *Air Quality and Greenhouse Gas Modeling,* of this Draft EIR. The construction health risk assessment (HRA) is included in Appendix D, *Health Risk Assessment*, of this Draft EIR.

4.3.1 ENVIRONMENTAL SETTING

4.3.1.1 AIR POLLUTANTS OF CONCERN

Criteria Air Pollutants

Pollutants emitted into the ambient air by stationary and mobile sources are regulated under the federal Clean Air Act ("National") and California Clean Air Act. The pollutants emitted into the ambient air by stationary and mobile sources are categorized as primary and/or secondary pollutants. Primary air pollutants are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG) also known as volatile organic compounds (VOC), nitrogen oxides (NO_x), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb) are primary air pollutants. Of these, CO, SO_2, nitrogen dioxide (NO_2), PM_{10}, and $PM_{2.5}$ are "criteria air pollutants," which means that ambient air quality standards (AAQS) have been established for them. ROG and NO_x are criteria pollutant precursors that form secondary criteria air pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and nitrogen dioxide (NO_2) are the principal secondary pollutants. Table 4.3-1, *Criteria Air Pollutant Health Effects Summary*, summarizes the potential health effects associated with the criteria air pollutants.

TABLE 4.3-1 CRITERIA AIR POLLUTANT HEALTH EFFECTS SUMMARY

Pollutant	Health Effects	Examples of Sources
Carbon Monoxide (CO)	▪ Chest pain in heart patients ▪ Headaches, nausea ▪ Reduced mental alertness ▪ Death at very high levels	▪ Any source that burns fuel such as cars, trucks, construction and farming equipment, and residential heaters and stoves
Ozone (O_3)	▪ Cough, chest tightness ▪ Difficulty taking a deep breath ▪ Worsened asthma symptoms ▪ Lung inflammation	▪ Atmospheric reaction of organic gases with nitrogen oxides in sunlight
Nitrogen Dioxide (NO_2)	▪ Increased response to allergens ▪ Aggravation of respiratory illness	▪ Same as carbon monoxide sources
Particulate Matter (PM_{10} & $PM_{2.5}$)	▪ Hospitalizations for worsened heart diseases ▪ Emergency room visits for asthma ▪ Premature death	▪ Cars and trucks (particularly diesels) ▪ Fireplaces and woodstoves ▪ Windblown dust from overlays, agriculture, and construction
Sulfur Dioxide (SO_2)	▪ Aggravation of respiratory disease (e.g., asthma and emphysema) ▪ Reduced lung function	▪ Combustion of sulfur-containing fossil fuels, smelting of sulfur-bearing metal ores, and industrial processes
Lead (Pb)	▪ Behavioral and learning disabilities in children ▪ Nervous system impairment	▪ Contaminated soil

Sources: California Air Resources Board, 2022. Common Air Pollutants: Air Pollution and Health. https://ww2.arb.ca.gov/resources/common-air-pollutants (accessed January 31, 2022).; South Coast Air Quality Management District. 2005, May. Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning. http://www.aqmd.gov/docs/default-source/planning/air-quality-guidance/complete-guidance-document.pdf.

- **Carbon Monoxide (CO)** is a colorless, odorless gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces its oxygen-carrying capacity. This results in reduced oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia, as well as for fetuses. Even healthy people exposed to high CO concentrations can experience headaches, dizziness, fatigue, unconsciousness, and even death.[1]
- **Nitrogen Oxides (NO_x)** are a by-product of fuel combustion and contribute to the formation of O_3, PM_{10}, and $PM_{2.5}$. The two major components of NO_x are nitric oxide (NO) and NO_2. The principal component of NO_x produced by combustion is NO, but NO reacts with oxygen to form NO_2, creating the mixture of NO and NO_2 commonly called NO_x. NO_2 absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO is a colorless, odorless gas formed from

[1] Bay Area Air Quality Management District, 2017, Revised California Environmental Quality Act Air Quality Guidelines.

atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure.[5] NO_2 acts as an acute irritant and in equal concentrations is more injurious than NO. At atmospheric concentrations, however, NO_2 is only potentially irritating. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis. Some increase in bronchitis in children (two and three years old) has also been observed at concentrations below 0.3 parts per million (ppm).[5]

- **Sulfur Dioxide (SO_2)** is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and from chemical processes at chemical plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO_2. When SO_2 forms sulfates (SO_4) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_x). Thus, SO_2 is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO_2 may irritate the upper respiratory tract. At lower concentrations and when combined with particulates, SO_2 may do greater harm by injuring lung tissue.[2]
- **Suspended Particulate Matter (PM_{10} and $PM_{2.5}$)** consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. In the San Francisco Bay Area Air Basin (SFBAAB or Air Basin), most particulate matter is caused by combustion, factories, construction, grading, demolition, agricultural activities, and motor vehicles. Two forms of fine particulates are now recognized and regulated. Inhalable coarse particles, or PM_{10}, include the particulate matter with an aerodynamic diameter of 10 microns (i.e., 10 millionths of a meter or 0.0004 inch) or less. Inhalable fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns or less (i.e., 2.5 millionths of a meter or 0.0001 inch). Diesel particulate matter (DPM) is also classified a carcinogen.

  Extended exposure to particulate matter can increase the risk of chronic respiratory disease. PM_{10} bypasses the body's natural filtration system more easily than larger particles and can lodge deep in the lungs. The EPA scientific review concluded that $PM_{2.5}$ penetrates even more deeply into the lungs, and this is more likely to contribute to health effects—at concentrations well below current PM_{10} standards. These health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms (e.g., irritation of the airways, coughing, or difficulty breathing). Motor vehicles are currently responsible for about half of particulates in the SFBAAB. Wood burning in fireplaces and stoves is another large source of fine particulates.[7]
- **Ozone (O_3)** is commonly referred to as "smog" and is a gas that is formed when ROGs and NO_x, both by-products of internal combustion engine exhaust, undergo photochemical reactions in the presence of sunlight. O_3 is a secondary criteria air pollutant. O_3 concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions to the formation of this pollutant. O_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. O_3 levels usually build up during the day and peak in the afternoon hours. Short-term exposure can irritate the eyes and cause constriction of the airways. Besides causing shortness of breath, it can aggravate existing respiratory diseases such as

[2] Bay Area Air Quality Management District, 2017, Revised California Environmental Quality Act Air Quality Guidelines.

asthma, bronchitis, and emphysema. Chronic exposure to high ozone levels can permanently damage lung tissue. O_3 can also damage plants and trees and materials such as rubber and fabrics.[3]

- Reactive Organic Gases (ROGs)/ Volatile Organic Compounds (VOCs) are compounds composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of ROGs. Other sources of ROGs include evaporative emissions from paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROGs, but rather by reactions of ROGs to form secondary pollutants such as O_3. There are no AAQS established for ROGs. However, because they contribute to the formation of O_3, the Air District has established a significance threshold for this pollutant.
- Lead (Pb) is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phasing out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers. Because emissions of lead are found only in projects that are permitted by the Air District, lead is not an air quality of concern for the proposed project.

Toxic Air Contaminants

The California Health and Safety Code defines a Toxic Air Contaminant (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 US Code Section 7412[b]) is a toxic air contaminant. People exposed to toxic air pollutants at sufficient concentrations and durations may have an increased chance of getting cancer or experiencing other serious health effects. These health effects can include damage to the immune system, as well as neurological, reproductive (e.g., reduced fertility), developmental, respiratory, and other health problems.[4] CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control measures. The majority of the estimated health risks from TACs can be attributed to relatively few compounds. The most important compounds are particulate matter from diesel-fueled engines.

Diesel Particulate Matter

In 1998, CARB identified DPM as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particles are 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs. According to the Air District, PM emitted from diesel engines contributes to

[3] Bay Area Air Quality Management District, 2017. Revised California Environmental Quality Act Air Quality Guidelines.
[4] United States Environmental Protection Agency, 2019, Health and Environmental Effects of Hazardous Air Pollutants, https://www.epa.gov/haps/health-and-environmental-effects-hazardous-air-pollutants.

more than 85 percent of the cancer risk within the SFBAAB. Cancer risk from TACs is highest near major DPM sources.[5]

4.3.1.2 REGULATORY FRAMEWORK

Federal, state, and local air districts have passed laws and regulations intended to control and enhance air quality. Land use in the city is subject to the rules and regulations imposed by the United States Environmental Protection Agency (USEPA), CARB, the California Environmental Protection Agency and BAAQMD. The regulatory framework that is potentially applicable to the proposed project is also summarized below.

Federal and State

Ambient air quality standards have been adopted at federal and State levels for criteria air pollutants. In addition, both the federal and State governments regulate the release of TACs. The proposed project is in the SFBAAB and is subject to the rules and regulations imposed by the Air District, the National AAQS adopted by the USEPA, and the California AAQS adopted by the CARB. Federal, State, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized below.

Ambient Air Quality Standards

The Clean Air Act was passed in 1963 by the United States Congress and has been amended several times. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The Clean Air Act allows states to adopt more stringent standards or to include other pollutants. The California Clean Air Act, signed into law in 1988, requires all areas of the state to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS.

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 "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.

Both California and the federal government have established health-based AAQS for seven air pollutants, which are shown in Table 4.3-2, *Ambient Air Quality Standards for Criteria Pollutants*. These pollutants are O_3, NO_2, CO, SO_2, coarse inhalable PM_{10}, $PM_{2.5}$, and Pb. In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

[5] Bay Area Air Quality Management District, 2014, Improving Air Quality & Health in Bay Area Communities, Community Air Risk Evaluation Program Retrospective & Path Forward (2004-2013).

TABLE 4.3-2 AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS

Pollutant	Averaging Time	California Standard[a]	Federal Primary Standard[b]	Major Pollutant Sources
Ozone (O_3)[c]	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	*	0.030 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm	
	24 hours	0.04 ppm	0.14 ppm	
Respirable Coarse Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 µg/m^3	150 µg/m^3	
Respirable Fine Particulate Matter ($PM_{2.5}$)[d]	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 µg/m^3	
Lead (Pb)	30-Day Average	1.5 µg/m^3	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarter	*	1.5 µg/m^3	
	Rolling 3-Month Average	*	0.15 µg/m^3	
Sulfates (SO_4)[e]	24 hours	25 µg/m^3	*	Industrial processes.
Visibility Reducing Particles	8 hours	ExCo =0.23/km visibility of 10≥ miles	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.

TABLE 4.3-2 AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS

Pollutant	Averaging Time	California Standard[a]	Federal Primary Standard[b]	Major Pollutant Sources
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation.
Vinyl Chloride	24 hours	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Notes: ppm: parts per million; µg/m^3; micrograms per cubic meter; *Standard has not been established for this pollutant/duration by this entity.
a. California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
b. National standards (other than O_3, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.
c. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
d. On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
e. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. The 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
Source: California Air Resources Board, 2016, May 4, Ambient Air Quality Standards. https://ww2.arb.ca.gov/resources/documents/ambient-air-quality-standards-0

California has also adopted a host of other regulations that reduce criteria pollutant emissions, including:

- Assembly Bill (AB) 1493: Pavley Fuel Efficiency Standards
- Title 20 California Code of Regulations (CCR): Appliance Energy Efficiency Standards
- Title 24, Part 6, CCR: Building Energy Efficiency Standards
- Title 24, Part 11, CCR: Green Building Standards Code

Tanner Air Toxics Act and Air Toxics "Hot Spot" Information and Assessment Act

Public exposure to TACs is a significant environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. 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 US Code Section 7412[b]) is a TAC.

Under State law, the California Environmental Protection Agency, acting through CARB, is authorized to identify a substance as a TAC if it 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.

California regulates TACs primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act sets up a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance (i.e., a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions. To date, CARB has established formal control measures for 11 TACs that are identified as having no safe threshold.

Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment (HRA), and if specific thresholds are exceeded, are required to communicate the results to the public through notices and public meetings.

CARB has promulgated the following specific rules to limit TAC emissions:

- 13 CCR Chapter 10, Section 2485, *Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling*.
- 13 CCR Chapter 10, Section 2480, *Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools*.
- 13 CCR Section 2477 and Article 8, *Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate*.

Regional Regulations

Bay Area Air Quality Management District

The BAAQMD is the agency responsible for ensuring that the National and California AAQS are attained and maintained in the SFBAAB. Air quality conditions in the SFBAAB have improved significantly since the BAAQMD was created in 1955.[6] The BAAQMD prepares air quality management plans (AQMP) to attain ambient air quality standards in the SFBAAB. The BAAQMD prepares ozone attainment plans for the National O_3 standard and clean air plans for the California O_3 standard. The BAAQMD prepares these air quality management plans in coordination with Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) to ensure consistent assumptions about regional growth.

[6] Bay Area Air Quality Management District, 2010 (Revised 2017), Appendix C: Sample Air Quality Setting, in California Environmental Quality Act Air Quality Guidelines.

Bay Area Air Quality Management District 2017 Clean Air Plan

BAAQMD adopted the 2017 "Clean Air Plan: Spare the Air, Cool the Climate" (2017 Clean Air Plan) on April 19, 2017, making it the most recently adopted comprehensive plan. The 2017 Clean Air Plan incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. The 2017 Clean Air Plan serves as an update to the adopted Bay Area 2010 Clean Air Plan and continues to provide the framework for SFBAAB to achieve attainment of the California and National AAQS. The 2017 Clean Air Plan updates the Bay Area's ozone plan, which is based on the "all feasible measures" approach to meet the requirements of the California Clean Air Act. It sets a goal of reducing health risk impacts to local communities by 20 percent between 2015 and 2020 and lays the groundwork for reducing GHG emissions in the Bay Area to meet the State's 2030 GHG reduction target and 2050 GHG reduction goal. It also includes a vision for the Bay Area in a post-carbon year 2050 that encompasses the following:

- Construct buildings that are energy efficient and powered by renewable energy.
- Walk, bicycle, and use public transit for the majority of trips and use electric-powered autonomous public transit fleets.
- Incubate and produce clean energy technologies.
- Live a low-carbon lifestyle by purchasing low-carbon foods and goods in addition to recycling and putting organic waste to productive use.

A c multipollutant control strategy was developed to be implemented in the next three to five years to address public health and climate change and to set a pathway to achieve the 2050 vision. The control strategy includes 85 control measures to reduce emissions of ozone, particulate matter, TACs, and GHG from a full range of emission sources. These control measures cover the following sectors: 1) stationary (industrial) sources; 2) transportation; 3) energy; 4) agriculture; 5) natural and working lands; 6) waste management; 7) water; and 8) super-GHG pollutants and 9) buildings. The proposed control strategy is based on the following key priorities:

- Reduce emissions of criteria air pollutants and toxic air contaminants from all key sources.
- Reduce emissions of "super-GHGs" such as methane, black carbon, and fluorinated gases.
- Decrease demand for fossil fuels (gasoline, diesel, and natural gas).
    - Increase efficiency of the energy and transportation systems.
    - Reduce demand for vehicle travel, and high-carbon goods and services.
- Decarbonize the energy system.
    - Make the electricity supply carbon-free.
    - Electrify the transportation and building sectors. [7]

[7] Bay Area Air Quality Management District, 2017, April 19, Final 2017 Clean Air Plan, Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area, http://www.baaqmd.gov/plans-and-climate/air-quality-plans/current-plan.

Community Air Risk Evaluation Program

The BAAQMD Community Air Risk Evaluation program was initiated in 2004 to evaluate and reduce health risks associated with exposure to outdoor TACs in the Bay Area, primarily DPM. . The last update to this program was in 2014.Based on findings of the latest report, DPM was found to account for approximately 85 percent of the cancer risk from airborne toxics. Carcinogenic compounds from gasoline-powered cars and light duty trucks were also identified as significant contributors: 1,3-butadiene contributed 4 percent of the cancer risk-weighted emissions, and benzene contributed 3 percent. Collectively, five compounds—DPM, 1,3-butadiene, benzene, formaldehyde, and acetaldehyde—were found to be responsible for more than 90 percent of the cancer risk attributed to emissions. All of these compounds are associated with emissions from internal combustion engines. The most important sources of cancer risk-weighted emissions were combustion-related sources of DPM, including on-road mobile sources (31 percent), construction equipment (29 percent), and ships and harbor craft (13 percent). Overall, cancer risk from TAC dropped by more than 50 percent between 2005 and 2015, when emissions inputs accounted for State diesel regulations and other reductions.

The major contributor to acute and chronic non-cancer health effects in the Air Basin is acrolein (C_3H_4O). Major sources of acrolein are on-road mobile sources and aircraft near freeways and commercial and military airports.[8] Currently CARB does not have certified emission factors or an analytical test method for acrolein. Since the appropriate tools needed to implement and enforce acrolein emission limits are not available, the Air District does not conduct health risk screening analysis for acrolein emissions.[9]

Assembly Bill 617 Community Action Plans

AB 617 was signed into law in July 2017 to develop a new community-focused program to reduce exposure more effectively to air pollution and preserve public health in environmental justice communities. AB 617 directs CARB and all local air districts to take measures to protect communities disproportionally impacted by air pollution through monitoring and implementing air pollution control strategies.

On September 27, 2018, CARB approved BAAQMD's recommended communities for monitoring and emission reduction planning. The State approved communities for year 1 of the program as well as communities that would move forward over the next five years. Bay Area recommendations included all the Community Air Risk Evaluation areas, areas with large sources of air pollution (refineries, seaports, airports, etc.), areas identified via statewide screening tools as having pollution and/or health burden vulnerability, and areas with low life expectancy.[10]

[8] Bay Area Air Quality Management District, 2006. Community Air Risk Evaluation Program, Phase I Findings and Policy Recommendations Related to Toxic Air Contaminants in the San Francisco Bay Area. http://www.baaqmd.gov/Divisions/Planning-and-Research/Planning-Programs-and-Initiatives/CARE-Program/~/media/54D434A0EB8348B78A71C4DE32831544.ashx, accessed March 1, 2020.

[9] Bay Area Air Quality Management District, 2010, Air Toxics NSR Program, Health Risk Screening Analysis Guidelines. http://www.baaqmd.gov/~/media/Files/Engineering/Air%20Toxics%20Programs/hrsa_guidelines.ashx, accessed March 1, 2020.

[10] BAAQMD. 2019, April 16, San Francisco Bay Area Community Health Protection Program, https://www.baaqmd.gov/~/media/files/ab617-community-health/2019_0325_ab617onepager-pdf.pdf?la=en.

- Year 1 Communities:
  - *West Oakland.* The West Oakland community was selected for BAAQMD's first Community Action Plan. In 2017, cancer risk from sources in West Oakland (local sources) was 204 in a million. The primary sources of air pollution in West Oakland include heavy trucks and cars, port and rail sources, large industries, and to a lesser extent other sources such as residential sources (i.e., wood burning). The majority (over 90 percent) of cancer risk is from DPM.[11]
  - *Richmond.* Richmond was selected for a community monitoring plan in year 1 of the AB 617 program. The Richmond area is in western Contra Costa County and includes most of the city of Richmond and portions of El Cerrito. It also includes communities just north and east of Richmond, such as San Pablo and several unincorporated communities, including North Richmond. The primary goals of the Richmond monitoring effort are to leverage historical and current monitoring studies, to better characterize the area's mix of sources, and to more fully understand the associated air quality and pollution impact. [12]
- Year 2 to 5 Communities: East Oakland/San Leandro, Eastern San Francisco, the Pittsburg-Bay Point area, San Jose, Tri-Valley, and Vallejo are slated for action in years 2 to 5 of the AB 617 program.[13]

Air District Rules and Regulations

Regulation 7, Odorous Substances

Sources of objectionable odors may occur within the City. The Air District's Regulation 7, Odorous Substances, places general limitations on odorous substances and specific emission limitations on certain odorous compounds. Odors are also regulated under the Air District 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." Under the Air District's Rule 1-301, a facility that receives three or more violation notices within a 30-day period can be declared a public nuisance.

Other Air District Regulations

In addition to the plans and programs described above, the Air District administers a number of specific regulations on various sources of pollutant emissions that would apply to the proposed project:

- Regulation 2, Rule 2, Permits, New Source Review
- Regulation 2, Rule 5, New Source Review of Toxic Air Contaminants
- Regulation 2, Rule 6, Permits, Major Facility Review

[11] BAAQMD. 2019, October 2, West Oakland Community Action Plan, https://www.baaqmd.gov/community-health/community-health-protection-program/west-oakland-community-action-plan.

[12] BAAQMD. 2019, April 16, San Francisco Bay Area Community Health Protection Program, https://www.baaqmd.gov/~/media/files/ab617-community-health/2019_0325_ab617onepager-pdf.pdf?la=en.

[13] BAAQMD. 2019, April 16, San Francisco Bay Area Community Health Protection Program, https://www.baaqmd.gov/~/media/files/ab617-community-health/2019_0325_ab617onepager-pdf.pdf?la=en.

- Regulation 6, Rule 1, General Requirements
- Regulation 6, Rule 2, Commercial Cooking Equipment
- Regulation 8, Rule 3, Architectural Coatings
- Regulation 8, Rule 4, General Solvent and Surface Coatings Operations
- Regulation 11, Rule 2, Asbestos, Demolition, Renovation and Manufacturing)

Local Regulations

Alameda County Transportation Commission

The Alameda County Transportation Commission (Alameda CTC) is the congestion management agency for Alameda County, tasked with developing a comprehensive transportation improvement program among local jurisdictions that will reduce traffic congestion and improve land use decision-making and air quality. Alameda CTC's latest congestion management program (CMP) is called the 2019 Alameda County Congestion Management Program[14]. Alameda CTC's countywide transportation model must be consistent with the regional transportation model developed by the MTC with ABAG data. The countywide transportation model is used to help evaluate cumulative transportation impacts of local land use decisions on the CMP system. In addition, Alameda CTC's updated CMP describes strategies to measure the performance of the county's multimodal transportation system, address roadway congestion and improve the performance of a multimodal system, and connect transportation and land use planning to reduce regional vehicle miles traveled (VMT) in accordance with Senate Bill 375 (SB 375). The 2019 CMP update incorporates several actions identified as next steps in the 2017 CMP and closely aligns the CMP with the 2016 Countywide Transportation Plan, the 2050 Plan Bay Area, and other related efforts and legislative requirements (e.g., AB 32 and SB 375) to better integrate transportation and land use for achieving GHG reductions. The 2021 CMP administrative update was approved in October 2021, which builds off the program requirements and methodologies in the 2019 CMP to continue to improve the countywide transportation system.[15]

Plan Bay Area

MTC and ABAG adopted *Plan Bay Area* 2050 on October 21, 2021.[16] *Plan Bay Area* provides transportation and environmental strategies to continue to meet the regional transportation-related GHG reduction goals of SB 375. Strategies to reduce GHG emissions include focusing housing and commercial construction in walkable, transit-accessible places; investing in transit and active transportation; and shifting the location of jobs to encourage shorter commutes. To achieve MTC's/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 the region in Priority Development Areas (PDAs). PDAs are transit-

[14] Alameda County Transportation Commission, adopted September 2019, Congestion Management Program https://www.alamedactc.org/wp-content/uploads/2021/12/2019_Alameda_County_CMP_FINAL.pdf

[15] Alameda County Transportation Commission, adopted October 2021, Congestion Management Program https://www.alamedactc.org/wp-content/uploads/2021/12/2021_CMP_Update_FINAL.pdf

[16] Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC). 2021, August, *Plan Bay Area 2050*. https://www.planbayarea.org/sites/default/files/documents/2021-05/Draft_Plan_Bay_Area_2050_May2021_0.pdf, accessed on August 27, 2021.

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.

Alameda County General Plan

The Alameda County General Plan Community Climate Action Plan (CCAP), adopted in 2014, outlines a course of action to reduce community-wide GHG emissions generated within the unincorporated areas of Alameda County[17]. 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 CCAP 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[18].

- 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.

4.3.1.3 EXISTING CONDITIONS

San Francisco Bay Area Air Basin Conditions

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. 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.[19] The following are the natural factors in the SFBAAB that affect air pollution:

[17] Alameda County (Unincorporated Areas), adopted February 4 2014, Community Climate Action Plan, http://www.acgov.org/cda/planning/generalplans/documents/110603_Alameda_CCAP_Final.pdf.

[18] Alameda County Community Development Agency, adopted May 5 1995, East County Area Plan: A Portion of the Alameda County General Plan, http://www.acgov.org/cda/planning/generalplans/documents/EastCountyAreaPlancombined.pdf.

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

- Meteorology: The SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays, which distort normal wind flow patterns. The Coast Range[20] splits in the Bay Area, creating a western coast gap, the Golden Gate, and an eastern coast gap, the Carquinez Strait, which allows air to flow in and out of the Bay Area and the Central Valley. The climate is dominated by the strength and location of a semi-permanent, subtropical high-pressure cell. During the summer, the Pacific high-pressure cell is centered over the northeastern Pacific Ocean, resulting in stable meteorological conditions and a steady northwesterly wind flow. Upwelling of cold ocean water from below the surface because of the northwesterly flow produces a band of cold water off the California coast. The cool and moisture-laden air approaching the coast from the Pacific Ocean is further cooled by the presence of the cold-water band, resulting in condensation and the presence of fog and stratus clouds along the Northern California coast. In the winter, the Pacific high-pressure cell weakens and shifts southward, resulting in wind flow offshore, the absence of upwelling, and the occurrence of storms. Weak inversions coupled with moderate winds result in a low air pollution potential.
- Wind Patterns: During the summer, winds flowing from the northwest are drawn inland through the Golden Gate and over the lower portions of the San Francisco Peninsula. Immediately south of Mount Tamalpais in Marin County, the northwesterly winds accelerate considerably and come more directly from the west as they stream through the Golden Gate. This channeling of wind through the Golden Gate produces a jet that sweeps eastward and splits off to the northwest toward Richmond and to the southwest toward San José when it meets the East Bay Hills. Wind speeds may be strong locally in areas where air is channeled through a narrow opening, such as the Carquinez Strait, the Golden Gate, or the San Bruno Gap.

  The air flowing in from the coast to the Central Valley, called the sea breeze, begins developing at or near ground level along the coast in late morning or early afternoon and the sea breeze deepens and increases in velocity while spreading inland. Under normal atmospheric conditions, the air in the lower atmosphere is warmer than the air above it. In the winter, the SFBAAB frequently experiences stormy conditions with moderate to strong winds, as well as periods of stagnation with very light winds. Winter stagnation episodes (i.e., conditions where there is little mixing, which occurs when there is a lack of or little wind) are characterized by nighttime drainage flows in coastal valleys. Drainage is a reversal of the usual daytime air-flow patterns; air moves from the Central Valley toward the coast and back down toward the Bay from the smaller valleys within the SFBAAB.
- Temperature: Summertime temperatures in the SFBAAB are determined in large part by the effect of differential heating between land and water surfaces. On summer afternoons, the temperatures at the coast can be 35 degrees Fahrenheit cooler than temperatures 15 to 20 miles inland; at night, this contrast usually decreases to less than 10 degrees Fahrenheit. In the winter, the relationship of minimum and maximum temperatures is reversed. During the daytime the temperature contrast between the coast and inland areas is small, whereas at night the variation in temperature is large.
- Precipitation: The SFBAAB is characterized by moderately wet winters and dry summers. Winter rains (November through March) account for about 75 percent of the average annual rainfall. The amount of annual precipitation can vary greatly from one part of the SFBAAB to another, even within short distances. In general, total annual rainfall can reach 40 inches in the mountains, but it is often less

[20] The Coast Ranges traverses California's west coast from Humboldt County to Santa Barbara County.

than 16 inches in sheltered valleys. During rainy periods, ventilation (rapid horizontal movement of air and injection of cleaner air) and vertical mixing (an upward and downward movement of air) are usually high, and thus pollution levels tend to be low (i.e., air pollutants are dispersed more readily into the atmosphere rather than accumulate under stagnant conditions). However, during the winter, frequent dry periods do occur, where mixing and ventilation are low and pollutant levels build up.

- Wind Circulation: Low wind speed contributes to the buildup of air pollution because it allows more pollutants to be emitted into the air mass per unit of time. Light winds occur most frequently during periods of low sun (fall and winter, and early morning) and at night. These are also periods when air pollutant emissions from some sources are at their peak, namely, commuter traffic (early morning) and wood-burning appliances (nighttime). The problem can be compounded in valleys, when weak flows carry the pollutants up-valley during the day, and cold air drainage flows move the air mass down-valley at night. Such restricted movement of trapped air provides little opportunity for ventilation and leads to buildup of pollutants to potentially unhealthful levels.
- Inversions: An inversion is a layer of warmer air over a layer of cooler air. Inversions affect air quality conditions significantly because they influence the mixing depth (i.e., the vertical depth in the atmosphere available for diluting air contaminants near the ground). There are two types of inversions that occur regularly in the SFBAAB. Elevation inversions[21] are more common in the summer and fall, and radiation inversions[22] are more common during the winter. The highest air pollutant concentrations in the SFBAAB generally occur during inversions.

Attainment Status of the SFBAAB

The AQMP provides the framework for air quality basins to achieve attainment of the State and federal AAQS through the State Implementation Plan. Areas that meet AAQS are classified attainment areas, and areas that do not meet these standards are classified nonattainment areas. Severity classifications for O_3 range from marginal, moderate, and serious to severe and extreme.

- Unclassified: A pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.
- Attainment: A pollutant is in attainment if the AAQS for that pollutant was not violated at any site in the area during a three-year period.
- Nonattainment: A pollutant is in nonattainment if there was at least one violation of an AAQS for that pollutant in the area.
- Nonattainment/Transitional: A subcategory of the nonattainment designation. An area is designated nonattainment/transitional to signify that the area is close to attaining the AAQS for that pollutant.

[21] When the air blows over elevated areas, it is heated as it is compressed into the side of the hill/mountain. When that warm air comes over the top, it is warmer than the cooler air of the valley.

[22] During the night, the ground cools off, radiating the heat to the sky.

The attainment status for the SFBAAB is shown in Table 4.3-3*, Attainment Status of Criteria Pollutants in the San Francisco Bay Area Air Basin.* The SFBAAB is currently designated a nonattainment area for California and National O_3, California and National $PM_{2.5}$, and California PM_{10} AAQS.

TABLE 4.3-3 ATTAINMENT STATUS OF CRITERIA POLLUTANTS IN THE SAN FRANCISCO BAY AREA AIR BASIN

Pollutant	State	Federal
Ozone – 1-hour	Nonattainment	Classification revoked (2005)
Ozone – 8-hour	Nonattainment (serious)	Nonattainment (marginal)[a]
PM_{10} – 24-hour	Nonattainment	Unclassified/ Attainment
$PM_{2.5}$ – 24-hour	Nonattainment	Nonattainment[b]
CO – 8-hour and 1-hour	Attainment	Attainment
NO_2 – 1-hour	Attainment	Unclassified
SO_2 – 24-hour and 1-hour	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	Attainment	Unclassified/Attainment
All others	Unclassified/Attainment	Unclassified/Attainment

a. Severity classification current as of February 13, 2017.
b. In December 2014, US EPA issued final area designations for the 2012 primary annual $PM_{2.5}$ National AAQS. Areas designated "unclassifiable/attainment" must continue to take steps to prevent their air quality from deteriorating to unhealthy levels. The effective date of this standard is April 15, 2015.

Source: California Air Resources Board. 2022, Maps of State and Federal Area Designations. https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations, accessed January 27, 2022.

Existing Ambient Air Quality

Existing levels of ambient air quality and historical trends and projections in the vicinity of the project area have been documented and measured by the BAAQMD. BAAQMD has 24 permanent monitoring stations located around the Bay Area. The nearest station is the Livermore – 793 Rincon Avenue Monitoring Station, which monitors O_3, NO_2, and $PM_{2.5}$. Data from this monitoring stations are summarized in Table 4.3-4, *Ambient Air Quality Monitoring Summary*. The data show regular violations of the State and federal O_3 standards and federal $PM_{2.5}$ standard. In recent years, California has been plagued by an unprecedented number of wildfires that have produced dense palls of smoke in the Bay Area. Smoke from wildfires can irritate the eyes and airways, causing coughing, a dry scratchy throat, and irritated sinuses. Elevated particulate matter in the air can trigger wheezing in those who suffer from asthma, emphysema, chronic obstructive pulmonary disease, or other respiratory conditions.[23] The air quality data collected by BAAQMD in Table 5.3-4 include exceptional events, including wildfires.

[23] Bay Area Air Quality Management District, 2021, Wildfire Safety, https://www.baaqmd.gov/about-air-quality/wildfire-air-quality-response-program/wildfire-safety.

TABLE 4.3-4 AMBIENT AIR QUALITY MONITORING SUMMARY

	Number of Days Threshold Were Exceeded and Maximum Levels During Such Violations				
Pollutant/Standard	2016	2017	2018	2019	2020
Ozone (O_3)					
State 1-Hour ≥ 0.09 ppm	2	5	2	4	1
State & Federal 8-hour ≥ 0.07 ppm	4	6	3	7	2
Maximum 1-Hour Conc. (ppm)	0.102	0.109	0.099	0.105	0.095
Maximum 8-Hour Conc. (ppm)	0.085	0.086	0.078	0.078	0.077
Nitrogen Dioxide (NO_2)					
State 1-Hour ≥ 0.18 (ppm)	0	0	0	0	0
Maximum 1-Hour Conc. (ppb)	0.0413	0.0454	0.0564	0.0475	0.0459
Fine Particulates ($PM_{2.5}$)					
Federal 24-Hour > 35 µg/m^3	0	2	14	0	17
Maximum 24-Hour Conc. (µg/m^3)	22.3	41.5	172.6	28.8	122.0

Notes: ppm = parts per million; ppb = parts per billion; µg/m^3 = micrograms per cubic meter; * = insufficient data; NA = Not Available
Data for O_3, NO_2, and $PM_{2.5}$ was obtained from the Livermore – 793 Rincon Avenue Monitoring.
Source: California Air Resources Board, 2022. Air Pollution Data Monitoring Cards (201 through 2020). http://www.arb.ca.gov/adam/index.html, accessed January 27, 2022.

BAAQMD also provides data that show areas in the SFBAAB that have elevated pollution levels and are identified as "impacted areas." Based on BAAQMD's Community Risk Evaluation Program maps, the project site is not within an "impacted area". In addition, the project site is also not within an eight-hour ozone exceedance area or $PM_{2.5}$- exceedance area.[24]

Existing Emissions

There are no existing emissions sources on the project site.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases. Residential areas are also considered sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors include retirement facilities, hospitals, and schools. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial, commercial, retail, and

[24] BAAQMD. 2022. Community Risk Evaluation Program. https://www.baaqmd.gov/community-health/community-health-protection-program/community-air-risk-evaluation-care-program. Access January 31, 2022.

office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, since the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the population. Sensitive receptors in close proximity to the proposed project include the single- and multi-family residences along the Great Valley Parkway to the east and West Grant Line Road to the south.

4.3.2 STANDARDS OF SIGNIFICANCE

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

1. Conflict with or obstruct implementation of the applicable air quality plan.
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard.
3. Expose sensitive receptors to substantial pollutant concentrations.
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.
5. In combination with past, present, and reasonably foreseeable projects, result in cumulative impacts with respect to air quality.

4.3.2.1 BAY AREA AIR QUALITY MANAGEMENT DISTRICT THRESHOLDS

The BAAQMD CEQA Air Quality Guidelines were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process, consistent with CEQA requirements, and include recommended thresholds of significance, mitigation measures, and background air quality information. They also include recommended assessment methodologies for air toxics, odors, and greenhouse gas emissions. These thresholds are designed to establish the level at which the Applicant believed air pollution emissions would cause significant environmental impacts under CEQA.

Criteria Air Pollutant Emissions and Precursors

Regional Significance Criteria

The BAAQMD's criteria for regional significance for projects that exceed the screening thresholds are shown in Table 4.3-5, *BAAQMD Regional (Mass Emissions) Criteria Air Pollutant Significance Thresholds.* Criteria for both the construction and operational phases of the project are shown.

TABLE 4.3-5 BAAQMD REGIONAL (MASS EMISSIONS) CRITERIA AIR POLLUTANT SIGNIFICANCE THRESHOLDS

	Construction Phase	Operational Phase	
Pollutant	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (Tons/year)
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
PM_{10} and $PM_{2.5}$ Fugitive Dust	Best Management Practices	None	None

Source: Bay Area Air Quality Management District, 2017, CEQA Guidelines May 2017.

Projects that do not exceed the emissions in Table 4.3-5 would not cumulatively contribute to health effects in the Air Basin. If projects exceed the emissions in Table 4.3-5, emissions would cumulatively contribute to the nonattainment status and would contribute to elevating health effects associated with these criteria air pollutants. Known health effects related to ozone include worsening of bronchitis, asthma, and emphysema and a decrease in lung function. Health effects associated with particulate matter include premature death of people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, decreased lung function, and increased respiratory symptoms. Reducing emissions would further contribute to reducing possible health effects related to criteria air pollutants.

However, for projects that exceed the emissions in Table 4.3-5, it is speculative to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment since mass emissions are not correlated with concentrations of emissions or how many additional individuals in the air basin would be affected by the health effects cited above. The Air District is the primary agencies responsible for ensuring the health and welfare of sensitive individuals to elevated concentrations of air quality in the Air Basin and at the present time, it has not provided methodology to assess the specific correlation between mass emissions generated and the effect on health in order to address the issue raised in *Sierra Club v. County of Fresno (Friant Ranch, L.P.) (2018) 6 Cal.5th 502, Case No. S21978* (Friant Ranch).

Ozone concentrations are dependent upon a variety of complex factors, including the presence of sunlight and precursor pollutants, natural topography, nearby structures that cause building downwash, atmospheric stability, and wind patterns. Because of the complexities of predicting ground-level ozone concentrations in relation to the National AAQS and California AAQS, it is speculative to link health risks to the magnitude of emissions exceeding the significance thresholds. To achieve the health-based standards established by the USEPA, the air districts prepare air quality management plans that details regional programs to attain the AAQS. However, if a project within the Air District exceeds the regional significance thresholds, the project could contribute to an increase in health effects in the basin until such time the attainment standards are met in the Air Basin.

CO Hotspots

Congested intersections have the potential to create elevated concentrations of CO, referred to as CO hotspots. The significance criteria for CO hotspots are based on the California AAQS for CO, which are 9.0 ppm (8-hour average) and 20.0 ppm (1-hour average). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology, the SFBAAB is in attainment of the California and National AAQS, and CO concentrations in the SFBAAB have steadily declined. Because CO concentrations have improved, the BAAQMD does not require a CO hotspot analysis if the following criteria are met: [25]

- The project is consistent with an applicable congestion management program established by the County Congestion Management Agency for designated roads or highways, the regional transportation plan, and local congestion management agency plans.
- The project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The project traffic would not increase traffic volumes at affected intersection to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

Community Risk and Hazards

The BAAQMD's significance thresholds for local community risk and hazard impacts apply to both the siting of a new source and to the siting of a new receptor. Local community risk and hazard impacts are associated with TACs and $PM_{2.5}$ because emissions of these pollutants can have significant health impacts at the local level. The proposed project would generate TACs and $PM_{2.5}$ during construction activities that could elevate concentrations of air pollutants at the nearby residential, day care, and school-based sensitive receptors. The thresholds for construction-related local community risk and hazard impacts are the same as for project operations. BAAQMD has adopted screening tables for air toxics evaluation during construction.[26] Construction-related TAC and $PM_{2.5}$ impacts should be addressed on a case-by-case basis, taking into consideration the specific construction-related characteristics of each project and proximity to off-site and on-site receptors, as applicable.[27]

Community Risk and Hazards: Project

Project-level emissions of TACs or $PM_{2.5}$ from individual sources that exceed any of the thresholds listed below are considered a potentially significant community health risk:

- An excess cancer risk level of more than 10 in one million, or a noncancer (i.e., chronic or acute) hazard index greater than 1.0 would be a significant project contribution.

[25] Bay Area Air Quality Management District, 2017, Revised, California Environmental Quality Act Air Quality Guidelines, http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.

[26] Bay Area Air Quality Management District, 2010. Screening Tables for Air Toxics Evaluations during Construction.

[27] Bay Area Air Quality Management District, 2017, Revised, California Environmental Quality Act Air Quality Guidelines, http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.

- An incremental increase of greater than 0.3 micrograms per cubic meter ($\mu g/m^3$) annual average $PM_{2.5}$ from a single source would be a significant project contribution.[28]

Community Risk and Hazards: Cumulative

Cumulative sources represent the combined total risk values of each of the individual sources within the 1,000-foot evaluation zone. A project would have a cumulative considerable impact if the aggregate total of all past, present, and foreseeable future sources within a 1,000-foot radius from the fence line of a source or location of a receptor, plus the contribution from the project, exceeds any of the following:

- An excess cancer risk level of more than 100 in one million or a chronic noncancer hazard index (from all local sources) greater than 10.0.
- 0.8 $\mu g/m^3$ annual average $PM_{2.5}$.[29]

In February 2015, Office of Environmental Health Hazard Assessment (OEHHA) adopted new health risk assessment guidance that includes several efforts to be more protective of children's health. These updated procedures include the use of age sensitivity factors to account for the higher sensitivity of infants and young children to cancer causing chemicals, and age-specific breathing rate.[30]

Odors

BAAQMD's thresholds for odors are qualitative based on BAAQMD's Regulation 7, *Odorous Substances*. This rule places general limitations on odorous substances and specific emission limitations on certain odorous compounds. 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 cause, or has a natural tendency to cause, injury, or damage to business or property. Under BAAQMD's Rule 1-301. BAAQMD has established odor screening thresholds for land uses that have the potential to generate substantial odor complaints, including wastewater treatment plants, landfills or transfer stations, composting facilities, confined animal facilities, food manufacturing, and chemical plants.[31] For a plan-level analysis, BAAQMD requires:

- Identification of potential existing and planned location of odors sources.
- Policies to reduce odors.

[28] Bay Area Air Quality Management District, 2017, Revised. California Environmental Quality Act Air Quality Guidelines. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.

[29] Bay Area Air Quality Management District, 2017, Revised. California Environmental Quality Act Air Quality Guidelines. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.

[30] Office of Environmental Health Hazard Assessment, 2015, February. Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments.

[31] Bay Area Air Quality Management District, 2017, May. California Environmental Quality Act Air Quality Guidelines. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.

4.3.3 IMPACT DISCUSSION

4.3.3.1 METHODOLOGY

This air quality evaluation was prepared in accordance with the requirements of CEQA to determine if significant air quality impacts are likely to occur with the proposed solar PV facility project. The Air District has published the CEQA Air Quality Guidelines that provides local governments with guidance for analyzing and mitigating air quality impacts and was used in this analysis.

Construction

Construction criteria air pollutant emissions modeling is included in Appendix C of this Draft EIR. The proposed project's construction-related criteria air pollutant emissions were modeled utilizing the California Emissions Estimator Model (CalEEMod) Version 2020.4.0 (see Appendix C).

The proposed project is anticipated to be constructed over an approximately 2-month period from July 2022 through September 2022. Construction would entail minimal excavation to construct the gravel access road and electrical pads, temporary staging area and assembling three rows of solar panels on steel racking frame on up to 14.13 acres of the currently vacant site. The construction activities, equipment, worker and vendor trips are based on information provided by the Applicant. Vendor trips have been adjusted to account for additional water truck trips and gravel haul truck trips based on the hauling capacity. Average annual construction emissions from CalEEMod are divided over the number of construction days (Emily to insert and verify– 47 days) to estimate average daily construction emissions per BAAQMD methodology.

Construction HRA

A construction health risk assessment (HRA) from TACs and $PM_{2.5}$ associated with construction equipment exhaust was prepared for the project and is included in Appendix D of this Draft EIR. Sources evaluated in the HRA include off-road construction equipment and heavy-duty diesel trucks along the truck haul route. Modeling is based on the USEPA's AERMOD air dispersion modeling program and the latest HRA guidance from OEHHA to estimate excess lifetime cancer risks, chronic non-cancer hazard indices, and the $PM_{2.5}$ maximum annual concentrations at the nearest maximum exposed off-site and on-site sensitive receptors and assumes 24-hour outdoor exposure with risks averaged over a 70-year lifetime.

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 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 (47 workdays). The off-site hauling emission rates were adjusted to evaluate localized emissions from the 0.39-mile haul route within 1,000 feet of the project site.

Air dispersion modeling using the USEPA's AERMOD program was conducted to assess the impact of emitted compounds on sensitive receptors. 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. 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.

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 at each sensitive receptor were then multiplied by the construction emission rates to obtain the maximum concentrations at the off-site and on-site maximum exposed receptors (MER). The MER location is the receptor location associated with the maximum predicted AERMOD concentrations from the on-site construction emission source.[32]

AQ-1 The proposed project would not 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 solar PV facility on the project site. The project is not 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 solar PV facility would not result in the increase of population or housing foreseen in County or regional planning efforts. Therefore,

[32] The calculated on-site emission rates are approximately 4 orders of magnitude higher than the calculated off-site (hauling) emission rates (see Appendix D). 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 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.

Lastly, the net increase in regional emissions generated by the proposed project would not exceed BAAQMD's emissions thresholds (see impact discussion AQ-2 below). 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*.

Significance Without Mitigation: Less than significant.

AQ-2	**The proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or State ambient air quality standard.**

The Air District has identified thresholds of significance for criteria pollutant emissions and criteria air pollutant precursors, including ROG, NO, PM_{10}, and $PM_{2.5}$. Development projects below these significant thresholds (listed in Table 4.3-5) 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.

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 $PM_{2.5}$.

Fugitive Dust

Ground-disturbing activities during project construction could generate fugitive dust (PM_{10} and $PM_{2.5}$) that, if left uncontrolled, could expose the areas downwind of the construction site to air pollution from the construction dust. Fugitive PM_{10} is typically the most significant source of air pollution from the dust generated from construction. The amount of fugitive dust generated during construction would be highly variable and is dependent on the amount of material being demolished, the type of material, moisture content, and meteorological conditions. As described under Section 4.3.2, *Standards of Significance*, BAAQMD does not provide a quantitative threshold for construction-related fugitive dust emissions, and a project's fugitive dust emissions are considered to be acceptable with implementation of BAAQMD's best management practices. In other words, there could be a significant impact if the best management

practices are not enforced. For this reason, the project's fugitive dust emissions with the incorporation of BAAQMD's best management practices are quantified for reference in Table 4.3-6.

As described in Section 4.3.1.1, extended exposure to particulate matter can increase the risk of chronic respiratory disease, which would be a *significant* impact. PM_{10} bypasses the body's natural filtration system more easily than larger particles and can lodge deep in the lungs. $PM_{2.5}$ penetrates even more deeply into the lungs, and this is more likely to contribute to health effects—at concentrations well below current PM_{10} standards. Health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms (e.g., irritation of the airways, coughing, or difficulty breathing).

Significance without Mitigation: Significant.

Impact AQ-2: Uncontrolled fugitive dust (PM_{10} and $PM_{2.5}$) could expose the areas that are downwind of construction sites to air pollution from construction activities without the implementation of the Air District's best management practices.

Mitigation Measure AQ-1: 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.

Significance with Mitigation: Less than significant. Mitigation Measure AQ-1 would require implementation of the BAAQMD Best Management Practices for fugitive dust control. Therefore, with

compliance with this mitigation measure, construction-related fugitive dust would be reduced to less-than-significant levels.

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 2-months to complete and is anticipated to be finished by fall 2022. 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 4.3-6*, Construction-related Criteria Air Pollutant Emissions Estimates*, 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 4.3-6 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 $PM_{2.5}$
2022	0.01	0.05	0.00	0.00	0.00	0.00
	Criteria Air Pollutants (average lbs/day)[a]					
Average Daily Emissions[c]	0.01	0.05	0.00	0.00	0.00	0.00
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; NA = Not Applicable
[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 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 47 days.
Source: CalEEMod 2020.4 (see Appendix C).

Significance without Mitigation: Less than significant.

Operational Emissions

Project operation would only generate occasional trips by project maintenance workers to perform routine maintenance and repairs, and a 500-gallon water truck that would make one trip delivery to wash the solar modules with an electronic cleaning system 1-2 times per year. Accordingly, long-term air pollutant emissions generated by a PV facility would be minimal. Therefore, operational phase criteria air pollutant emissions would be *less than significant*.

Significance Without Mitigation: Less than significant.

AQ-3 The proposed project would not expose sensitive receptors to substantial pollutant concentrations.

The proposed project could expose sensitive receptors to elevated pollutant concentrations if it would cause or contribute significantly to elevated pollutant concentration levels. Unlike regional emissions, localized emissions are typically evaluated in terms of air concentration rather than mass, so they can be more readily correlated to potential health effects.

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 receptors 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.[33] 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 residential dwelling southeast of the project site along Grant Line Road and the preschool students at Sunshine Shwetha Preschool and Daycare to the northeast of the project site. Because these residences fall within the 200 meters (656 feet) 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 D of this Draft EIR. In addition, while these receptors fall within the jurisdiction of San Joaquin Valley APCD, the results of the health risk assessment were compared to BAAQMD risk thresholds, based on the project's location within the SFBAAB and the BAAQMD's more conservative threshold.[34] Results of the analysis are shown in Table 4.3-7, *Construction Health Risk Assessment Results*.

TABLE 4.3-7 CONSTRUCTION HEALTH RISK ASSESSMENT RESULTS

	Project Level Risk		
Receptor	Cancer Risk (per million)	Chronic Hazards	$PM_{2.5}$ ($\mu g/m^3$)[a]
Maximum Exposed Receptor – Off-site Resident	0.1	0.0004	0.002
Sunshine Shwetha Preschool and Daycare	0.02	0.0001	0.0003
BAAQMD Threshold	10	1.0	0.30

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

[34] San Joaquin Valley Unified Air Pollution Control District. 2015, May 28. Final Staff Report: Update to District's Risk Management Policy to Address OEHHA's Revised Risk Assessment Guidance Document. https://www.valleyair.org/busind/pto/staff-report-5-28-15.pdf

TABLE 4.3-7 CONSTRUCTION HEALTH RISK ASSESSMENT RESULTS

	Project Level Risk		
Receptor	Cancer Risk (per million)	Chronic Hazards	$PM_{2.5}$ ($\mu g/m^3$)[a]
Exceeds Threshold?	No	No	No

Notes: micrograms per cubic meter = $\mu g/m^3$; $PM_{2.5}$ – fine particulate matter
Cancer risk calculated using 2015 Office of Environmental Health Hazard Assessment Health Risk Assessment Guidance Manual.

- Cancer risk for the maximum exposed off-site resident (MER), a single-family residence southeast of the site along Grant Line Road, from unmitigated construction activities related to the project were calculated to be 0.1 in a million and would not exceed the 10 in a million significance threshold. The cancer risk for the maximum exposed preschool receptor was calculated to be 0.023 in a million, which also would not exceed the significance threshold. The calculated total cancer risk for the off-site residents incorporates the individual risk for infant and childhood exposures into one risk value.
- For non-carcinogenic effects, the hazard index identified for each toxicological endpoint totaled less than 1 for off-site sensitive receptors. Therefore, chronic non-carcinogenic hazards would not exceed acceptable limits.
- The highest construction exhaust $PM_{2.5}$ annual concentration of 0.002 $\mu g/m^3$ at the off-site MER and 0.0003 $\mu g/m^3$ at the preschool were all calculated to be less than the 0.3 $\mu g/m^3$ significance threshold. Therefore, impacts from $PM_{2.5}$ concentrations are less than significant.

Consequently, prior to mitigation, cancer risk impacts to off-site residences would be *less than significant*.

Significance without Mitigation: 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 solar 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, including water delivery trucks would therefore be *less than significant*.

Significance without Mitigation: Less than significant.

AQ-4 The proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Construction and operation of solar PV facilities would not generate odors that would adversely 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 do not emit 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, daily operations activities would have no impact.

During project-related construction activities on the project site, 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. Impacts would be *less than significant*.

Significance Without Mitigation: Less than significant.

AQ-5 The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in less-than-significant cumulative impacts with respect to air quality.

Criteria Air Pollutants

Impact AQ-2 analyzed potential cumulative impacts to air quality that could occur from construction and operation of the proposed project in combination with regional growth projections in the air basin. Mitigation Measure AQ-1 would reduce impacts from fugitive dust generated during construction activities. With this mitigation measure, regional and localized construction emissions would not exceed the Air District's significance thresholds. Consequently, the proposed project would not cumulatively contribute to the nonattainment designations of the Air Basin and impacts would be *less than significant* following mitigation measures.

Toxic Air Contaminants

There are no other stationary or mobile sources of TACs within 1,000 feet of the project site. As shown in Table 4.3-7, the health risks are well below BAAQMD's thresholds for individual projects. Therefore, the cumulative health risks from the project would also be less than the BAAQMD's cumulative thresholds of 100 in a million for a lifetime cancer risk, 10.0 for chronic hazards, and the $PM_{2.5}$ concentration for all emission sources of 0.8 $\mu g/m^3$. Consequently, cumulative health risk impacts from TACs would be *less than significant*.

Significance Without Mitigation: Less than significant.

4.4 BIOLOGICAL RESOURCES

This chapter describes the regulatory framework and existing conditions on the project site related to biological resources, and the potential impacts of the project on biological resources.

4.4.1 ENVIRONMENTAL SETTING

4.4.1.1 REGULATORY FRAMEWORK

Federal Regulations

Federal Endangered Species Act

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 Section 703, 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 governments 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 of 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.[1]

In general, a USACE permit must be obtained before an individual project can place fill or grade in wetlands or other waters of 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.

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 (SWRCB). The project site is within the 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 be evaluated in compliance with the California Environmental Quality Act (CEQA).

State Regulations

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

[1] Section 33 Code of Federal Regulations Part 328.5.

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 may apply for a take permit under Section 2081(b).

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 activities having the potential to have a 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 CDFW, 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.

The 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:[2]

- 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 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

[2] California Native Plant Society, 2010. The CNPS Ranking System, https://www.cnps.org/rare-plants/cnps-rare-plant-ranks accessed on October 6, 2021.

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 Regulations

East County Area Plan

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

- Policy 123: Where site-specific impacts on biological resources resulting from a proposed land use outside the Urban Growth Boundary are identified, the County shall encourage that mitigation is complementary to the goals and objectives of the ECAP. To that end, the County shall recommend that mitigation efforts occur in areas designated as "Resource Management" or on lands adjacent to or otherwise contiguous with these lands in order to establish a continuous open space system in East County and to provide for long term protection of biological resources.
- Policy 124: The County shall encourage the maintenance of biological diversity in East County by including a variety of plant communities and animal habitats in areas designated for open space.
- Policy 125: The County shall encourage preservation of areas known to support special-status species.

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 provide 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.[3]

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

4.4.1.2 EXISTING CONDITIONS

The following discussion is primarily based on the Biological Resources Assessment prepared by LSA Associates in January 2022, included in Appendix E of this Draft EIR.[4]

Methodology

Available literature and mapping of biological resources reviewed included records maintained by the California Natural Diversity Database (CNDDB), the California Native Plant Society's (CNPS) online Inventory of Rare and Endangered Vascular Plants of California, and the USFWS's Information for Planning and Conservation online system determine known occurrences of special-status species and sensitive natural communities in the project site vicinity. The database search results were combined with LSA staff knowledge on the presence of special status plant and wildlife species in eastern Alameda County to prepare a list of potentially occurring special status species and habitats.

A field reconnaissance survey of the project site was initially conducted on May 13, 2021, to provide a current assessment of the biological resources present and identify potential constraints to development, as well as inspect burrows for any sign of use by burrowing owl or San Joaquin kit fox. A motion-activated trail camera was installed at one of the slightly larger burrow entrances, which was potentially suitable for San Joaquin kit fox. The camera was moved to a different burrow on May 18 and recovered on May 20.

Vegetation

The majority of the project site is non-native annual grassland comprised of wild oats (*Avena sp.*) and brome (*Bromus sp.*). Overall plant diversity observed was low. A few Russian thistle (*Salsola tragus*) and several narrow leaf milkweed (*Asclepias fascicularis*) plants were observed growing on the site.

Although no special-status plant species were detected during the site visits, the CNDDB query returned 11 special-status plant species with occurrences within 5 miles of the project site. THE CNPS Online Inventory retuned a list of 14 List 1 or List 2 species, four of which were not part of the CNDDB query results. Table 4.4-1, *Special-Status Plant Species Evaluated*, summarizes the potential for each of these 15 species to occur on the site.

Wildlife

Numerous active and inactive California ground squirrel (*Otospermophilus beecheyi*) burrows were observed throughout the site. Several ground squirrels and numerous rock pigeons (*Columba livia*) were observed during the site visits. The trail camera recorded one red-tailed hawk, a Swainson's hawk, a burrowing owl, and an unidentified mammal that is believed to be an American badger.

The CNDDB search returned 19 special-status wildlife species with occurrences within 5 miles of the project site. The USFWS official species list contains 11 federally listed species, six of which had not shown up on the CNDDB query results. Although not included in the CNDDB query or the USFWS official species

[4] LSA Associates, Inc., January 2022. *Biological Resources Assessment: Alameda Grant Line Solar*.

list, two additionally special-status species – golden eagle and monarch butterfly – are also included in Table 4.4-2, *Special-Status Animal Species Evaluated*, which summarizes the potential for each of these 27 species to occur on the site. The golden eagle has known occurrences in the area and the monarch host plant is present on the site. For birds, the potential to occur refers only to nesting, as many species may fly over or forage the site. Each of the special-status species that were determined to have some potential to occur on the project site are discussed in more detail below.

California Tiger Salamander

The California Tiger Salamander has been divided into three distinct population segments by the USFWS and the project site is located within the Central California Population Segment. This segment was listed as Threatened under the ESA and CESA. California Tiger Salamander occur in grassland, oak woodland, and coastal sage scrub communities in the San Joaquin Valley and central Coast Ranges of California. Adult California Tiger Salamanders spend most of the year below ground in rodent burrows or other natural crevices, most commonly near burrows of ground squirrels or Botta's pocket gophers. They move to seasonal ponds in response to winter rains to breed. Eggs hatch into larvae after several days and remains in the larval stage for 3 to 6 month, which metamorphosis beginning in late spring or early summer. The metamorphosed juveniles leave the pond as it dries and disperse to underground retreats. The CNDDB recorded at least 22 occurrences within a 5-mile radius of the project site, with two of these occurrences based on observations made within 2 miles of the site. There is a low potential for California Tiger Salamanders to migrate through the project site on rainy nights, as the grassland burrows within the project site provides suitable upland habitat for California Tiger Salamanders, and a pond surrounded by intense cultivation approximately 0.4 miles northeast of the site may provide suitable breeding habitat.

California Red-Legged Frog

The California red-legged frog is a California Species of Special Concern and a federally listed threatened species. California red-legged frogs breed from November through April. Egg masses hatch in 6 to 14 days and larvae metamorphose in 3.5 to 7 months, typically between July and September. During dry weather, California red-legged frogs are seldom found far from water; however, during wet periods, they can make overland excursions through upland habitats over distances of up to 2 miles. In the summer, California red-legged frogs may disperse from their breeding habitat to forage and seek shelter if water is not available. Breeding sites include a variety of aquatic habitats, including streams, deep pools, backwaters within streams and creeks, ponds, marshes, and lagoons. Breeding adults are commonly found in deep, still, or very slow-moving water with dense, shrubby riparian or emergent vegetation. There are 50 CNDDB occurrences within 5 miles of the project site, with four of the occurrences less than 1 mile from the site. A pond approximately 0.4 miles northeast of the site may provide suitable breeding habitat but this feature is separated by an orchard. There is low potential for California red-legged frogs to migrate through the project site, but they could also use the burrows on the site as shelter during the summer.

TABLE 4.4-1 SPECIAL-STATUS PLANT SPECIES EVALUATED

Species Name	Status (Federal/State/Other)[a]	Habitat Characteristics	Potential to Occur
Alkali milk-vetch *Astragalus tener var. tener*	--/--/1B.2	Alkali flats, vernal swales and vernal pool edges Elevation: 1-60 meters Blooms: March-June	None. No suitable alkaline/vernal pool habitat occurs on the site. No CNDDB records within 5 miles of the site.
Heartscale *Atriplex cordulata var. cordulata*	--/--/1B.2	Chenopod scrub, meadows and seeps, valley and foothill grassland, saline or alkaline soils Elevation: 0-560 meters Blooms: April-October	None. No suitable alkaline/vernal pool habitat occurs on the site. There is only one CNDDB occurrence within 5 miles of the site, based on an observation of a population in an alkaline seasonal wetland.
Big tarplant *Blepharizonia plumosa*	--/--/1B.1	Valley and foothill grassland, usually in clay soils Elevation: 30-505 meters Blooms: July-October	None. There are two CNDDB occurrences within 5 miles of the site. The site is dominated by non-native plants. Historical occurrences probably extirpated by urbanization, agriculture, and nonnative plants.
Congdon's tarplant *Centromadia parryi* ssp. *congdonii*	--/--/1B.1	Grazed and ungrazed annual grassland, alkaline or saline soils sometimes described as saline clay soil Elevation: 1-230 meters Blooms: May-October	None. There are no CNDDB occurrences within 5 miles of the site. There are no saline or highly alkaline soils on the site.
Recurved larkspur *Delphinium recurvatum*	--/--/1B.2	Alkaline soils, chenopod scrub, cismontane woodland, valley and foothill grassland Elevation: 3-790 meters Blooms: March-June	None. There are no alkaline soils on the site. There is only one CNDDB occurrence within 5 miles of the site, based on observations made in 1991 and 2010.
Spiny-sepaled button-celery *Eryngium spinosepalum*	--/--/1B.2	Valley and foothill grassland, vernal pools Elevation: 80-975 meters Blooms: April-June	None. There are no vernal pools on the site. There are no CNDDB occurrences within 5 miles of the site.
Diamond-petaled California poppy *Eschscholzia rhombipetala*	--/--/1B.1	Valley and foothill grassland Elevation: 0-975 meters Blooms: March-April	None. There is only one CNDDB occurrence within 5 miles of the site, based on an observation of 22 plants in 2015. No California poppies were observed during the field surveys.
San Joaquin spearscale *Extriplex joaquinana*	--/--/1B.2	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, alkaline microhabitats Elevation: 1-835 meters Blooms: April-October	None. No suitable wet alkaline habitat occurs on the site. Non-native grasses on the site are very dense. Closest CNDDB occurrence is approximately 1.3 miles from the site.

TABLE 4.4-1 SPECIAL-STATUS PLANT SPECIES EVALUATED

Species Name	Status (Federal/State/Other)[a]	Habitat Characteristics	Potential to Occur
Woolly rose-mallow *Hibiscus lasiocarpos* var. *occidentalis*	--/--/1B.2	Marshes and swamps Elevation: 1-120 meters Blooms: June-September	None. Marshes or swamps are not present on the site.
Mason's lilaeopsis *Lilaeopsis masonii*	--/Rare/1B.1	Marshes and swamps, riparian scrub Elevation: 0-10 meters Blooms: April-November	None. There are no marshes, swamps, or riparian vegetation on the site.
Delta mudwort *Limosella australis*	-/--/2B.1	Marshes and swamps, riparian scrub Elevation: 0-3 meters Blooms: May-August	None. There are no marshes, swamps, or riparian vegetation on the project site.
Shining navarettia *Navarretia nigelliformis* ssp. *radians*	--/--/1B.2	Cismontane woodland, valley and foothill grassland, vernal pools Elevation: 0-3 meters Blooms: March-July	None. There are no vernal pools on the project site.
California alkali grass *Puccinellia simplex*	--/--/1B.2	Chenopod scrub, meadows and seeps, valley and foothill grassland, vernal pools Elevation: 2-930 meters Blooms: March-May	None. There are no vernal pools or seeps on the site.
Long-styled sand-spurrey *Spergularia macrotheca* var. *longistyla*	--/--/1B.2	Marshes and swamps, meadows and seeps Elevation: 0-255 meters Blooms: February-May	None. There are no marshes, swamps, or seeps on the project site.
Caper-fruited tropidocarpum *Tropidocarpum capparideum*	--/--/1B.1	Alkaline-clay soils in valley and foothill grassland Elevation: 1-455 meters Blooms: March-April	None. No typical alkaline habitat occurs on the site. The closest CNDDB occurrences are based on collections made in the general area in 1888 and from 1920 to 1933.

a. Status:
Rare Plant Rank (RPR)
1B.1: California Rare Plant Rank 1B, Threat Rank 0.1: Plant species rare, threatened, or endangered in California and elsewhere. Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat).
1B.2 = California Rare Plant Rank 1B, Threat Rank 0.2: Plant species rare, threatened, or endangered in California and elsewhere. Moderately threatened in California (20-80% of occurrences threatened/moderate degree and immediacy of threat).
2B.1 = California Rare Plant Rank 2B, Threat Rank 0.1: Plant species rare, threatened, or endangered in California, but more common elsewhere. Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat).
Source: LSA Associates, Inc., January 2022. Biological Resources Assessment: Alameda Grant Line Solar, Table A

TABLE 4.4-2 SPECIAL-STATUS ANIMAL SPECIES EVALUATED

Species Name	Status (Federal/State/CDFW)[a]	Habitat Characteristics	Potential to Occur
Amphibians			
California tiger salamander *Ambystoma californiense*	FT/CT/--	Spends most of its life in underground burrows. Breeds in vernal pools and ponds, including cattle stock ponds. Breeds after the first rains in late fall and early winter, when the wet season allows the salamander to migrate to the nearest pond, a journey that may be over 1 mile and take several days. Lays eggs in small clusters or singly, which hatch after 14 to 21 days. The pools must hold water for a minimum of 12 weeks for the larvae to successfully metamorphose into their terrestrial form.	Low. There are 22 CNDDB occurrences within 5 miles of the site. The nearest occurrence is 1 mile from the site, which is close to the maximum distance the species is known to disperse. A pond approximately 0.38 mile northeast of the site may provide suitable breeding habitat. However, this feature is separated from the project site by an orchard, which individual salamanders would be unlikely to disperse through. There is a remote possibility that individual salamanders may move through the project site during rainy nights.
California red-legged frog *Rana draytonii*	FT/--/CSC	Inhabits permanent and temporary pools, streams, freshwater seeps, and marshes in lowlands and foothills. Uses adjacent upland habitat for foraging and refuge. Breeds during the wet season from December through March in slow parts of streams, lakes, reservoirs, ponds, and other waters with emergent vegetation. Lays 300 to 4,000 eggs in a large cluster, which is attached to plants near the water surface. Requires water for 4 to 7 months for tadpoles to complete metamorphosis.	Low. There are 50 CNDDB occurrences within 5 miles of the site, and 4 of these occurrences are less than 1 mile from the site. A pond approximately 0.38 miles northeast of the site may provide suitable breeding habitat. However, this feature is separated from the project site by an orchard, which individual frogs would be unlikely to disperse through. There is a low potential for frogs to migrate through the project site, especially on rainy nights.
Reptiles			
Western pond turtle *Actinemys (=Emys) marmorata*	--/--/CSC	Permanent or nearly permanent water (fresh to brackish) in a wide variety of habitat types. Requires basking sites such as steep banks, logs, or rocks. Upland areas with friable soils are required for egg laying.	None. There are five CNDDB occurrences within 5 miles of the site. There is no suitable aquatic habitat on the site, and the nearby canal is not suitable habitat.
San Joaquin coachwhip *Masticophis flagellum ruddocki =(Coluber flagellum ruddocki)*	--/--/CSC	Lives primarily in grasslands and open scrub plant communities. Takes cover under rocks and boards and in rodent burrows.	Moderate. There is one CNDDB occurrence within 5 miles of the project site, based on a collection of one snake made in 1996.

TABLE 4.4-2 SPECIAL-STATUS ANIMAL SPECIES EVALUATED

Species Name	Status (Federal/State/CDFW)[a]	Habitat Characteristics	Potential to Occur
California glossy snake *Arizona elegans occidentalis*	--/--/CSC	A nocturnal species that stays in burrows or under rocks during the day. Inhabits dry grasslands and chaparral. In California, ranges from San Diego County north to Alameda County.	Moderate. There are two CNDDB occurrences within 5 miles of the site. There are loose soils and numerous burrows on the site. The site's small size and isolation due to infrastructure, agriculture, and residential housing limit the suitability of the site.
Giant garter snake *Thamnophis gigas*	FT/CT/--	Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals, slow-flowing irrigation ditches, and rice fields. Requires upland burrows above flood zone for winter refuges.	None. There are no CNDDB occurrences within 5 miles of the project site. The site is outside the known range of the species, and there is no suitable habitat on or near the site.
Coast horned lizard *Phrynosoma blainvillii*	--/--/CSC	Found in open grasslands, chaparral, and woodlands with loose or sandy soils. Feeds primarily on ants.	Low. There are two CNDDB occurrences within 5 miles of the site. The species will inhabit grasslands, but is typically associated with sandy soils that are not abundant on the site.
Birds			
Burrowing owl *Athene cunicularia*	--/--/CSC	Nearly or quite level grassland, prairie, and desert floor with short or sparse vegetation. Subterranean nester that generally uses existing mammal burrows (especially of ground squirrels), but will also excavate its own burrows.	Present. There are 39 CNDDB occurrences within 5 miles of the project site, including observations made in 1989 and 2007 adjacent to the project site. LSA biologists observed at least two burrowing owls on the site in 2021, and a trail camera captured images of one burrowing owl.
Loggerhead shrike *Lanius ludovicianus*	--/--/CSC	Nests in shrubs and small trees in grasslands.	None. There are two CNDDB occurrences within 5 miles of the project site. The site lacks shrubs and small trees that would be suitable for nesting.
Northern harrier *Circus cyaneus*	--/--/CSC	Nests primarily in large expanses of grasslands including fallow agricultural fields, marshes, and meadows.	None. There are two CNDDB occurrences within 5 miles of the project site. While the project site provides a large open field suitable for foraging northern harriers, it does not support densely vegetated or wet areas, such as meadows and marshes, ideal for nesting harriers. As a result, northern harriers may forage on the site, but are not expected to nest on the site.
Modesto song sparrow *Melospiza melodia*	--/--/CSC	Found in riparian forests and freshwater wetlands.	None. There are three CNDDB occurrences within 5 miles of the project site, all of which are associated with rivers, canals, or wetlands. The site lacks suitable wetland vegetation for foraging and nesting.

TABLE 4.4-2 SPECIAL-STATUS ANIMAL SPECIES EVALUATED

Species Name	Status (Federal/State/CDFW)[a]	Habitat Characteristics	Potential to Occur
Swainson's hawk *Buteo swainsoni*	--/CT/--	Nests primarily in dense trees in riparian areas. Forages in open areas, including agricultural fields.	None. There are 21 CNDDB occurrences within 5 miles of the project site. There are no trees or shrubs suitable for nesting on or adjacent to the site. The species probably forages occasionally on the site.
Tricolored blackbird *Agelaius tricolor*	--/CT/CSC	Breeds in large colonies near freshwater, preferably emergent wetland such as cattails and tules but also in thickets of willow and other shrubs. Requires nearby foraging areas with large numbers of insects.	None. There are four CNDDB occurrences within 5 miles of the site. The project site does not support any marshes with emergent vegetation.
White-tailed kite *Elanus leucurus*	--/--/CFP	Hunts in open grassland habitats with sparse shrubs and trees. Nests near the top of trees.	None. There is no potential for the species to nest on the site, due to the absence of trees. May occasionally fly over or forage on the site.
Golden eagle *Aquila chrysaetos*	--/--/CFP	Hunts over rolling foothills and mountain areas. Nests in cliff-walled canyons or large trees in open areas.	None. There is no potential for the species to nest on the site, due to the absence of trees, transmission towers, cliffs, or other suitable nesting sites. May occasionally fly over or forage on the site.
Mammals			
San Joaquin kit fox *Vulpes macrotis mutica*	FE/CT/--	Found primarily in flat areas with short, sparse vegetation in the southern San Joaquin Valley. Feeds on kangaroo rats and other small rodent species, but will also consume insects, hares, mice, and lizards. Lives in dens that it either excavates itself or moves into atypical dens, including manmade structures.	None. There are no CNDDB occurrences within 5 miles of the site. No nearby occurrences were recorded within the last 20 years. No likely dens were seen during the biological surveys, and trail cameras deployed at dens for several evenings did not detect the species.
American badger *Taxidea taxus*	--/--/CSC	Open grassland areas with friable soils and plentiful prey such as pocket gophers and ground squirrels.	Moderate. There are seven CNDDB occurrences within 5 miles of the site. There are ground squirrels on the site which provide an adequate prey base. No potential dens were detected during the site visits, but badgers may hunt on the site occasionally.
Invertebrates			
San Bruno elfin butterfly *Callophrys mossii bayensis*	FE/--/--	Known to occur only on slopes of the coastal mountains in San Mateo County. Lays eggs on the larval host plant stonecrop (*Sedum spathulifolium*).	None. The project site is outside the known range of the species and does not contain the host plant. There are no CNDDB occurrences within 5 miles of the site.

TABLE 4.4-2 SPECIAL-STATUS ANIMAL SPECIES EVALUATED

Species Name	Status (Federal/State/CDFW)[a]	Habitat Characteristics	Potential to Occur
Monarch butterfly *Danaus plexippus*	FC/--/--	Migrates through the San Joaquin Valley primarily in the spring and fall. Lays eggs on the larval host plant milkweed.	Moderate. Milkweed is present on the site. The CNDDB does not track monarch butterfly observations, except at coastal overwintering sites.
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT/--/--	Occurs only in the Central Valley and associated foothills with blue elderberry (*Sambucus mexicana*). Lives in elderberry bushes with a stem diameter at ground level of at least 1 inch. Lays eggs in the stems of elderberries. Eggs hatch into larvae, which transform to the adult stage after up to 2 years.	None. No elderberry plants occur on or near the site. There are no CNDDB occurrences within 5 miles of the site.
Conservancy fairy shrimp *Branchinecta conservation*	FE/--/--	Found only in vernal pools in California's Central Valley and one population in Ventura County.	None. No vernal pools are present on the project site. There are no CNDDB occurrences within 5 miles of the site.
Vernal pool fairy shrimp *Branchinecta lynchi*	FT/--/--	Inhabits vernal pools and swales during all stages of its life cycle.	None. No vernal pools are present on the site. There are three CNDDB occurrences within 5 miles of the site.
Longhorn fairy shrimp *Branchinecta longiantenna*	FE/--/--	Found in seasonal pools that range from clear to turbid, including depressions in sandstone outcroppings near Tracy, grass-bottomed pools in Merced County, and claypan pools in San Luis Obispo County.	None. No vernal pools are present on the site. There are six CNDDB occurrences within 5 miles of the site, but all are associated with pools in sandstone rock outcroppings.
Vernal pool tadpole shrimp *Lepidurus packardi*	FT/--/--	Inhabits a wide variety of seasonal aquatic habitats, including vernal pools, seasonal wetlands, ephemeral stock tanks, and manmade ditches. Reproduces via cysts that persist in the dried soil of the water feature until it refills during the rainy season.	None. No vernal pools or other seasonal wetlands are present on the project site. There are no CNDDB occurrences within 5 miles of the site.
Fish			
Delta smelt *Hypomesus transpacificus*	FT/CE/--	Only found in estuarine waters from the Sacramento-San Joaquin confluence to San Pablo Bay. Can tolerate a wide range of salinities and moves into river channels and tidally influenced backwater sloughs.	None. There is no suitable habitat on or near the site. There are no CNDDB occurrences within 5 miles of the site.
Eulachon *Thaleichthys pacificus*	FT/--/--	Spends most of its adult life in the Pacific Ocean but returns to the freshwater streams where it hatched to spawn. Adults die after spawning.	None. There is one CNDDB occurrence within 5 miles, but no suitable perennial streams are located on or near the site.

TABLE 4.4-2 SPECIAL-STATUS ANIMAL SPECIES EVALUATED

Species Name	Status (Federal/State/CDFW)[a]	Habitat Characteristics	Potential to Occur
Steelhead - Northern California Distinct Population Segment *Oncorhynchus mykiss irideus*	FT/--/--	Requires cool, swift moving perennial streams with clean, unsilted gravel beds for spawning and egg deposition.	None. There is one CNDDB occurrence within 5 miles, but no suitable perennial streams are located on or near the site.

a. Status:
FT = Federally listed as threatened; FE = Federally listed as endangered; FC: Federal candidate species
CT = California State listed as threatened; CE = California State listed as endangered; CSC = California species of special concern; CFP = California Fully Protected
Source: LSA Associates, Inc., January 2022. Biological Resources Assessment: Alameda Grant Line Solar, Table C

San Joaquin Coachwhip

The San Joaquin Coachwhip is considered a California Species of Special Concern. It is found in grasslands and open scrub areas without trees throughout the San Joaquin Valley and associated foothills. It hunts small animals, such as rodents, lizards, and birds, and takes refuge in rodent burrows or under object on the surface of the ground. The CNDDB query returned one occurrence of the San Joaquin Coachwhip within 5 miles of the project site. The project site and lands to the south provide suitable habitat for the species.

California Glossy Snake

The glossy snake is a California Species of Special Concern. It is found in arid grasslands, scrub, and chaparral from Alameda County south to Baja Mexico. It is nocturnal and hides in burrows or under rocks during the day. It feeds on diurnal lizards and other small animals while they sleep. There are two CNDDB occurrences of the glossy snake within 5 miles of the project site. The project site and lands to the south provide suitable habitat for the species.

Coast Horned Lizard

The coast horned lizard is a California Species of Special Concern. It inhabits sparsely vegetative openings with loose, often sandy soils in a variety of habitats, including scrubland, grassland, chaparral, and coniferous forests. The species feeds almost exclusively on ants and are frequently found in association with ant colonies. The CNDDB search returned two occurrences of coast horned lizard within 5 miles of the site. The project site does not have much of the sandy soil the horned lizard prefers, and no ant colonies were observed during the site surveys. Therefore, there is a low potential for the species to occur on the site.

Burrowing Owl

Burrowing owl is considered a California Species of Special Concern. Historically, it was found throughout most of the lowland California except in forested areas. Its breeding range has remained largely the same but there have been local extirpations and declines due to urbanization. It is still relatively common in interior parts of Alameda County. Burrowing owls inhabit grasslands and other areas of short vegetation including agricultural areas and near developed areas. They require underground burrows for roosting and nesting. Although burrowing owls are capable of digging their own burrows in loose soil, they most commonly use originally dug by ground squirrels, and sometimes even artificial structures such as culverts, pipes, and rock riprap. The CNDDB recorded 39 occurrences of burrowing owl within 5 miles of the project site, and they were observed on the site during the field survey. Burrowing owl use seemed to be more concentrated in the western half of the project site, but suitable burrows are distributed evenly throughout the site.

Swainson's Hawk

The Swainson's hawk is listed as Threatened by the CDFW but is not federally listed. Swainson's hawk is an uncommon breeding summer resident and migrant of the Central Valley of California. This species typically nests in scattered trees within grassland, shrubland, or agricultural landscapes. The stick nests are often at the edge of narrow bands of riparian vegetation, in isolated oak woodland, in lone, roadside, or farmyard trees, as well as in adjacent urban residential areas. Swainson's hawks will fly up to 18 miles from their nest in search of prey. There are 21 CNDDB occurrences of Swainson's hawk within 5 miles of the project site. The closest two closest occurrences were in 1994, approximately 0.75 miles from the site, and in 2003, approximately 1.85 miles from the site. Since then, these locations have been developed. The grassland on the site provides a small area suitable for foraging, as indicated by the single Swainson's hawk that was recorded by the trail camera. However, there are no trees suitable for nesting on or adjacent to the project site, and a review of recent aerial imagery indicates it is unlikely the species will nest within 1 mile of the project site.

American Badger

The American badger is a California Species of Special Concern. The historic range of badgers in California included most lowland and high mountains in large meadow systems and alpine fell fields, however badgers have disappeared from large portions of their historic range in the Central Valley due to cultivated agriculture, and in coastal areas due to urbanization. Badgers continue to be present in eastern Contra Costa and Alameda counties and are often found in the rolling grasslands where cattle grazing is the primary land use. Typically, badger habitat is open, uncultivated ground, including grassland, savannas, and mountain meadows. Individual badgers have a large home range and may use several dens. Badgers prey mainly on fossorial mammals by using their claws to dig out burrows. The CNDDB query returned seven occurrences of American badgers within 5 miles of the project site. Suitable grassland habitat where American badgers could both forage and den is present at the project site. However, the project site itself is too small to sustain a population of badgers. Furthermore, the residential development to the east, orchard to the north, and canal to the west reduce the ability of badgers to move through the site. No potential badger dens were observed during the field survey, but there is a moderate potential for the species to hunt on the project site.

San Joaquin Kit Fox

The San Joaquin Kit Fox is a subspecies of kit fox that is listed as Endangered by the USFWS and Threatened by the CDFW. It is found primarily in the San Joaquin Valley are of California; however, there are no known areas currently occupied by San Joaquin Kit Fox in the portions of Alameda, Contra Costa, and San Joaquin counties where they previously occurred. The San Joaquin Kit Fox inhabits a variety of habitats, including grasslands, scrublands, vernal pool areas, alkali meadows and playas, and an agricultural matrix of row crops, irrigated pastures, orchards, vineyards, and grazed annual grasslands. In the northern part of its range, including Alameda County, most habitat on the valley floor have been eliminated. In addition to habitat loss, the San Joaquin Kit Fox were likely extirpated by exposure to rodenticides used to reduce small mammal populations that the species preys on. There are 18 CNDDB occurrences of San Joaquin Kit Fox within 5 miles of the project site, with the closest occurrence in the early 1970s approximately 0.9 miles from the site. The most recent occurrence was in 2000,

approximately 3 miles from the site. Despite the more recent and extensive surveys conducted in Alameda County, no evidence of recent occupancy of the San Joaquin Kit Fox was found.

Monarch Butterfly

The monarch butterfly is a Candidate species for listing under the ESA. Candidate species have no legal protection under the ESA, but the monarch meets the CEQA definition of a special-species status. The CNDDB only tracks large overwintering colonies of monarch butterfly, which occur in coastal areas. Monarchs have been observed breeding in Alameda County and have been documented in 2021 in Tracy, approximately 10 miles east of the project site. No monarchs were observed at the project site during the surveys, but the presence of milkweed plants indicates moderate potential for monarchs to use the project site.

Aquatic Resources

No aquatic resources such as wetlands, vernal pools, or waterways were observed on the project site.

Critical Habitat

Designated critical habitat for four federally listed species – Contra Costa goldfields, vernal pool fairy shrimp, California red-legged frog, and Delta smelt – is located within 5 miles of the site. The project site itself is not located within designated critical habitat for any species. There are no aquatic features that could serve as habitat for these four species on the project site.

Sensitive Natural Communities

The CNDDB query returned three sensitive natural communities that have occurrences within 5 miles of the project site: Alkali Meadow, Northern Claypan Vernal Pool, and Valley Sink Scrub. However, none of these communities occur on the site.

4.4.2 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant biological resources impact if it would:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.
2. 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 Game or U.S. Fish and Wildlife Service.
3. Have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

4. 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.
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.
7. In combination with past, present, and reasonably foreseeable projects, result in significant cumulative impacts with respect to biological resources.

4.4.3 IMPACT DISCUSSION

BIO-1 **The proposed project may 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 by the California Department of Fish and Wildlife or United States Fish and Wildlife Service.**

As discussed in Section 4.4.1.2, Existing Conditions, and listed in Table 4.4-1, *Special-Status Plant Species Evaluated*, no special-status plant species exist onsite, nor do they have the potential to occur based on field surveys. Given that no special-status plant species are expected to occur within or in the immediate vicinity of the project site, no impacts to special-status plant species would occur. However, potential construction- and operation-period could impact nine special-status wildlife species: California tiger salamander, California red-legged frog, San Joaquin coachwhip, glossy snake, Coast horned lizard, burrowing owl, Swainson's hawk, American badger, and monarch butterfly. Therefore, impacts to these species would be *significant*.

Significance without Mitigation: Significant.

Impact BIO-1: Construction of the project could potentially kill, injure, or alter the behavior of special-status species on the site.

Mitigation Measure BIO-1.1: A qualified biologist will conduct an environmental education program for all persons employed or otherwise working on the project site before they perform any work. The program shall consist of a presentation from the biologist that includes a discussion of the biology and general behavior of special-status species on or near the site; information about the distribution and habitat needs of the species; sensitivity of the species to human activities; the status of the species pursuant to the Federal Endangered Species Act, the California Endangered Species Act, and the California Fish and Game Code including legal protection; recovery efforts; penalties for violations; and any project-specific protective measures described in this document or any subsequent documents or permits. Interpretation shall be provided for non-English speaking workers, and the same instruction shall be provided for any new workers before their performing work on the site. The biologist shall prepare and distribute wallet-sized cards or a fact sheet handout containing this

information for workers to carry on the site. Upon completion of the program, employees shall sign a form stating they attended the program and understand all the protection measures.

Mitigation Measure BIO-1.2: A qualified biologist will be on the site daily to monitor initial grubbing/ vegetation clearing, grading, and ground disturbing activities. The biologist will have the authority to stop work that may impact special-status species.

California tiger salamander, California red-legged frog, San Joaquin coachwhip, California glossy snake, and coast horned lizard: Construction of the project has the potential to injure or kill California tiger salamander, California red-legged frog, San Joaquin coachwhip, California glossy snake, and coast horned lizard that may be in rodent burrows during grading or installation of the monopoles. These species could become entangled in the plastic netting wrapped around erosion-control devices. These species could become entrapped in steep-sided trenches or walls. The proposed project would not impact any potential breeding habitat for California tiger salamander or California red-legged frog. Because California tiger salamander and California red-legged frog generally migrate at night during rain events and construction activities would occur during daylight hours, no impact on migrating individuals is expected. Operation of the proposed solar facility is not anticipated to impact California tiger salamander or glossy snake because the adults are only active on the surface at night. Potential impacts to these species would be reduced to *less than significant* with implementation of Mitigation Measures BIO-1.1, 1.2, 1.3, 1.4, and 1.5.

Mitigation Measure BIO-1.3: The Applicant shall include in the contract specifications a requirement to use tightly woven fiber of natural materials (e.g., coir rolls or mats) or similar material for erosion control. Plastic mono-filament netting (erosion control matting) or similar material shall be prohibited, to prevent the entrapment of wildlife.

Mitigation Measure BIO-1.4: Surveys for California tiger salamander, California red-legged frog, San Joaquin coachwhip, California glossy snake, and coast horned lizard shall be conducted by a qualified biologist within 24 hours prior to the initiation of any vegetation clearing or ground disturbing activities. All suitable habitat including refuge such as burrows, under rocks, duff, debris, etc., shall be thoroughly inspected. Any listed wildlife that are encountered will be allowed to leave the work area of their own volition.

Mitigation Measure BIO-1.5: To avoid entrapment, injury, or mortality of listed species resulting from falling into steep-sided holes or trenches, all excavated holes or trenches deeper than 12 inches shall be covered at the end of each workday with plywood or similar materials. Larger excavation that cannot easily be covered shall be ramped at the end of the workday to allow trapped animals an escape method.

Burrowing Owl: Construction of the project has the potential to crush or entomb burrowing owls in burrows. Construction work near an occupied burrow could impact breeding or wintering western burrowing owls through general disturbance. Installation of the solar panels will permanently impact 11 acres of burrowing owl habitat by lowering the habitat quality. Potential impacts to burrowing owl would be reduced to *less than significant* with implementation of Mitigation Measures BIO-1.1, 1.2, 1.6, 1.7, 1.8, and 1.9.

Mitigation Measure BIO-1.6: Prior to initiating construction activities, a California Department of Fish and Wildlife (CDFW)-approved biologist shall conduct surveys for burrowing owl within 500 feet of the project site, where safely accessible. This measure incorporates avoidance and minimization guidelines from the CDFW 2012 Staff Report on Burrowing Owl Mitigation. The surveys will establish the presence or absence of western burrowing owl and/or habitat features and evaluate use by owls. Surveys shall take place near sunrise or sunset in accordance with CDFW survey guidelines. All burrows or burrowing owls shall be identified and mapped. Surveys shall take place no more than 30 days prior to construction. During the breeding season (February 1–August 31), surveys shall document whether burrowing owls are nesting in or directly adjacent to disturbance areas. During the nonbreeding season (September 1–January 31), surveys shall document whether burrowing owls are using habitat in or directly adjacent to any disturbance area. Survey results shall be valid only for the season (breeding or nonbreeding) during which the survey is conducted.

Mitigation Measure BIO-1.7: If burrowing owls are found during the breeding season (February 1–August 31), the project proponent shall avoid all nest sites that could be disturbed by project construction during the remainder of the breeding season or while the nest is occupied by adults or young. Avoidance shall include establishment of a nondisturbance buffer zone (described below). Construction may occur during the breeding season if a qualified biologist monitors the nest and determines that the nest is inactive. During the nonbreeding season (September 1–January 31), the project proponent shall avoid the owls and the burrows they are using. Avoidance shall include the establishment of a buffer zone.

Mitigation Measure BIO-1.8: If occupied burrows for nonbreeding burrowing owls are not avoided, passive relocation shall be implemented. Owls shall be excluded from burrows in the immediate impact zone and within an appropriate buffer zone as recommended by the biologist in coordination with the California Department of Fish and Wildlife (CDFW) by installing one-way doors in burrow entrances. These doors shall be in place for 48 hours prior to excavation. The project area shall be monitored daily for 1 week to confirm that the owl has abandoned the burrow. Whenever possible, burrows shall be excavated using hand tools and refilled to prevent reoccupation. Plastic tubing or a similar structure shall be inserted in the tunnels during excavation to maintain an escape route for any owls inside the burrow.

Mitigation Measure BIO-1.9: To mitigate for the alteration of burrowing owl habitat, 10 acres on the western and northern edges of the site will be protected in perpetuity under a conservation easement or deed restriction. This land is contiguous with the levee and open space associated with the Mendota Canal. A mitigation and management plan (MMP) with success criteria will be developed for this area and approved by the California Department of Fish and Wildlife (CDFW).

Swainson's Hawk: Impacts on Swainson's hawk foraging habitat will include the permanent loss of approximately 11 acres of open grassland foraging habitat. The project will temporarily affect approximately 5 acres of mostly non-native annual grassland within the project site. Much of this area is characterized by ruderal, often sparse vegetation, trash accumulation, roadside gravel, and fill. The area next to the roadway is also subject to noise from passing vehicles and presents a strike risk to the birds and is thus a sub-optimal foraging area. There are no suitable nest trees on or adjacent to the project site. The project site is a relatively small, disjunct parcel of habitat adjacent to dense residential development;

by itself it cannot support a breeding pair of Swainson's hawk. However, the incremental loss of foraging habitat could be a significant impact. Potential impacts to Swainson's hawk would be reduced to *less than significant* with implementation of Mitigation Measures BIO-1.1, 1.2, 1.9, and 1.10.

> Mitigation Measure BIO-1.10: The mitigation and management plan (MMP) described in Mitigation Measure BIO-1.9 for the 10-acre conservation area shall include a prescription for managing the area as habitat for Swainson's hawk. The MMP will include success criteria for Swainson's hawk habitat.

San Joaquin Kit Fox: Kit fox are extirpated from the area and are not expected to use the site. In the event kit fox recolonize the northern part of their range and move into the project site area at some future time, they will be able to move through the wildlife-friendly fence and use the protected 10 acres described in Measure BIO-1.9. Therefore, impacts to San Joaquin kit fox will be *less than significant*.

American Badger: Initial grading and ground disturbance of the site could injure or kill American badgers in dens or burrows, in the event any are present on the site at the time of the disturbance. Potential impacts to these species would be reduced to *less than significant* with implementation of Mitigation Measures BIO-1.1, 1.2, 1.11, and 1.12.

> Mitigation Measure BIO-1.11: Pre-construction surveys shall be conducted for the American badger no more than 14 days prior to the initiation of ground-disturbing activities. Surveys shall be conducted by a qualified wildlife biologist with experience and knowledge in identifying badger burrows and include walking parallel transects looking for badger burrows and sign. Any badger dens identified shall be flagged and mapped.

> Mitigation Measure BIO-1.12: In the event active badger dens are identified, a no-work buffer of 200 feet shall be established around the den and associated occupied areas. If avoidance is not feasible, a biologist shall determine if the burrow is being used as an active maternity den through utilization of remote cameras. If young are determined to be present, the burrow shall be avoided until the young have vacated the burrow as determined by a qualified biologist. If the burrow is determined not to be an active maternity den and young are not present, in coordination with the California Department of Fish and Wildlife (CDFW), a one-way eviction door shall be installed between September 1 and January 1 to passively relocate the badger and to avoid impacts during the breeding season. If the badger digs back into the burrow, CDFW staff may allow the use of live traps to relocate badgers to suitable habitat from the area of project impact.

Monarch Butterfly: Development of the project site would result in the loss of small numbers of narrow-leaved milkweed, the larval food plant for the monarch butterfly. If monarch eggs, larvae, or chrysalides are on the milkweed at the time they are removed it would result in mortality. After construction, the solar panels would lead to the loss of milkweed plants and therefore monarch breeding habitat. Potential impacts to monarch butterfly would be reduced to *less than significant* with implementation of Mitigation Measures BIO-1.1, 1.2, 1.9, 1.13, 1.14, and 1.15.

> Mitigation Measure BIO-1.13: The mitigation and management plan (MMP) described in Measure BIO-1.9 for the 10-acre conservation area shall include prescription of an appropriate seed mix and planting plan targeted for the monarch butterfly, including milkweed and native flowering plant

species known to be visited by monarch butterflies and containing a mix of flowering plant species with continual floral availability through the entire breeding season for monarch butterfly (early spring to fall). The MMP will include success criteria for monarch butterfly.

Mitigation Measure BIO-1.14: A qualified biologist will conduct a minimum of two pre-construction surveys conducted within 30 days during appropriate activity periods (i.e., March through September) and conditions prior to the start of ground disturbing activities to look for milkweed host plants and signs of monarch breeding activity (larvae or chrysalides). Appropriate conditions for conducting the survey include surveying when temperatures are above 60 degrees Fahrenheit (15.5 degrees Celsius) and not during wet conditions (e.g., foggy, raining, or drizzling). The survey should be conducted at least 2 hours after sunrise and 3 hours before sunset and should occur at least 1 hour after rain subsides. Preferably, the survey should be conducted during sunny days with low wind speeds (less than 8 miles per hour) but surveying during partially cloudy days or overcast conditions are permissible if the surveyors can still see their own shadow.

Mitigation Measure BIO-1.15: If monarch butterflies are observed within the project site, a plan to protect monarch butterflies shall be developed and implemented in consultation with the United States Fish and Wildlife Service. The plan shall include, but not be limited to, the following measures:

- Specifications for construction timing and sequencing requirements;
- Establishment of appropriate no-disturbance buffers for milkweed and construction monitoring by a qualified biologist to ensure compliance if milkweed is identified;
- Restrictions associated with construction practices, equipment, or materials that may harm monarch butterflies (e.g., avoidance of pesticides/herbicides, best management practices to minimize the spread of invasive plant species); and
- Provisions to avoid monarch butterflies if observed away from a milkweed plant during project activity (e.g., ceasing of project activities until the animal has left the active work area on its own volition).

Implementation of Mitigation Measures BIO-1.1, BIO-1.2, BIO-1.3, BIO-1.4, BIO-1.5, BIO-1.6, BIO-1.7, BIO-1.8, BIO-1.9, BIO-1.10, BIO-1.11, BIO-1.12, BIO-1.13, BIO-1.14, and BIO-1.15 would result in monitoring and protection of special-status wildlife species that may occur on-site, and impacts would be reduced to *less than significant*.

Significance with Mitigation: Less than significant.

BIO-2	**The proposed project would not have a substantial adverse effect on any riparian habitat, but it could have a substantial adverse effect on other sensitive natural communities identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service.**

No riparian habitats or other sensitive natural communities are present on or immediately adjacent to the project site. Thus, the proposed project would have *no impact* on riparian habitats or other sensitive natural communities.

Significance Without Mitigation: No impact.

BIO-3	**The proposed project would not have a substantial adverse effect on state or federally protected wetlands (marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.**

No wetlands or other federal or state waters occur on or immediately adjacent to the project site. Therefore, the proposed project would have *no impact* on jurisdictional wetlands.

Significance Without Mitigation: No impact.

BIO-4	**The proposed project would not interfere with the movement of a 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.**

Environmental corridors are segments of land that provide a link between different habitat types while also provided cover. Development fragments natural habitats, breaking them into smaller disjunct pieces. As habitat patches become smaller, they are unable to support as many individuals. Additionally, the area between the habitat patches may become unsuitable for wildlife species to traverse.

The proposed project is surrounded by some existing development, including residential development and agricultural lands where the footprint is already disturbed. Removal of vegetation and solar input of the proposed project would further reduce the value of the project site for use by dispersing animals. Development of grassland on the project site would remove natural habitat that is used by resident and dispersing wildlife. The grassland would be mostly separated from similar nearby habitats by the Mendota Canal, a busy road, an orchard, and residential development. Noise and human activity would increase during construction of the proposed project, potentially alerting animal behavior and discouraging species movement through the site. As a result, the project site does not provide high-quality areas for wildlife movement.

However, the project's impacts on wildlife movement are not anticipated to substantially impede the movement of any species within the project site vicinity. Many animals are still expected to move through the site, despite incremental increase of human activity or noise. Furthermore, the project site is not the only path where animals can move between the open space to the north and south. There is a vegetated strip similar to that of the project site to the west of the site along the Mendota Canal that would serve as an alternative route. Therefore, the proposed project would not result in fragmentation of natural habitats or substantial impediments to wildlife movement. As such there would be no interference with the movement of a native resident or migratory wildlife species or corridors and impacts would be *less than significant*.

A small number of native bird species are likely to nest on the project site, but this does not meet the definition of a wildlife nursery site. The site does not provide extensive or high-quality habitat areas that would support a large breeding population of any wildlife species. Therefore, the proposed project would not impede the use of wildlife nursery sites, as there are none present at the project site.

Significance Without Mitigation: Less than significant.

BIO-5 The proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

As described in Section 4.4.1.1, *Regulatory Framework*, ECAP Policies 123, 124, and 125 discuss the County's encouragement of mitigation of site-specific impacts to biological resources, maintenance of biological diversity, and preservation of areas known to support special-status species. The implementation of the proposed Mitigation Measures BIO-1.1 through 1.15 will ensure that the proposed project complies with these policies. Therefore, the proposed project would not conflict with any local policies or ordinance regarding biological resources and impacts would be *less than significant*.

Significance Without Mitigation: Less than significant.

BIO-6 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.

As described in Section 4.4.1.1, *Regulatory Framework*, 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.[5] 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 7 (CZ7), which encompasses the extreme northeastern corner of the county. The CZ7 is comprised of annual grassland, alkali meadow and scald, and pond, which provide habitat for the San Joaquin spearscale, recurved larkspur, longhorn fairy shrimp, and vernal pool fairly shrimp. Conservation priorities within the CZ7 are based on the rarity of the feature and the risk of losing conservation opportunities in the future.[6] Such priorities include the protection of recurved larkspur and San Joaquin spearscale, enhancement of and creation of additional linkages for the San Joaquin kit fox, protection of alkali meadows and scalds, which in turn would protect its inhabitants, and protection of critical habitat for California red-legged frog.

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

[6] East Alameda County Conservation Strategy Steering Committee, October 2010. East Alameda County Conservation Strategy, Final Draft, Section 4.7, Conservation Zone 7, pages 4-15 to 4-17.

As summarized in Table 4.4-2, *Special-Status Animal Species Evaluated*, there is no potential for any of these species to occur, with the exception of the California red-legged frog which has a low potential for occurrence. Mitigation Measures BIO-1.1 through BIO-1.5 discussed above would ensure that any occurrence(s) shall be avoided and adequately mitigated as part of the proposed project. Therefore, the proposed project would not conflict with the provisions of a habitat conservation plan or natural community conservation plan and impacts would be *less than significant*.

Significance Without Mitigation: Less than significant.

BIO-7 The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to biological resources.

The cumulative development projects in the vicinity of the proposed project are described in Chapter 4.0, *Environmental Analysis*, of this Draft EIR. The geographic scope of the cumulative analysis for biological resources is the area surrounding the project site. Therefore, projects included in this cumulative analysis are 19550 W Grant Line Road 0.3 miles away, 22261 South Mountain House Parkway 0.9 miles away, Arnaudo Boulevard at Mountain House II Apartments 1.4 miles away, Telecommunications Tower/21000 South Mountain House Park 1.6 miles away, and 17400 West Bethany Road 2 miles away.

Development of the surrounding projects would occur in areas largely surrounded by existing development where sensitive biological resources are generally considered to be absent. Projects would be required to comply with relevant federal, state, or local policies or ordinances. Further environmental review of specific development should serve to ensure that important biological resources are identified, protected, and properly managed to prevent any significant adverse impacts.

As discussed above, construction and operation of the proposed project would result in less than significant impacts on species identified as a candidate, sensitive, or special-status species through implementation of Mitigation Measures BIO-1.1 through BIO-1.15. There would be no impacts to riparian habitats, other sensitive natural communities, wetlands, or federal or state jurisdictional waters, as there are none located on the project site. The proposed project would not interfere with wildlife corridors or native wildlife nursery sites. The proposed project would also comply with local policies or ordinances protecting biological resources, and the local habitat conservation plan.

Therefore, in combination with past, present, and reasonably foreseeable projects, the proposed project would result in a *less than significant* cumulative impact with respect to biological resources.

Significance Without Mitigation: Less than significant.

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4.5 GREENHOUSE GAS EMISSIONS

This chapter describes the existing greenhouse gas (GHG) emissions in the area of the project site and evaluates the potential environmental consequences of construction and operation of the proposed project. Additionally, this chapter describes the environmental setting, including regulatory framework and the existing GHG setting and baseline conditions, and identifies mitigation measures, if required, that would avoid or reduce significant impacts. This evaluation is based on the methodology recommended by the Bay Area Air Quality Management District (BAAQMD or Air District).

4.5.1 TERMINOLOGY

The following are definitions for terms used throughout this chapter.

- **Greenhouse gases (GHGs).** Gases in the atmosphere that absorb infrared light, thereby retaining heat in the atmosphere and contributing to a greenhouse effect.
- **Global warming potential (GWP).** Metric used to describe how much heat a molecule of a GHG absorbs relative to a molecule of carbon dioxide (CO_2) over a given period of time (20, 100, and 500 years). CO_2 has a GWP of 1.
- **Carbon dioxide-equivalent (CO_2e)**. The standard unit to measure the amount of GHGs in terms of the amount of CO_2 that would cause the same amount of warming. CO_2e is based on the GWP ratios between the various GHGs relative to CO_2.
- **$MTCO_2e$.** Metric ton of CO_2e.
- **$MMTCO_2e$.** Million metric tons of CO_2e.

4.5.2 ENVIRONMENTAL SETTING

4.5.2.1 GREENHOUSE GASES AND CLIMATE CHANGE

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHGs, to the atmosphere. The primary source of these GHGs is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHG—water vapor, carbon dioxide (CO_2), methane (CH_4), and ozone (O_3)—that are likely cause of an increase in global average temperatures observed in the 20th and 21st centuries. Other GHGs identified by the IPCC that contribute to global warming to a lesser extent are nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons.[1,2,3]

[1] Intergovernmental Panel on Climate Change, 2001. Third Assessment Report: Climate Change 2001, New York: Cambridge University Press.

[2] 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 because it is considered part of the feedback loop of changing radiative forcing rather than a primary cause of change.

[3] 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-

The major GHGs are briefly described as follows:

- **Carbon dioxide (CO_2)** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.
- **Methane (CH_4)** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal landfills and water treatment facilities.
- **Nitrous oxide (N_2O)** is emitted during agricultural and industrial activities as well as during combustion of fossil fuels and solid waste.

GHGs are dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Some GHGs have a stronger greenhouse effect than others. These are referred to as high GWP gases. The GWP of applicable GHG emissions are shown in Table 4.5-1, *GHG Emissions and Their Relative Global Warning Potential Compared to CO_2*. The GWP is used to convert GHGs to CO_2-equivalence (CO_2e) to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. For example, under IPCC's Fourth Assessment Report (AR4) GWP values for methane (CH_4), a project that generates 10 metric tons (MT) of CH_4 would be equivalent to 250 MT of CO_2.[4]

TABLE 4.5-1 GHG EMISSIONS AND THEIR RELATIVE GLOBAL WARMING POTENTIAL COMPARED TO CO_2

GHGs	Second Assessment Report (SAR) Global Warming Potential Relative to CO_2[a]	Fourth Assessment Report (AR4) Global Warming Potential Relative to CO_2[a]	Fifth Assessment Report (AR5) Global Warming Potential Relative to CO_2[a]
Carbon Dioxide (CO_2)	1	1	1
Methane[b] (CH_4)	21	25	28
Nitrous Oxide (N_2O)	310	298	265

Notes: GWP values identified in AR4 are used by BAAQMD to maintain consistency in statewide GHG emissions modeling.
a. Based on 100-year time horizon of the GWP of the air pollutant compared to CO_2.
b. The methane GWP includes direct effects and indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO_2 is not included.
Sources: Intergovernmental Panel on Climate Change, 1995, Second Assessment Report: Climate Change 1995; Intergovernmental Panel on Climate Change. 2007. Fourth Assessment Report: Climate Change 2007. New York: Cambridge University Press; Intergovernmental Panel on Climate Change. 2014. Fifth Assessment Report: Climate Change 2014. New York: Cambridge University Press.

absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. 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 burning activities (California Air Resources Board, 2017, March 14. Short-Lived Climate Pollutant Reduction Strategy, https://www.arb.ca.gov/cc/shortlived/shortlived.htm). However, State and national GHG inventories do not 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.

[4] CO_2-equivalence is used to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. The global warming potential of a GHG is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

California's GHG Sources and Relative Contribution

In 2019, the statewide GHG emissions inventory was updated for 2000 to 2017 emissions using the GWPs in IPCC's AR4.[5] Based on these GWPs, California produced 424.10 $MMTCO_2e$ GHG emissions in 2017. California's transportation sector was the single largest generator of GHG emissions, producing 40.1 percent of the state's total emissions. Industrial sector emissions made up 21.1 percent, and electric power generation made up 14.7 percent of the state's emissions inventory. Other major sectors of GHG emissions include commercial and residential (9.7 percent), agriculture and forestry (7.6 percent) high GWP (4.7 percent), and recycling and waste (2.1 percent).[6]

California's GHG emissions have followed a declining trend since 2007. In 2017, emissions from routine GHG emitting activities statewide were 424 $MMTCO_2e$, 5 $MMTCO_2e$ lower than 2016 levels. This represents an overall decrease of 14 percent since peak levels in 2004 and 7 $MMTCO_2e$ below the 1990 level and the state's 2020 GHG target. During the 2000 to 2017 period, per capita GHG emissions in California have continued to drop from a peak in 2001 of 14.0 $MTCO_2e$ per capita to 10.7 $MTCO_2e$ per capita in 2017, a 24 percent decrease. Overall trends in the inventory also demonstrate that the carbon intensity of California's economy (the amount of carbon pollution per million dollars of gross domestic product (GDP)) is declining, representing a 41 percent decline since the 2001 peak, while the state's GDP has grown 52 percent during this period. For the first time since California started to track GHG emissions, California uses more electricity from zero-GHG sources (hydro, solar, wind, and nuclear energy). [7]

Human Influence on Climate Change

For approximately 1,000 years before the Industrial Revolution, the amount of GHGs in the atmosphere remained relatively constant. During the 20th century, however, scientists observed a rapid change in the climate and the quantity of climate change pollutants in the Earth's atmosphere that is attributable to human activities. The amount of CO_2 in the atmosphere has increased by more than 35 percent since preindustrial times and has increased at an average rate of 1.4 parts per million per year since 1960, mainly due to combustion of fossil fuels and deforestation.[8] These recent changes in the quantity and concentration of climate change pollutants far exceed the extremes of the ice ages, and the global mean temperature is warming at a rate that cannot be explained by natural causes alone. Human activities are directly altering the chemical composition of the atmosphere through the buildup of climate change pollutants.[9] In the past, gradual changes in the earth's temperature changed the distribution of species, availability of water, etc. However, human activities are accelerating this process so that environmental

[5] Methodology for determining the statewide GHG inventory is not the same as the methodology used to determine statewide GHG emissions under Assembly Bill 32 (2006).

[6] California Air Resources Board (CARB). 2019, August 26. California Greenhouse Emissions for 2000 to 2017: Trends of Emissions and Other Indicators. https://www.arb.ca.gov/cc/inventory/data/data.htm, accessed November 21, 2019.

[7] California Air Resources Board (CARB). 2019, August 26. California Greenhouse Emissions for 2000 to 2017: Trends of Emissions and Other Indicators. https://www.arb.ca.gov/cc/inventory/data/data.htm, accessed November 21, 2019.

[8] Intergovernmental Panel on Climate Change, 2007. *Fourth Assessment Report: Climate Change 2007*, New York: Cambridge University Press.

[9] California Climate Action Team, 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature.

impacts associated with climate change no longer occur in a geologic time frame but within a human lifetime.[10]

Like the variability in the projections of the expected increase in global surface temperatures, the environmental consequences of gradual changes in the Earth's temperature are hard to predict. Projections of climate change depend heavily upon future human activity. Therefore, climate models are based on different emission scenarios that account for historical trends in emissions and on observations of the climate record that assess the human influence of the trend and projections for extreme weather events. Climate-change scenarios are affected by varying degrees of uncertainty—for example, on the magnitude of the trends for:

- Warmer and fewer cold days and nights over most land areas.
- Warmer and more frequent hot days and nights over most land areas.
- An increase in frequency of warm spells/heat waves over most land areas.
- An increase in frequency of heavy precipitation events (or proportion of total rainfall from heavy falls) over most areas.
- Larger areas affected by drought.
- Intense tropical cyclone activity increases.
- Increased incidence of extreme high sea level (excluding tsunamis).

Potential Climate Change Impacts for California

Observed changes over the last several decades across the western United States reveal clear signs of climate change. Statewide average temperatures increased by about 1.7 degrees Fahrenheit (°F) from 1895 to 2011, and warming has been greatest in the Sierra Nevada.[11] The years from 2014 through 2016 have shown unprecedented temperatures with 2014 being the warmest.[12] By 2050, California is projected to warm by approximately 2.7°F above 2000 averages, a threefold increase in the rate of warming over the last century. By 2100, average temperatures could increase by 4.1 to 8.6°F, depending on emissions levels.[13]

In California and western North America, observations of the climate have shown: 1) a trend toward warmer winter and spring temperatures; 2) a smaller fraction of precipitation falling as snow; 3) a decrease in the amount of spring snow accumulation in the lower and middle elevation mountain zones; 4) advanced shift in the timing of snowmelt of 5 to 30 days earlier in the spring; and 5) a similar shift (5 to 30 days earlier) in the timing of spring flower blooms.[14] Overall, California has become drier over time,

[10] Intergovernmental Panel on Climate Change, 2007. *Fourth Assessment Report: Climate Change 2007*, New York: Cambridge University Press.

[11] California Climate Change Center, 2012. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California.

[12] Office of Environmental Health Hazards Assessment, 2018. Indicators of Climate Change in California. https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf, accessed November 21, 2019.

[13] California Climate Change Center, 2012. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California.

[14] California Climate Action Team, 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature.

with five of the eight years of severe to extreme drought occurring between 2007 and 2016, and unprecedented dry years in 2014 and 2015. Statewide precipitation has become increasingly variable from year to year, with the driest consecutive four years occurring from 2012 to 2015.[15]

According to the California Climate Action Team—a committee of state agency secretaries and the heads of agencies, boards, and departments, led by the Secretary of the California Environmental Protection Agency—even if actions could be taken to immediately curtail climate change emissions, the potency of emissions that have already built up, their long atmospheric lifetimes (see Table 4.5-1), and the inertia of the Earth's climate system could produce as much as 0.6 degrees Celsius (°C) (1.1°F) of additional warming. Consequently, some impacts from climate change are now considered unavoidable. Global climate change risks to California are described below and shown in Table 4.5-2, *Summary of GHG Emissions Risk to California*.

TABLE 4.5-2 SUMMARY OF GHG EMISSIONS RISK TO CALIFORNIA

Impact Category	Potential Risks
Public Health Impacts	Heat waves will be more frequent, hotter, and longer Poor air quality made worse Higher temperatures increase ground-level ozone (i.e., smog) levels
Water Resource Impacts	Decreasing Sierra Nevada snowpack Challenges in securing adequate water supply Potential reduction in hydropower Loss of winter recreation
Agricultural Impacts	Increasing temperature Increasing threats from pests and pathogens Expanded ranges of agricultural weeds Declining productivity Irregular blooms and harvests
Coastal Sea Level Impacts	Accelerated sea level rise Increasing coastal floods Shrinking beaches Worsened impacts on infrastructure
Forest and Biological Resource Impacts	Increased risk and severity of wildfires Lengthening of the wildfire season Movement of forest areas Conversion of forest to grassland Declining forest productivity Increasing threats from pest and pathogens Shifting vegetation and species distribution Altered timing of migration and mating habits Loss of sensitive or slow-moving species

Sources: California Climate Change Center, 2012, Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California. California Energy Commission, 2006. Our Changing Climate: Assessing the Risks to California, 2006 Biennial Report, CEC-500-2006-077. California Energy Commission, 2009. The Future Is Now: An Update on Climate Change Science, Impacts, and Response Options for California. CEC-500-2008-0077. California Natural Resources Agency, 2014. Safeguarding California: Reducing Climate Risk, An Update to the 2009 California Climate Adaptation Strategy.

[15]Office of Environmental Health Hazards Assessment, 2018. Indicators of Climate Change in California. https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf, accessed April 3, 2019.

- Water Resources Impacts. By late this century, all projections show drying, and half of the projections suggest 30-year average precipitation will decline by more than 10 percent below the historical average. Even in projections with relatively little or no decline in precipitation, central and southern parts of the state are expected to be drier from the warming effects alone because the spring snowpack will melt sooner, and the moisture in soils will evaporate during long dry summer months.[16]
- Wildfire Risks. Earlier snowmelt, higher temperatures, and longer dry periods over a longer fire season will directly increase wildfire risk. Indirectly, wildfire risk will also be influenced by potential climate-related changes in vegetation and ignition potential from lightning. Human activities will continue to be the biggest factor in ignition risk. The number of large fires statewide is estimated to increase by 58 percent to 128 percent above historical levels by 2085. Under the same emissions scenario, estimated burned area will increase by 57 percent to 169 percent, depending on location.[17]
- Health Impacts. Many of the gravest threats to public health in California stem from the increase of extreme conditions, principally more frequent, more intense, and longer heat waves. Particular concern centers on the increasing tendency for multiple hot days in succession, and simultaneous heat waves in several regions throughout the state. Public health could also be affected by climate change impacts on air quality, food production, the amount and quality of water supplies, energy pricing and availability, and the spread of infectious diseases. Higher temperatures also increase ground-level ozone levels. Furthermore, wildfires can increase particulate air pollution in the major air basins of California.[18]
- Increase Energy Demand. Increases in average temperature and higher frequency of extreme heat events combined with new residential development across the state will drive up the demand for cooling in the increasingly hot and longer summer season and decrease demand for heating in the cooler season. Warmer, drier summers also increase system losses at natural gas plants (reduced efficiency in the electricity generation process at higher temperatures) and hydropower plants (lower reservoir levels). Transmission of electricity will also be affected by climate change. Transmission lines lose 7 percent to 8 percent of transmitting capacity in high temperatures while needing to transport greater loads. This means that more electricity needs to be produced to make up for the loss in capacity and the growing demand.[19]

4.5.2.2 REGULATORY FRAMEWORK

Federal Regulations

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 GHG emissions from

[16] California Council on Science and Technology, 2012. California's Energy Future: Portraits of Energy Systems for Meeting Greenhouse Gas Reduction Targets. https://ccst.us/wp-content/uploads/2012ghg.pdf, accessed November 21, 2019.

[17] California Council on Science and Technology, 2012. California's Energy Future: Portraits of Energy Systems for Meeting Greenhouse Gas Reduction Targets. https://ccst.us/wp-content/uploads/2012ghg.pdf, accessed November 21, 2019.

[18] California Council on Science and Technology, 2012. California's Energy Future: Portraits of Energy Systems for Meeting Greenhouse Gas Reduction Targets. https://ccst.us/wp-content/uploads/2012ghg.pdf, accessed November 21, 2019.

[19] California Council on Science and Technology, 2012. California's Energy Future: Portraits of Energy Systems for Meeting Greenhouse Gas Reduction Targets. https://ccst.us/wp-content/uploads/2012ghg.pdf, accessed November 21, 2019.

on-road vehicles contribute to that threat. The USEPA's final findings respond to the 2007 U.S. Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings did not themselves impose any emission reduction requirements but allowed the USEPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation.[20]

To regulate GHGs from passenger vehicles, the USEPA issued an endangerment finding.[21] The finding identifies emissions of six key GHGs—CO_2, CH_4, N_2O, HCFCs, PFCs, 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. The first three are applicable to the proposed project's GHG emissions inventory because they constitute the majority of GHG emissions and, per BAAQMD guidance, they are the GHG emissions that should be evaluated as part of a project's GHG emissions inventory.

- US Mandatory Report Rule for Greenhouse Gases (2009). In response to the endangerment finding, the USEPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 $MTCO_2e$ per year are required to submit an annual report.
- Update to Corporate Average Fuel Economy Standards (2017 to 2026). The federal government issued new Corporate Average Fuel Economy (CAFE) standards in 2012 for model years 2017 to 2025, which required a fleet average of 54.5 miles per gallon in 2025. However, on March 30, 2020, the USEPA finalized an updated CAFE and GHG emissions standards for passenger cars and light trucks and established new standards, covering model years 2021 through 2026, known as The Safer Affordable Fuel Efficient (SAFE) Vehicles Final Rule for Model Years 2021-2026. However, consortium of automakers and California have agreed on a voluntary framework to reduce emissions that can serve as an alternative path forward for clean vehicle standards nationwide. Automakers who agreed to the framework are Ford, Honda, BMW of North America and Volkswagen Group of America. The framework supports continued annual reductions of vehicle greenhouse gas emissions through the 2026 model year, encourages innovation to accelerate the transition to electric vehicles, and provides industry the certainty needed to make investments and create jobs. This commitment means that the auto companies party to the voluntary agreement will only sell cars in the United States that meet these standards.[22]
- USEPA Regulation of Stationary Sources under the Clean Air Act (Ongoing). Pursuant to its authority under the Clean Air Act, the EPA has been developing regulations for new, large, stationary sources of emissions, such as power plants and refineries. Under former President Obama's 2013 Climate Action Plan, the EPA was directed to develop regulations for existing stationary sources as well. On June 19,

[20] U.S. Environmental Protection Agency, 2009. EPA: Greenhouse Gases Threaten Public Health and the Environment. https://archive.epa.gov/epapages/newsroom_archive/newsreleases/08d11a451131bca585257685005bf252.html, accessed November 21, 2019.

[21] U.S. Environmental Protection Agency, 2009. EPA: Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act. https://www.epa.gov/climate-change/endangerment-and-cause-or-contribute-findings-greenhouse-gases-under-section-202a, accessed February 15, 2022.

[22] California Air Resources Board. California and major automakers reach groundbreaking framework agreement on clean emission standards. Accessed March 29, 2020. https://ww2.arb.ca.gov/news/california-and-major-automakers-reach-groundbreaking-framework-agreement-clean-emission

2019, the EPA issued the final Affordable Clean Energy (ACE) rule which became effective on August 19,2019. The ACE rule was crafted under the direction of President Trump's Energy Independence Executive Order. It officially rescinds the Clean Power Plan rule issued during the Obama Administration and sets emissions guidelines for states in developing plans to limit CO_2 emissions from coal-fired power plants.

State Regulations

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in Executive Order S-03-05, AB 32, SB 32, Executive Order B-30-15, and SB 375. These are summarized as follows:

- 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.
- Assembly Bill 32. Also known as the Global Warming Solutions Act (2006), AB 32 was signed August 31, 2006, in order to reduce California's contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction targets established in Executive Order S-03-05. Under AB 32, California Air Resources Board (CARB) prepared the *2008 Climate Change Scoping Plan*, the *2014 Climate Change Scoping Plan,* and the *2017 Climate Change Scoping Plan,* which is discussed below.
  - CARB 2008 Scoping Plan. The 2008 Scoping Plan, adopted by CARB on December 11, 2008, identified that GHG emissions in California are anticipated to be 596 $MMTCO_2e$ in 2020. In December 2007, CARB approved a 2020 emissions limit of 427 $MMTCO_2e$ (471 million tons) for the state. To effectively implement the emissions cap, AB 32 directed CARB to establish a mandatory reporting system to track and monitor GHG emissions levels for large stationary sources that generate more than 25,000 $MTCO_2e$ per year, prepare a plan demonstrating how the 2020 deadline can be met, and develop appropriate regulations and programs to implement the plan by 2012.
  - First Update to the Scoping Plan. CARB completed a five-year update to the 2008 Scoping Plan, as required by AB 32. The First Update to the Scoping Plan, adopted May 22, 2014, highlights California's progress toward meeting the near-term 2020 GHG emission reduction goal defined in the 2008 Scoping Plan. As part of the update, CARB recalculated the 1990 GHG emission levels with the updated AR4 GWPs, and the 427 $MMTCO_2e$ 1990 emissions level and 2020 GHG emissions limit, established in response to AB 32, are slightly higher at 431 $MMTCO_2e$.[23] As identified in the Update to the Scoping Plan, California is on track to meet the goals of AB 32. The update also addresses the state's longer-term GHG goals in a post-2020 element. The post-2020

[23] California Air Resources Board, 2014. First Update to the Climate Change Scoping Plan: Building on the Framework, Pursuant to AB 32, The California Global Warming Solutions Act of 2006. https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf, accessed February 15, 2022.

element provides a high-level view of a long-term strategy for meeting the 2050 GHG goals, including a recommendation for the State to adopt a midterm target. According to the Update to the Scoping Plan, local government reduction targets should chart a reduction trajectory that is consistent with or exceeds the trajectory created by statewide goals.[24] CARB identified that reducing emissions to 80 percent below 1990 levels will require a fundamental shift to efficient, clean energy in every sector of the economy. Progressing toward California's 2050 climate targets will require significant acceleration of GHG reduction rates. Emissions from 2020 to 2050 will have to decline several times faster than the rate needed to reach the 2020 emissions limit.[25]

- Executive Order B-30-15. 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. Executive Order B-30-15 also directs CARB to update the Scoping Plan to quantify the 2030 GHG reduction goal for the state and requires state agencies to implement measures to meet the interim 2030 goal as well as the long-term goal for 2050 in Executive Order S-03-05. It also requires the Natural Resources Agency to conduct triennial updates of the California adaption strategy, Safeguarding California, in order to ensure climate change is accounted for in state planning and investment decisions.
- Senate Bill 32 and Assembly Bill 197. In September 2016, SB 32 and AB 197 were signed into law, making the Executive Order goal for year 2030 into a statewide mandated legislative target. AB 197 established a joint legislative committee on climate change policies and requires the CARB to prioritize direct emissions reductions rather than the market-based cap-and-trade program for large stationary, mobile, and other sources.
  - 2017 Climate Change Scoping Plan Update. 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. On December 14, 2017, CARB adopted the 2017 Climate Change Scoping Plan Update (2017 Scoping Plan) to address the 2030 target for the State. The 2017 Scoping Plan establishes a new emissions limit of 260 $MMTCO_2e$ for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030.[26]

    California's climate strategy will require contributions from all sectors of the economy, including enhanced focus on zero- and near-zero emission (ZE/NZE) vehicle technologies; continued investment in renewables, such as solar roofs, wind, and other types of distributed generation; greater use of low carbon fuels; integrated land conservation and development strategies; coordinated efforts to reduce emissions of short-lived climate pollutants (i.e., methane, black carbon, and fluorinated gases); and an increased focus on integrated land use planning to support

[24] California Air Resources Board, 2014. First Update to the Climate Change Scoping Plan: Building on the Framework, Pursuant to AB 32, The California Global Warming Solutions Act of 2006. https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf, accessed February 15, 2022.

[25] California Air Resources Board, 2014. First Update to the Climate Change Scoping Plan: Building on the Framework, Pursuant to AB 32, The California Global Warming Solutions Act of 2006. https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf, accessed February 15, 2022.

[26] California Air Resources Board, 2017. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf, accessed November 21, 2019.

livable, transit-connected communities and conserve agricultural and other lands. Requirements for GHG reductions at stationary sources complement local air pollution control efforts by the local air districts to tighten criteria air pollutants and toxic air contaminants (TACs) emissions limits on a broad spectrum of industrial sources. Major elements of the 2017 Scoping Plan framework include:

- Implementing and/or increasing the standards of the Mobile Source Strategy, which include increasing ZE vehicle buses and trucks.
- Low Carbon Fuel Standard (LCFS), with an increased stringency (18 percent by 2030).
- Implementation of SB 350, which expands the Renewables Portfolios Standard (RPS) to 50 percent RPS and doubles energy efficiency savings by 2030.
- California Sustainable Freight Action Plan, which improves freight system efficiency, and utilizes near-zero emissions technology, and deployment of ZE vehicle trucks.
- Implementing the proposed Short-Lived Climate Pollutant Strategy, which focuses on reducing methane and hydrofluorocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030.
- Continued implementation of SB 375.
- Post-2020 Cap-and-Trade Program that includes declining caps.
- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

In addition to the statewide strategies listed above, the 2017 Climate Change Scoping Plan also identified local governments as essential partners in achieving the State's long-term GHG reduction goals and recommended local actions to reduce GHG emissions; for example, statewide targets of no more than 6 $MTCO_2e$ or less per capita by 2030 and 2 $MTCO_2e$ or less per capita by 2050. CARB recommends that local governments evaluate and adopt robust and quantitative locally appropriate goals that align with the statewide per capita targets and the State's sustainable development objectives and develop plans to achieve the local goals. The statewide per capita goals were developed by applying the percent reductions necessary to reach the 2030 and 2050 climate goals (i.e., 40 percent and 80 percent, respectively) to the State's 1990 emissions limit established under AB 32. For CEQA projects, CARB states that lead agencies have the discretion to develop evidenced-based numeric thresholds (mass emissions, per capita, or per service population)—consistent with the Scoping Plan and the State's long-term GHG goals. To the degree a project relies on GHG mitigation measures, CARB recommends that lead agencies prioritize on-site design features that reduce emissions, especially from vehicle miles traveled (VMT), and direct investments in GHG reductions within the project's region that contribute potential air quality, health, and economic co-benefits. Where further project design or regional investments are infeasible or not proven to be effective, CARB recommends mitigating potential GHG impacts through purchasing and retiring carbon credits.

The Scoping Plan scenario is set against what is called the business-as-usual (BAU) yardstick—that is, what would the GHG emissions look like if the State did nothing at all beyond the policies that

are already required and in place to achieve the 2020 limit, as shown in Table 4.5-3, *2017 Climate Change Scoping Plan Emissions Reductions Gap to Achieve the 2030 GHG Target*. It includes the existing renewables requirements, advanced clean cars, the "10 percent" LCFS, and the SB 375 program for more vibrant communities, among others. However, it does not include a range of new policies or measures that have been developed or put into statute over the past two years. Also shown in the table, the known commitments are expected to result in emissions that are 60 $MMTCO_2e$ above the target in 2030. If the estimated GHG reductions from the known commitments are not realized due to delays in implementation or technology deployment, the post-2020 Cap-and-Trade Program would deliver the additional GHG reductions in the sectors it covers to ensure the 2030 target is achieved.

TABLE 4.5-3 2017 CLIMATE CHANGE SCOPING PLAN EMISSIONS REDUCTIONS GAP TO ACHIEVE THE 2030 GHG TARGET

Modeling Scenario	2030 GHG Emissions $MMTCO_2e$
Reference Scenario (Business-as-Usual)	389
With Known Commitments	320
2030 GHG Target	**260**
Gap to 2030 Target with Known Commitments	**60**

Source: California Air Resources Board, 2017. California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target, https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf, accessed on February 28, 2020.

Table 4.5-4, *2017 Climate Change Scoping Plan Emissions by Sector to Achieve the 2030 GHG Target*, provides GHG emissions by sector, for 1990, and the range of GHG emissions for each sector estimated for 2030, and the percent change compared to 1990 levels.

TABLE 4.5-4 2017 CLIMATE CHANGE SCOPING PLAN EMISSIONS BY SECTOR TO ACHIEVE THE 2030 GHG TARGET

Scoping Plan Sector	1990 $MMTCO_2e$	2030 Proposed Plan Ranges $MMTCO_2e$	% Change from 1990
Agricultural	26	24-25	-8% to-4%
Residential and Commercial	44	38-40	-14% to-9%
Electric Power	108	30-53	-72% to-51%
High GWP	3	8-11	267% to 367%
Industrial	98	83-90	-15% to-8%
Recycling and Waste	7	8-9	14% to 29%
Transportation (including TCU)	152	103-111	-32% to-27%
Net Sink[a]	-7	TBD	TBD
Sub Total	431	294-339	-32% to-21%
Cap-and-Trade Program	NA	24-79	NA
Total	**431**	**260**	**-40%**

TABLE 4.5-4 2017 CLIMATE CHANGE SCOPING PLAN EMISSIONS BY SECTOR TO ACHIEVE THE 2030 GHG TARGET

Scoping Plan Sector	1990 $MMTCO_2e$	2030 Proposed Plan Ranges $MMTCO_2e$	% Change from 1990

Notes: TCU = Transportation, Communications, and Utilities; TBD = To Be Determined.
a. Work is underway through 2017 to estimate the range of potential sequestration benefits from the natural and working lands sector.
Source: California Air Resources Board. 2017, California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf, accessed on February 28, 2020.

- Senate Bill 375. In 2008, SB 375, the Sustainable Communities and Climate Protection Act, was adopted to connect the GHG emissions reductions targets established in the 2008 Scoping Plan for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce VMT and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 18 metropolitan planning organizations (MPOs). The Metropolitan Transportation Commission (MTC) is the MPO for the nine-county San Francisco Bay Area region. Pursuant to the recommendations of the Regional Transportation Advisory Committee (RTAC), CARB adopted per capita reduction targets for each of the MPOs rather than a total magnitude reduction target.
  - 2017 Update to the SB 375 Targets. CARB is required to update the targets for the MPOs every eight years. CARB adopted revised SB 375 targets for the MPOs in March 2018.[27] The updated targets become effective on October 1, 2018. The targets consider the need to further reduce VMT, as identified in the 2017 Scoping Plan Update (for SB 32), while balancing the need for additional and more flexible revenue sources to incentivize positive planning and action toward sustainable communities. Like the 2010 targets, the updated SB 375 targets are in units of percent per capita reduction in GHG emissions from automobiles and light trucks relative to 2005; this excludes reductions anticipated from implementation of state technology and fuels strategies, and any potential future state strategies, such as statewide road user pricing.

    The proposed targets call for greater per-capita GHG emission reductions from SB 375 than are currently in place, which for 2035 translate into proposed targets that either match or exceed the emission reduction levels in the MPOs' currently adopted SCS to achieve the SB 375 targets. For next SCS update, CARB's updated targets for the MTC/ABAG region are a 10 percent per capita GHG reduction in 2020 from 2005 levels (compared to 7 percent under the 2010 target) and a 19 percent per capita GHG reduction in 2035 from 2005 levels (compared to the 2010 target of 15 percent). CARB foresees that the additional GHG emissions reductions in 2035 may be achieved from land use changes, transportation investment, and technology strategies.[28]
- Transportation Sector Regulations – Assembly Bill 1493. Also known as Pavley I, AB 1493 is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty

[27] California Air Resources Board, 2018. Updated Final Staff Report: Proposed Update to the SB 375 Greenhouse Gas Emissions Reduction Targets.

[28] California Air Resources Board, 2018. Updated Final Staff Report: Proposed Update to the SB 375 Greenhouse Gas Emissions Reduction Targets.

vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the USEPA. In 2012, the USEPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model years 2017 through 2025 light-duty vehicles (see also the discussion on the update to the CAFE standards under the heading for Federal Regulations, above). In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of ZE vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025, new automobiles will emit 34 percent less global warming gases and 75 percent less smog-forming emissions.[29]

- Transportation Sector Regulations – Executive Order S-01-07. On January 18, 2007, the state set a new Low Carbon Fuel Standard (LCFS) for transportation fuels sold in California. Executive Order S-01-07 sets a declining standard for GHG emissions measured in CO_2e gram per unit of fuel energy sold in California. The LCFS requires a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least 10 percent by 2020. The LCFS applies to refiners, blenders, producers, and importers of transportation fuels and would use market-based mechanisms to allow these providers to choose how they reduce emissions during the "fuel cycle," using the most economically feasible methods.
- Transportation Sector Regulations – Executive Order B-16-2012. Signed on March 23, 2012, the State required CARB, the California Energy Commission, the Public Utilities Commission, and other relevant agencies to work with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to accommodate ZE vehicles in major metropolitan areas, including infrastructure to support them (e.g., electric vehicle charging stations). The executive order also directed the number of ZE vehicles in California's state vehicle fleet to increase through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles are zero-emission by 2015 and at least 25 percent by 2020. The executive order also stabled a target for the transportation sector of reducing GHG emissions 80 percent below 1990 levels.
- Renewable Portfolio/Carbon Neutrality Regulations – Senate Bills 1078, 107, and X1-2, and Executive Order S-14-08. A major component of California's Renewable Energy Program is the renewable portfolios standard (RPS) established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010. Executive Order S-14-08, signed in November 2008, expanded the RPS to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SB X1-2). Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production will decrease indirect GHG emissions from development projects because electricity production from renewable sources is generally considered carbon neutral.

[29] See also the discussion on the update to the CAFE standards under Federal Laws, above. In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025, new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.

- Renewable Portfolio/Carbon Neutrality Regulations – Senate Bill 350. Signed in September 2015, SB 350 establishes tiered increases the RPS to 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy efficiency savings in electricity and natural gas through energy efficiency and conservation measures.
- Renewable Portfolio/Carbon Neutrality Regulations – Senate Bill 100. On September 10, 2018, Governor Brown signed SB 100, which raises California's RPS requirements to 60 percent by 2030, with interim targets, and 100 percent by 2045. The bill establishes a state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045. Under the bill, the state cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.
- Renewable Portfolio/Carbon Neutrality Regulations – Executive Order B-55-18. Executive Order B-55-18, signed September 10, 2018, sets a goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." Executive Order B-55-18 directs CARB to work with relevant state agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. The goal of carbon neutrality by 2045 is in addition to other statewide goals, meaning not only should emissions be reduced to 80 percent below 1990 levels by 2050, but that, by no later than 2045, the remaining emissions should be offset by equivalent net removals of CO_2e from the atmosphere, including through sequestration in forests, soils, and other natural landscapes.
- Energy Efficiency Regulations – California Building Code: Building Energy Efficiency Standards. Energy conservation standards for new residential and non-residential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 and most recently revised in 2016 (Title 24, Part 6, of the California Code of Regulations). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. The 2019 Building Energy Efficiency Standards, which were adopted on May 9, 2018, went into effect starting January 1, 2020.[30] The 2019 standards move toward cutting energy use in new homes by more than 50 percent and will require installation of solar photovoltaic systems for single-family homes and multifamily buildings of three stories and less. The 2019 standards focus on four key areas: 1) smart residential photovoltaic systems; 2) updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa); 3) residential and nonresidential ventilation requirements; and 4) nonresidential lighting requirements.[31] Under the 2019 standards, nonresidential buildings will be 30 percent more energy efficient compared to the 2016 standards, and single-family homes will be 7 percent more energy

[30] California Energy Commission, 2015. 2016 Building Energy and Efficiency Standards Frequently Asked Questions. https://www.energy.ca.gov/sites/default/files/2020-10/2016%20FAQ%20Building%20Standards_ada.pdf, accessed February 15, 2022.

[31] California Energy Commission, 2018. Energy Commission Adopts Standards Requiring Solar Systems for New Homes, First in Nation. News Release.

efficient. When accounting for the electricity generated by the solar photovoltaic system, single-family homes would use 53 percent less energy compared to homes built to the 2016 standards.[32]

- Energy Efficiency Regulations – California Building Code: CALGreen. On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 California Code of Regulations, Part 11, known as "CALGreen") was adopted as part of the California Building Standards Code. CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.[33] The mandatory provisions of the 2016 CalGreen building standards became effective on January 1, 2017. The CEC adopted the 2019 CALGreen on May 9, 2018, and it becomes effective January 1, 2020.
- Energy Efficiency Regulations – 2006 Appliance Efficiency Regulations. Adopted by the California Energy Commission on October 11, 2006, the 2006 Appliance Efficiency Regulations (Title 20, California Code of Regulations, Sections 1601 through 1608) were approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances. Though these regulations are now often viewed as "business-as-usual," they exceed the standards imposed by all other states and they reduce GHG emissions by reducing energy demand.
- Solid Waste Regulations – Assembly Bill 939. California's Integrated Waste Management Act of 1989 (AB 939, Public Resources Code 40050 *et seq.*) set a requirement for cities and counties throughout the state to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling, and composting. In 2008, the requirements were modified to reflect a per capita requirement rather than tonnage. To help achieve this, the act requires that each city and county prepare and submit a source reduction and recycling element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.
- Solid Waste Regulations – Assembly Bill 341. AB 341 (Chapter 476, Statutes of 2011) increased the statewide goal for waste diversion to 75 percent by 2020 and requires recycling of waste from commercial and multifamily residential land uses. Section 5.408 of CALGreen also requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.
- Solid Waste Regulations – Assembly Bill 1327. The California Solid Waste Reuse and Recycling Access Act (AB 1327, Public Resources Code Sections 42900 *et seq.*) requires areas to be set aside for collecting and loading recyclable materials in development projects. The act required the California Integrated Waste Management Board to develop a model ordinance for adoption by any local agency requiring adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an ordinance of their own.

[32] California Energy Commission, 2018. 2019 Building Energy and Efficiency Standards Frequently Asked Questions. https://www.energy.ca.gov/sites/default/files/2020-06/Title24_2019_Standards_detailed_faq_ada.pdf, accessed February 15, 2022.

[33] The green building standards became mandatory in the 2010 edition of the code.

- Solid Waste Regulations – Assembly Bill 1826. AB 1826, signed on October 2014, requires businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses, including multifamily residential dwellings with five or more units. Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste.
- Water Efficiency Regulations – SBX7-7. The 20x2020 Water Conservation Plan was issued by the Department of Water Resources (DWR) in 2010 pursuant to Senate Bill 7, which was adopted during the 7th Extraordinary Session of 2009 to 2010 and therefore dubbed "SBX7-7." SBX7-7 mandated urban water conservation and authorized the DWR to prepare a plan implementing urban water conservation requirements (20x2020 Water Conservation Plan). In addition, it required agricultural water providers to prepare agricultural water management plans, measure water deliveries to customers, and implement other efficiency measures. SBX7-7 requires urban water providers to adopt a water conservation target of 20 percent reduction in urban per capita water use by 2020 compared to 2005 baseline use.
- Water Efficiency Regulations –Assembly Bill 1881. The Water Conservation in Landscaping Act of 2006 (AB 1881) requires local agencies to adopt the updated DWR model ordinance or equivalent. AB 1881 also requires the Energy Commission, in consultation with the department, to adopt, by regulation, performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.
- Short-Lived Climate Pollutants – Senate Bill 1383. On September 19, 2016, the Governor signed SB 1383 to supplement the GHG reduction strategies in the Scoping Plan to consider short-lived climate pollutants, including black carbon and CH_4. Black carbon is the light-absorbing component of fine particulate matter produced during incomplete combustion of fuels. SB 1383 requires the State board, no later than January 1, 2018, to approve and begin implementing that comprehensive strategy to reduce emissions of short-lived climate pollutants to achieve a reduction in methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030. The bill also establishes targets for reducing organic waste in landfills. On March 14, 2017, CARB adopted the "Final Proposed Short-Lived Climate Pollutant Strategy," which identifies the State's approach to reducing anthropogenic and biogenic sources of short-lived climate pollutants. Anthropogenic sources of black carbon include on- and off-road transportation, residential wood burning, fuel combustion (charbroiling), and industrial processes. According to CARB, ambient levels of black carbon in California are 90 percent lower than in the early 1960s, despite the tripling of diesel fuel use.[34] In-use on-road rules are expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020.

[34] California Air Resources Board, 2017. Short-Lived Climate Pollutant Reduction Strategy. https://www.arb.ca.gov/cc/shortlived/meetings/03142017/final_slcp_report.pdf, accessed November 21, 2019.

Regional Plans and Regulations

Plan Bay Area

MTC and ABAG adopted Plan Bay Area 2050 on October 21, 2021[35]. Plan Bay Area provides transportation and environmental strategies to continue to meet the regional transportation-related GHG reduction goals of SB 375. Under the Plan Bay Area's strategies, just under half of all Bay Area households would live within one half-mile of frequent transit by 2050, with this share increasing to over 70 percent for households with low incomes. Transportation and environmental strategies that support active and shared modes, combined with a transit-supportive land use pattern, are forecasted to lower the share of Bay Area residents that drive to work alone from over 50 percent in 2015 to 36 percent in 2050. GHG emissions from transportation would decrease significantly as a result of these transportation and land use changes, and the Bay Area would meet the state mandate of a 19-percent reduction in per-capita emissions by 2035 — but only if all strategies are implemented.

To achieve MTC's/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 the region 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 project site is within the Dublin Town Center PDA.[36]

Bay Area Clean Air Plan

BAAQMD adopted the 2017 *Clean Air Plan, Spare the Air, Cool the Climate* on April 19, 2017. The 2017 *Clean Air Plan* also lays the groundwork for reducing GHG emissions in the Bay Area to meet the state's 2030 GHG reduction target and 2050 GHG reduction goal. It also includes a vision for the Bay Area in a post-carbon year 2050 that encompasses the following:

- Construct buildings that are energy efficient and powered by renewable energy.
- Walk, bicycle, and use public transit for the majority of trips and use electric-powered autonomous public transit fleets.
- Incubate and produce clean energy technologies.

[35] Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC). 2021, October, *Plan Bay Area 2050.* https://www.planbayarea.org/sites/default/files/documents/Plan_Bay_Area_2050_October_2021.pdf, accessed on February 15, 2022.

[36] Metropolitan Transportation Commission and Association of Bay Area Governments, 2020. Plan Bay Area 2050 Plan. Priority Development Areas (Plan Bay Area 2050) ArcGIS. https://hub.arcgis.com/datasets/4df9cb38d77346a289252ced4ffa0ca0_0/explore?location=37.716872%2C-121.903030%2C12.95, accessed February 15, 2022.

- Live a low-carbon lifestyle by purchasing low-carbon foods and goods in addition to recycling and putting organic waste to productive use.[37]

A comprehensive multipollutant control strategy has been developed to be implemented in the next 3 to 5 years to address public health and climate change and to set a pathway to achieve the 2050 vision. The control strategy includes 85 control measures to reduce emissions of ozone, particulate matter, toxic air contaminants, and GHG from a full range of emission sources. These control measures cover the following sectors: 1) stationary (industrial) sources; 2) transportation; 3) energy; 4) agriculture; 5) natural and working lands; 6) waste management; 7) water; and 8) super-GHG pollutants. Overall, the proposed control strategy is based on the following key priorities:

- Reduce emissions of criteria air pollutants and toxic air contaminants from all key sources.
- Reduce emissions of "super-GHGs" such as methane, black carbon, and fluorinated gases.
- Decrease demand for fossil fuels (gasoline, diesel, and natural gas).
- Increase efficiency of the energy and transportation systems.
- Reduce demand for vehicle travel, and high-carbon goods and services.
- Decarbonize the energy system.
- Make the electricity supply carbon-free.
- Electrify the transportation and building sectors.

Bay Area Commuter Benefits Program

Under Air District Regulation 14, *Model Source Emissions Reduction Measures*, Rule 1, *Bay Area Commuter Benefits Program*, employers with 50 or more full-time employees within the BAAQMD are required to register and offer commuter benefits to employees. In partnership with the BAAQMD and the Metropolitan Transportation Commission (MTC), the rule's purpose is to improve air quality, reduce GHG emissions, and decrease the Bay Area's traffic congestion by encouraging employees to use alternative commute modes, such as transit, vanpool, carpool, bicycling, and walking. The benefits program allows employees to choose from one of four commuter benefit options including a pre-tax benefit, employer-provided subsidy, employer-provided transit, and alternative commute benefit.

Local Regulations

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.[38] 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

[37] Bay Area Air Quality Management District, 2017. Final 2017 *Clean Air Plan*, Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area. http://www.baaqmd.gov/plans-and-climate/air-quality-plans/current-plans, accessed November 21, 2019.

[38] Alameda County, 2014, February. Community Climate Action Plan. http://www.acgov.org/cda/planning/generalplans/documents/110603_Alameda_CCAP_Final.pdf, accessed on February 16, 2022.

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.

The County is currently updating the Climate Action Plan (2022 Plan) to address the new GHG emissions targets for year 2030 under SB 32 and enhance the unincorporated County's resilience to climate change impacts.[39]

4.5.2.3 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.

4.5.3 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant aesthetic impact if it would:

1. Generate greenhouse gas emissions, either directly or indirectly, that may a significant effect on the environment.
2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.
3. In combination with past, present, and reasonably foreseeable projects, result in cumulative impacts with respect to greenhouse gas emissions.

4.5.4 IMPACT DISCUSSION

GHG-1	**The proposed project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant effect on the environment.**

Construction

BAAQMD does not have thresholds of significance for construction related GHG emissions. 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. Therefore, construction emissions would be *less than significant*.

[39] Alameda County. 2022 (accessed). Next Climate Plan. https://www.acgov.org/sustain/what/climate/22plan.htm. (accessed February 17, 2022)

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 two times per year. In addition, the proposed project would generate renewable energy, and thus would provide a carbon neutral energy use that would be utilized to meet the State's Renewable Portfolio Standards. The proposed project would generate 5,819,172 kilowatt hours (Kwh) (5,819 megawatt hours [Mwh]) of carbon neutral electricity per year. Electricity produced by the proposed PV facility would help lower the overall GHG emissions in California by creating a cleaner energy portfolio. Based on PG&E's 2018 carbon intensity of 206 pounds of CO_2e per MWH[40], the project would reduce GHG emission by 544 $MTCO_2e$ annually.[41] Overall, the proposed project would result in a beneficial environmental impact and would further State climate change goals. Thus, the impact is *less than significant*.

Significance without Mitigation: Less than significant.

GHG-2	**The proposed project would not conflict with an applicable plan, policy, or regulation 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.

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 CARB 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.*

The proposed project is not within a priority development area, but would be consistent with the GHG reduction goals of Plan Bay Area 2050. In addition, the project is not a suitable candidate for infill because of the nature of the proposed project 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 regional programs adopted for the purpose of reducing GHG emissions and impacts would be *less than significant*.

[40] Pacific Gas & Electric (PG&E). 2022 (accessed). Fighting Climate Change. https://www.pge.com/en_US/about-pge/environment/what-we-are-doing/fighting-climate-change/fighting-climate-change.page

[41] 206 pounds of CO_2e/MWH x 0.000453592MT/pound x 5,719 MWH = 543.7 $MTCO_2e$

Development of the solar photovoltaic facility would further the goals of the Alameda County General Plan Community 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 by requiring up to two washing phases per year through an electronic cleaning system, 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.*

Overall, the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases, and the impact would be *less than significant*.

Significance Without Mitigation: Less than significant.

GHG-3	**The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in cumulative impacts with respect to GHG emissions.**

Emissions contributing to the accumulation of GHG emissions are by nature regionally and globally cumulative impacts; therefore, the discussion in Chapter 4.5, *Greenhouse Gas Emissions*, of this EIR, evaluates cumulative impacts. As discussed in Chapter 4.5, the proposed project would result in less than significant construction period impacts. Furthermore, the proposed project would result in a long-term GHG emissions benefit that would further State, regional and local 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*.

Significance Without Mitigation: Less than significant.

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4.6 HAZARDS AND HAZARDOUS MATERIALS

This chapter describes the regulatory framework and existing conditions on the project site related to hazardous materials, and the potential impacts of the project with respect to hazards and hazardous materials. This chapter is based on information contained in the Initial Study for the proposed project, which is included as part of the Notice of Preparation in Appendix A, *Notice of Preparation and Scoping Comments*, and is included to address specific community concerns related to solar panel materials.

4.6.1 ENVIRONMENTAL SETTING

4.6.1.1 REGULATORY FRAMEWORK

Federal Regulations

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 United States Environmental Protection Agency (USEPA) are enforced in Alameda County by the California Environmental Protection Agency (CalEPA).

State Regulations

California Environmental Protection Agency

CalEPA was created in 1991 by Executive Order W-5-91. Several State regulatory boards, departments, and offices were placed under CalEPA'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 CalEPA 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 CalEPA, 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.

Governor's Office of Emergency Services

The California Governor's Office of Emergency Services (OES) 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.

Regional Regulations

San Francisco Bay Regional Water Quality Control Board

The Porter-Cologne established the State Water Resource Control Board (SWRCB) and the San Francisco Bay Regional Water Quality Control Board (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 Bay Area Air Quality Management District (BAAQMD) has primary responsibility for control of air pollution from sources other than motor vehicles and consumer products, which are the responsibility of CalEPA and the California Air Resources Board. 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 Regulations

Alameda County General Plan

The Safety Element of the Alameda County General Plan 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.
- 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 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.[1]

4.6.1.2 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

[1] County of Alameda, Alameda County Emergency Operations Plan, December 2012, https://www.acgov.org/ready/documents/EmergencyOperationsPlan.pdf, accessed on September 27, 2021.

evaluation or clean up, from the beginning to the end of the process. California Government Code Section 65962.5 requires CalEPA 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 September 27, 2021, revealed that there are no listings within the project site and no open cases in close proximity to the project site. [2, 3]

4.6.2 STANDARDS OF SIGNIFICANCE

The Initial Study included in Appendix A, *Notice of Preparation and Scoping Comments*, as part of the Notice of Preparation for the proposed project originally scoped out hazards and hazardous materials. Based on comments received on the NOP with particular concern to materials used for solar panels, in particular Teflon-related materials, and potential impacts of these materials associated with stormwater runoff, this chapter addresses in more detail the following criteria:

Would the proposed project:

1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
2. 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?
3. In combination with past, present, and reasonably foreseeable projects, result in cumulative impacts with respect to hazards and hazardous materials?

The following criteria from Appendix G, *Environmental Checklist*, of the CEQA Guidelines remain scoped out of further analysis per the Initial Study. Refer to Appendix A for further information regarding these criteria.

Would the proposed project:

1. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

[2] State Water Resources Control Board, GeoTracker, http://www.geotracker.waterboards.ca.gov, accessed on September 27, 2021.

[3] Department of Toxic Substances Control, EnviroStor, http://www.envirostor.dtsc.ca.gov, accessed on September 27, 2021.

2. 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 it create a significant hazard to the public or the environment?
3. 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 or excessive noise for people residing or working in the project area?
4. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
5. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

4.6.3 IMPACT DISCUSSION

HAZ-1 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.

As discussed in the Initial Study included in Appendix A, *Notice of Preparation and Scoping Comments*, the proposed project would not involve the routine transport of hazardous waste. 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.

With respect to materials used for the solar panels, the proposed project would use silicon PV modules that have an anti-reflective coating.[4] As described in product safety data sheets for silicon PV modules, these modules do not contain hazardous chemicals, and therefore would not result in leaching that would potentially contaminate groundwater.[5] Additionally, anti-soiling coatings applied to the front and back of the PV modules, such as Teflon, would not be used on the silicon PV modules for the proposed project, nor would any other aftermarket coatings be used.[6]

[4] Bilella, Lori. Vice President, Soltage, LLC. Personal communication with Allison Dagg, PlaceWorks, January 6, 2022.
[5] VSUN. VSUN Solar PV Modules Product Safety Datasheet.
[6] Bilella, Lori. Vice President, Soltage, LLC. Personal communication with Allison Dagg, PlaceWorks, January 6, 2022.

The USEPA established a test protocol, Method 1311, known as "toxicity characteristic leaching procedure" (TCLP) to determine whether or not an item may contain components considered toxic above set limits established by RCRA. This test protocol can be applied to the PV modules to ensure that the module would not leach toxins into the environment when it is disposed of. Testing of similar silicon PV solar modules under the TCLP have shown that the modules do not exceed limits of any of the substances tested for under the TCLP. A copy of representative TCLP test results is included in Appendix H, *Hazardous Materials Information*. Additionally, the solar panels would undergo Method 1311 testing when disposed of at the end of the project's lifetime.

Therefore, 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, and impacts would be *less than significant*.

Significance without Mitigation: Less than significant.

HAZ-2 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.

As discussed in impact discussion HAZ-1, 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.

Additionally, as discussed under impact discussion HAZ-1, the proposed project would use silicon PV modules that do not contain hazardous chemicals and would not use Teflon coatings. The panels would use anti-reflective coating, which is considered nontoxic. Disposal of the solar panels after the project's lifetime would be subject to Method 1311 testing to ensure they do not require hazardous materials waste disposal. Testing of similar solar panels as would be used for the proposed project have shown that the modules do not exceed levels of any of the substances analyzed in the TCLP.

Therefore, 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, and impacts would be *less than significant*.

Significance Without Mitigation: Less than significant.

HAZ-3 The proposed project would not, in combination with past, present, and reasonably foreseeable projects, result in cumulative impacts with respect to hazards and hazardous materials.

As discussed above under impact discussions HAZ-1 and HAZ-2, 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, nor through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. As such, the proposed project would not contribute to cumulative impacts in this regard as well.

Because the proposed project would not result in impacts with respect to hazards and hazardous materials, and would not contribute to cumulative impacts, cumulative impacts with respect to hazards and hazardous materials would be *less than significant*.

Significance Without Mitigation: Less than significant.

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4.7 LAND USE AND PLANNING

This chapter describes the regulatory framework and existing conditions on the project site related to land use and planning, and the potential impacts of the project on land use and planning.

4.7.1 ENVIRONMENTAL SETTING

4.7.1.1 REGULATORY FRAMEWORK

This section summarizes key local regulations related to land use and planning concerning the proposed Project. There are no federal or State regulations applicable to land use in the project site vicinity.

Local Regulations

Alameda County General Plan

There are eight elements of the Alameda County General Plan, including: Community Climate Action Plan, Conservation Element, Housing Element, Noise Element, Open Space Element, Recreation Plan, Safety Element, and a Scenic Route Element. Each element includes goals and policies for their respective topics to promote increased sustainability, adequate housing, safety, conservation, scenic quality, and a high quality of life for Alameda County residents.

East County Area Plan

The East County Area Plan (ECAP) includes the following land use and planning policies that are applicable to the proposed project.

- Policy 13: The County shall not provide nor authorize public facilities or other infrastructure in excess of that needed for permissible development consistent with the Initiative. This policy shall not bar 1) new, expanded or replacement infrastructure necessary to create adequate service for the East County, 2) maintenance, repair or improvements of public facilities which do not increase capacity, and 3) infrastructure such as pipelines, canals, and power transmission lines which have no excessive growth-inducing effect on the East County area and have permit conditions to ensure that no service can be provided beyond that consistent with development allowed by the Initiative. “Infrastructure” shall include public facilities, community facilities, and all structures and development necessary to the provision of public services and utilities.
- Policy 89: The County shall retain rangeland in large, contiguous blocks of sufficient size to enable commercially viable grazing.
- 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 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.

Alameda County Municipal Code

Alameda County 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 applicable federal and State regulatory requirements within a framework of comprehensive conservation goals and objectives by implementing standardized mitigation requirements. Although the EACCS does not govern permit issuance, its standardized avoidance, minimization, and mitigation measures for species and natural communities provides more certainty for project proponents and local agencies. This approach is expected to streamline the environmental permitting process, reducing the overall cost of environmental permitting and consolidating mitigation. The EACCS addresses 19 "focal species" comprised of 13 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.[1]

4.7.1.2 EXISTING CONDITIONS

As shown on Figure 3-2, *Local Vicinity*, and Figure 3-3, *Aerial Photograph*, in Chapter 3, *Project Description*, the project site is located in a rural agricultural area near the corner of West Grant Line Road and Great Valley Parkway, adjacent to the unincorporated community of Mountain House in San Joaquin County. The site is bounded by orchard land to the north, vacant agricultural land to the south, and single-family housing to the east across Great Valley Parkway. The Delta Mendota Canal is located west of the

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

project site. Local access to the subject property is provided via Mountain House Parkway and West Grant line Road.

The ECAP designates the subject property as Large Parcel Agriculture. This designation permits agricultural uses, agricultural processing facilities (e.g. wineries, olive presses), limited agricultural support service uses (e.g. animal feed facilities, silos, stables, and feed stores), secondary residential units, visitor-serving commercial facilities (e.g. 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 subject property is classified as an Agricultural (A) zoning district. Per Alameda County Code of Ordinances (ACCO) 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 ACCO Section 17.06.040 include privately owned wind-electric generators. Additionally, as described in Chapter 3, *Project Description*, the Alameda County Planning Commission made findings in 2008[2] that a solar electric facility would not be contrary to the specific intent clauses or performance standards established for the A District and could be permitted under a conditional use permit, and reiterated these findings for similar solar projects in 2011[3] and 2012.[4]

4.7.2 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant land use and planning impact if it would:

1. Physically divide an established community.
2. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.
3. In combination with past, present, and reasonably foreseeable projects, result in significant cumulative impacts with respect to land use and planning.

[2] County of Alameda Planning Commission, June 16, 2008, Meeting Minutes.
[3] County of Alameda East County Board of Zoning Adjustments, December 15, 2011, Resolution No. Z-11-72, PLN2011-00009.
[4] County of Alameda Board of Supervisors, February 28, 2012, Planning Meeting, Summary Action Minutes.

4.7.3 IMPACT DISCUSSION

LU-1 The proposed project would not physically divide an established community.

The proposed project would develop the 23.07-acre site with a solar PV facility. The project site is currently undeveloped. 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.

Significance without Mitigation: Less than significant.

LU-2 The proposed project would not conflict with any land use plan, policy, or regulation 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 in Section 4.7.1.2, Existing Conditions, both the General Plan land use designation and zoning district would permit the development of a renewable energy facility on the subject property, such as a windfarm, and the development of a solar PV facility would be 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.[5] Alameda County made findings in 2008 pursuant to Alameda CGOC Sections 17.54.050 / 17.54.060 (Determination of Use) regarding district classifications of uses not listed within the Ordinance.[6] The Alameda County Planning Commission made findings that a solar electric facility would not be contrary to the specific intent clauses or performance standards established for the A District and could be permitted under a conditional use permit. In addition, in 2012, the Alameda 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.[7] In 2012, the County approved "Cool Earth", a conditional use permit for the Altamont Solar Energy Center project (State Clearinghouse Number 2011082074) which would develop a 140-acre parcel designated Large Parcel Agriculture and zoned as an Agricultural District with solar PV facility, similar to the proposed Project. Accordingly, with approval of two solar PV facilities on parcels designated Large Parcel Agriculture

[5] East County Board of Zoning Adjustments, Greenvolts, Inc., Conditional Use Permit C-8179, Staff Report, June 26, 2008.

[6] County of Alameda Planning Commission, June 16, 2008, Meeting Minutes.

[7] 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 December 27, 2021.

and the County Counsel's determination that solar facilities are consistent with ECAP policies, the County has set a precedent for approval of similar projects.

Furthermore, the County is currently developing solar policies to allow Large Commercial Solar.[8] Although the County has started the process nearly a decade ago, the need to formalize the County's regulations is timely, given the continued interest in developing Large Commercial Solar in rural portions of Alameda County, specifically the East County. As outlined in the draft Statement of Policy Components, the policies would allow for solar/battery projects in the Large Parcel Agriculture area only.[9] The proposed project would comply, as the site is designated as Large Parcel Agriculture. Therefore, with approval of a conditional use permit pursuant to ACMC Section 17.06.040, the proposed project would not conflict with the subject property's land use designation and zoning district and would have a *less than significant* impact.

As discussed in Chapter 4.4, *Biological Resources*, and above in Section 4.7.1.1, Regulatory Framework, the EACCS was developed to address anticipated impacts to biological resources from projected future development in eastern Alameda County through implementation of standardized mitigation measures. With implementation of the mitigation measures discussed in Chapter 4.4, including safer erosion control materials (to prevent animal entrapment), buffer zones, and pre-construction work such as worker training and biological surveying, mitigation measures for the proposed project would be consistent with the goals of the EACCS, and impacts would be *less than significant*.

Significance Without Mitigation: Less than significant.

LU-3	**The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to land use and planning.**

The cumulative setting for land use and planning considers the effects of the proposed project when considered along with other projects in the vicinity of the subject property that are pending. Therefore, based on Table 4-1, *Cumulative Projects within the Vicinity of the Proposed Project*, in Chapter 4.0, *Environmental Analysis*, this analysis of cumulative impacts to land use and planning is based on the proposed project in combination with 19550 W Grant Line Road 0.3 miles away, 22261 South Mountain House Parkway 0.9 miles away, Arnaudo Boulevard at Mountain House II Apartments 1.4 miles away, Telecommunications Tower/21000 South Mountain House Park 1.6 miles away, and 17400 West Bethany Road 2 miles away.

[8] Alameda County Planning Department, March 2022, Large Commercial Solar in Rural Alameda County, https://www.acgov.org/cda/planning/landuseprojects/solarpolicies.htm, accessed April 4, 2022.

[9] Alameda County Planning Department, March 28, 2022, Large Commercial Solar and Battery Storage Statement of Policy Components, https://www.acgov.org/cda/planning/landuseprojects/documents/StatementofPolicyFINAL32822.pdf, accessed April 4, 2022.

Development of the surrounding projects would occur in urbanized areas and are not expected to physically divide an existing community. Projects would be required to comply with relevant land use plans, policies, or regulations.

As discussed above, the proposed project would not conflict with any applicable land use plans, policies, or regulations. In addition, the proposed project would not physically divide an existing community, nor would the proposed project conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

Therefore, the proposed project would not result in a cumulatively considerable contribution to cumulative impacts related to land use changes, and cumulative impacts would be *less than significant.*

Significance Without Mitigation: Less than significant.

4.8 NOISE

This chapter describes the regulatory framework and existing conditions related to noise sources and the overall noise environment in the vicinity of the proposed project, evaluates the potential impacts that could occur as a result of implementation of the proposed project, and details mitigation measures needed to reduce significant impacts, as necessary.

4.8.1 DEFINITIONS AND STANDARDS

Noise is defined as unwanted sound, and, above certain levels, 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 Alameda County have established criteria to protect public health and safety and to prevent disruption of certain human activities. 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 unwanted.
- **Decibel (dB).** A unit-less measure of sound on a logarithmic scale.
- **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.
- Peak Particle Velocity (PPV). The peak rate of speed at which soil particles move (e.g., inches per second) due to ground vibration.
- 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.

4.8.2 ENVIRONMENTAL SETTING

4.8.2.1 REGULATORY FRAMEWORK

This section summarizes key federal, State, and local regulations related to noise concerning the proposed project.

Federal Regulations

Occupational Health and Safety Administration

The federal government regulates occupational noise exposure common in the workplace through the Occupational Health and Safety Administration (OSHA). Such limitations would apply to the operation of construction equipment and could also apply to any proposed industrial land uses. Noise exposure of this type is dependent on work conditions and is addressed through a facility's Health and Safety Plan, as required under OSHA, and is therefore not addressed further in this analysis.

State Regulations

General Plan Guidelines

The State of California, through its General Plan Guidelines, discusses how ambient noise should influence land use and development decisions and includes a table of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable uses at different noise levels expressed in CNEL. A conditionally acceptable designation implies new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements for each land use is made and needed noise insulation features are incorporated in the design. By comparison, a normally acceptable designation indicates that standard construction can occur with no special noise reduction requirements. Local municipalities adopt these compatibility standards as part of their General Plan and modify them as appropriate for their local environmental setting.

Local Regulations

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 East County Area Plan (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.

Alameda County Municipal Code

Section 6.60.040, *Exterior Noise Level Standards*, of the Alameda County Municipal Code provides exterior noise limits for residential land uses. It is not permitted to create any noise that would exceed the applicable exterior noise level when measured at the property line of the receiving land use. Applicable exterior noise limits are shown in Table 4.8-1, *Alameda County Residential Exterior Noise Standards*.

TABLE 4.8-1 ALAMEDA COUNTY RESIDENTIAL EXTERIOR NOISE STANDARDS

Cumulative Minutes in One Hour Period	Noise Level (dBA)	
	7:00 am – 10:00 pm	10:00 pm – 7:00 am
30 Minutes (L_{50})	50	45
15 Minutes (L_{25})	55	50
5 Minutes (L_8)	60	55
1 Minute (L_2)	65	60
Any time (L_{max})	70	65

Source: Alameda County Municipal Code, Section 6.60.040, *Exterior Noise Level Standards.*
Notes: Each of the noise level standards shall be reduced by 5 dBA for simple tone noises, noises consisting primarily of speech or music or for recurring impulsive noises.

Per Section 6.60.070, *Special Provisions or Exceptions*, the noise level standards do not apply to construction noise, provided construction activities take place between 7:00 a.m. and 7:00 p.m. weekdays, and between 8:00 a.m. and 5:00 p.m. on weekends. The Federal Transit Authority (FTA) provides criteria for construction noise. Since the County does not establish quantified construction noise standards, the FTA criterion of 80 dBA $L_{eq(8hr)}$ for residential daytime is used in this analysis.

4.8.2.2 EXISTING CONDITIONS

The subject property is located within a rural, agricultural area with some neighboring low-density rural residential dwellings to the southeast, and a subdivision to the east. These rural residences are the closest sensitive receptors at a distance of approximately 100 feet southeast of the project boundary. Further to the east is a residential subdivision at a distance of approximately 600 feet from the project boundary. The existing subject property's noise environment is primarily dominated by roadway noise from Grant Line Road. The residential dwellings to the east may also contribute to the total noise environment at the subject property (i.e., property maintenance, people talking, minor mechanical equipment, etc.). Given the low-density buildout and rural, agricultural character of the project vicinity, the ambient noise environment is expected to be generally quieter than a typical residential neighborhood.

4.8.3 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant noise impact if it would:

1. Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards.
2. Result in generation of excessive groundborne vibration or groundborne noise levels.
3. For a project located within the vicinity of a private airstrip or 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, expose people residing or working in the project area to excessive noise levels.
4. In combination with past, present, and reasonably foreseeable projects, result in cumulative impacts with respect to noise.

4.8.4 IMPACT DISCUSSION

NOI-1	**The proposed project would not result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards.**

Construction

Construction of the proposed project is expected to last approximately two months beginning in 2022. 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 subject property 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

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 up 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 dBA 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 project 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.[1] Noise-generating equipment items associated with the proposed project's construction are expected to be at least 400 feet from the nearest

[1] Federal Highway Administration (FHWA). 2006. *Roadway Construction Noise Model (RCNM)*.

sensitive receptors to the southeast. Table 4.8-2, *Estimate Construction Noise Levels by Phase*, presents potential construction noise associated with the proposed project at varying distances, starting with the standard reference distance of 50 feet, as well as the closest distances to nearby sensitive receptors from the limit of work edge. It should be noted that these estimates are conservative since they assume that all applicable pieces of construction equipment would operate at the limit of work edge when, as discussed above, construction equipment would move around the project site.

TABLE 4.8-2 ESTIMATED CONSTRUCTION NOISE LEVELS BY PHASE

	Projected Construction Noise Levels at Receiver Distances, dBA L_{eq}		
Construction Phase	At 50 Feet	At 400 Feet (Residences to Southeast)	At 725 Feet (Residences to East)
Site Preparation	80	62	57
Utility Trenching	82	64	59
Installation of Solar Equipment	82	64	59

Source: Calculations performed with the FHWA's RCNM software and included in Appendix F, *Noise Data*, of this Draft EIR.

Construction activities would increase noise levels at and near the proposed area of improvements. Based on the provided construction equipment information, the loudest construction phases are expected to be the utility trenching and installation of solar equipment. Since proposed construction activities are expected to be at least 400 feet from the nearest sensitive receptors to the southeast, construction noise levels associated with the proposed project are expected to be up to 64 dBA L_{eq}, which would not exceed the threshold of 80 dBA L_{eq}. Therefore, this impact would be *less than significant*.

Operational

The proposed solar PV facility would include various equipment including panels, one inverter, and one transformer. The only equipment expected to generate notable levels of noise would be the inverter and, to a lesser extent, the transformer.[2] The sound level of a PowerOne Aurora Trio 20.0, a commonly used commercial inverter, is approximately 71 dBA at 3.28 feet (1 meter).[3] 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 inverter would be placed on an equipment pad approximately 775 feet from the nearest sensitive receptors to the southeast. At this distance, the sound level of a single commonly used commercial inverter would be reduced to approximately 24 dBA, which is well below the ACMC noise limit of 50 dBA L_{50} for residential receivers. Further, as the solar equipment would not be operating after sunset, the nearest sensitive receptors would not be exposed to project-related mechanical equipment noise at night. Thus, project-related, equipment-generated noise would be *less than significant*.

[2] From previous project work on a similar PV project, representative transformer portions had measured noise levels that were from 5 to 10 dBA lower than the inverter (City of Industry 2 MW Carport Photovoltaic Solar and Electric Charging Project, PlaceWorks (formerly The Planning Center | DC&E), 2012).

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

Project operation is anticipated to generate occasional trips by project maintenance workers to perform routine maintenance and repairs. The occasional and sporadic maintenance activities would not generate substantial noise levels at off-site receptors. While maintenance employees would travel to the site periodically, their total trips, combined with the existing traffic flows, would result in negligible increases in roadway noise. Thus, maintenance activity- and traffic-generated noise during project operations would be *less than significant*.

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

Significance without Mitigation: Less than significant.

NOI-2 Implementation of the proposed project would not result in generation of excessive groundborne vibration or groundborne noise levels.

The County of Alameda has not established quantified limits for vibration. The FTA provides criteria for acceptable levels of groundborne vibration for various types of buildings. These criteria are shown in Table 4.8-3, *Groundborne Vibration Criteria*. For the purposes of this analysis, the FTA criterion of 0.2 in/sec PPV is applied to nearby sensitive receptors to determine impact significance.

TABLE 4.8-3 GROUNDBORNE VIBRATION CRITERIA

	Building Category	PPV (in/sec)
I.	Reinforced concrete, steel, or timber (no plaster)	0.5
II.	Engineered concrete and masonry (no plaster)	0.3
III.	Nonengineered timber and masonry buildings	0.2
IV.	Buildings extremely susceptible to vibration damage	0.12

Source: Federal Transit Administration, 2018. *Transit Noise and Vibration Impact Assessment Manual*.
PPV = peak particle velocity

Construction can generate varying degrees of ground vibration, depending on the construction procedures and equipment. Operation of construction equipment generates vibrations that spread through the ground and diminish with distance from the source. The effect on buildings in the vicinity of the construction site varies depending on soil type, ground strata, and receptor-building construction. The effects from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight structural damage at the highest levels. Vibration from construction activities rarely reaches the levels that can damage structures.

Table 4.8-4, *Vibration Levels for Typical Construction Equipment*, summarizes vibration levels for typical construction equipment at a reference distance of 25 feet. Typical construction equipment can generate vibration levels ranging up to 0.21 in/sec PPV at 25 feet. Vibration levels at a distance greater than 25 feet would attenuate to 0.2 in/sec PPV or less. The nearest structure to proposed construction activities is the residence approximately 525 feet or more southeast of the limit of work. At this distance, construction vibration would attenuate to well below the 0.2 in/sec PPV threshold. Therefore, construction vibration would be *less than significant*.

TABLE 4.8-4 VIBRATION LEVELS FOR TYPICAL CONSTRUCTION EQUIPMENT

Equipment	PPV (in/sec) at 25 feet
Vibratory Roller	0.21
Large Bulldozer	0.089
Loaded Trucks	0.079
Jackhammer	0.035
Small Bulldozer	0.003

Source: Federal Transit Administration, 2018. *Transit Noise and Vibration Impact Assessment Manual*.

Significance Without Mitigation: Less than significant.

NOI-3 Implementation of the proposed project would not expose people working within two miles of a private airstrip or airport to excessive noise levels.

The closest airstrip or airport to the project site is the Tracy Municipal Airport, which is located over 7 miles to the southeast. While air traffic may at times be audible at the project site, implementation of the proposed project would not expose people to excessive aircraft noise levels. Therefore, there would be *no impact*.

Significance Without Mitigation: No impact.

NOI-4 The proposed project, in combination with past, present, and reasonably foreseeable projects, would not result in less-than-significant cumulative impacts with respect to noise.

There are several cumulative projects near the project site (see Chapter 4.0, *Environmental Analysis*). The closest cumulative project is a residential subdivision project located at 19550 W. Grant Line Road approximately 0.3 miles from the project site. At this distance (i.e., greater than 1,000 feet), cumulative construction noise impacts would not be substantially greater than those described in Impact NOI-1, which were determined to be less than significant. Operational equipment from the residential project would not contribute substantially to the existing noise environment at the sensitive receptors closest to the project site. Therefore, the proposed project would not contribute to a significant cumulative noise impact, resulting in a *less than significant* impact.

Significance Without Mitigation: Less than significant.

4.9 TRIBAL CULTURAL RESOURCES

This chapter describes the regulatory framework and existing conditions related to tribal cultural resources, evaluates the potential impacts that could occur as a result of implementation of the proposed project, and details mitigation measures needed to reduce significant impacts, as necessary.

4.9.1 ENVIRONMENTAL SETTING

4.9.1.1 REGULATORY FRAMEWORK

This section summarizes key federal, State, and local regulations related to tribal cultural resources (TCR) concerning the proposed project.

Federal Regulations

National Historic Preservation Act

The National Register of Historic Places (National Register), established by the National Historic Preservation Act of 1966, as amended, recognizes properties that are significant at local, State, and national levels. Designated historical resources include districts, sites, buildings, structures, and objects.

For a property to be eligible for listing in the National Register, it must be significant in American history, architecture, archaeology, engineering, or culture, and must retain integrity in terms of location, design, setting, materials, workmanship, feeling, and association.[1] Resources less than 50 years in age, unless of exceptional importance, are not eligible for the National Register. Though a listing in the National Register does not prohibit demolition or alteration of a property, the California Environmental Quality Act (CEQA) requires the evaluation of project effects on properties that are listed in the California Register of Historic Resources, which includes properties listed in the National Register.[2,3]

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.

[1] United States Department of the Interior, 1997, National Register Bulletin, How to Apply the National Register Criteria for Evaluation. https://www.nps.gov/subjects/nationalregister/upload/NRB-15_web508.pdf, accessed April 8, 2021.

[2] CEQA Guidelines Section 15064.5, Determining the Significance of Impacts to Archaeological and Historical Resources.

[3] Office of Historic Preservation, 2002, California Office of Historic Preservation Technical Assistance Series #3. https://ohp.parks.ca.gov/pages/1069/files/03%20cal_%20reg_%20q_and_a.pdf, accessed April 8, 2021.

State Regulations

California Health and Safety Code

California Health and Safety Code Section 7052 states that it is a felony to disturb Native American cemeteries. Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the County Coroner can determine whether the remains are those of a Native American. Section 7050.5(b) outlines the procedures to follow should human remains be inadvertently discovered in any location other than a dedicated cemetery. The section also states that the County Coroner, upon recognizing the remains as being of Native American origin, is responsible to contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC has various powers and duties to provide for the ultimate disposition of any Native American remains, as does the assigned Most Likely Descendant.

Senate Bill 18

Senate Bill 18 (SB 18), signed into law in September 2004, requires that local governments consult with California Native American tribes in order to give tribes an opportunity to participate in local land use decisions at the early planning stage for the protection or mitigation of impacts to tribal cultural places. The Governor's Office of Planning and Research is required to include in the General Plan Guidelines advice for how to conduct these consultations, which apply to adoption and amendment of general plans and specific plans, as defined in California Government Code Sections 65300 and 65450.

Assembly Bill 52

Assembly Bill (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 TCRs 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 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 Regulations

East County Area Plan

The East County Area Plan (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 [sic] appropriate mitigation measures that offset the impacts.

Alameda County Municipal Code

The overall purpose to Alameda County Municipal Code (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 subject property is located within the *Historical and Cultural Resource Survey, East Alameda County*, prepared by Michael R. Corbett in June 2005.[4]

4.9.1.2 EXISTING CONDITIONS

The project site is located in an area that is ethnographically attributed to the Northern Valley Yokuts.[5] The Northern Valley Yokuts tribes closely resembled the habits of the Southern Valley Yokuts in their way of life, but the Northern Valley Yokut people had greater access to and dependence of salmon and acorns than their southern neighbors. For the tribes that were closer to major rivers, fishing and fowling provided fresh food. They also harvested wild plants, such as acorns, tule roots, and seeds. The Northern Valley Yokuts also differed from the Southern Valley Yokuts in their religious practices, which was likely a result of north and Central Valley influences.

Typically, Northern Valley Yokuts dwellings consisted of small, lightly build structures covered with tool stalks that were woven into mats. The tribes also constructed sweathouses and ceremonial assembly chambers. Political organization consisted of tribes guided by headman; most members of the tribes congregated in one settlement, where the headman lived, with the main settlements positioned on top of low mounds on or near the banks of large waterways. Establishing settlements on mounds was likely done to protect people, homes, and possessions during spring floods. Sedentary life was likely influenced by the prevalence of natural resources, the same occupation sites were inhabited by multiple generations.

[4] Alameda County Municipal Code, Title 17 (Zoning), Chapter 17.62 (Historic Preservation Ordinance).
[5] LSA Associates Inc., September 2021. *Phase I Cultural Resources Assessment, Alameda Grant Line Solar 1 Project.*

The project site is not included in the California Register and is not included as a historic resource pursuant to the *Alameda County Register*.[6] A sacred lands file search conducted by the NAHC for the project site did not identify any sacred lands.[7] The NAHC identified 16 local Native American representatives from 10 different tribes as potentially having local knowledge. The tribes include:

- Amah Mutsun Tribal Band of Mission San Juan Bautista
- Costanoan Rumsen Carmel Tribe
- Indian Canyon Mutsun Band of Costanoan
- Muwekma Ohlone Indian Tribe of the SF Bay Area
- North Valley Yokuts Tribe
- The Ohlone Indian Tribe
- Tule River Indian Tribe
- Wilton Rancheria
- Wuksache Indian Tribe/Eshom Valley Band
- The Confederated Villages of Lisjan

The County notified all the tribal representatives about the proposed project in 2021 and asked for information about potential resources at or near the project site. The Confederated Villages of Lisjan was the only response received, in November and December 2021, but no consultation was requested. A copy of this correspondence is included in Appendix G, *Tribal Consultation Correspondence*.

4.9.2 STANDARDS OF SIGNIFICANCE

The proposed project would result in a significant tribal cultural resources impact if it would:

1. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Sections, 21074, 5020.1(k), or 5024.1.
2. In combination with past, present, and reasonably foreseeable projects, result in significant cumulative impacts with respect to cultural resources and tribal cultural resources.

4.9.3 IMPACT DISCUSSION

TCR-1 The proposed project would have potential to cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Sections, 21074, 5020.1(k), or 5024.1.

The proposed project would result in a substantial adverse change in the significance of a tribal cultural resources if it altered resources listed or eligible for listing in the California Register of Historical Resources or a local register of historical resources or a resource determined to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. As discussed in the Initial Study, no

[6] Alameda County Landmarks & Contributing Buildings, Identified in 2005-2008 Comprehensive Survey, https://www.acgov.org/cda/planning/landuseprojects/documents/phrcList.pdf, accessed on December 27, 2021.

[7] LSA Associates, Inc., September 2021. *Phase I Cultural Resources Assessment, Alameda Grant Line Solar I Project*.

sensitive resources eligible for listing in the California Register of Historical Resources, or in a local register of historical resources have been recorded within the project site or within a half-mile radius.

The County began the consultation process under AB 52 by contacting the Native American Heritage Commission (NAHC) to inform them about the proposed project. In response, the NAHC completed a record search of Sacred Lands File (SLF) for the project location and the results were negative. Pursuant to AB 52, the NAHC provided a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the proposed project. With the list of tribes, the County contacted local tribal representatives by letter, inviting them to consult on the proposed project. One tribe, the Confederated Villages of Lisjan Tribe, indicated that they had no further information to supply about the proposed site for this plan. A copy of this correspondence is included in Appendix G, *Tribal Consultation Correspondence*. As of publication of this Draft EIR, no requests for consultation have been received from the tribes.

In addition to the contact letters and the negative NAHC record search, the federal, State, and County historic registers do not indicate any 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 designated on the project site. Furthermore, the project site is not located within a historic preservation district, nor is it identified as a historic landmark.

However, it remains possible that a currently unknown tribal cultural resource could be encountered during construction activities. Without mitigation measures, unearthing tribal cultural resources could result in a significant impact. In the unlikely event that tribal cultural resources are unearthed on the project site, however, Mitigation Measures CULT (b) and CULT (c) provided in the Initial Study included in Appendix A, *Notice of Preparation and Scoping Comments*, would apply, which include procedures to follow.

Significance without Mitigation: Significant.

Impact TCR-1.1: Implementation of the proposed project may cause a substantial adverse change in the significance of a TCR, as defined in Public Resources Code Section 21074.

Mitigation Measure TCR-1.1: Implement 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 County and the archaeologist shall 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 subject property outside the 50-foot area while mitigation for historical resources or unique archaeological resources is being carried out.

Significance With Mitigation: Less than significant.

Impact TCR-1.2: Implementation of the proposed project could cause a substantial adverse change in the significance of a tribal cultural resource pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1.

Mitigation Measure TCR -1.2: Implement Mitigation Measure CULT (c).

Mitigation Measure CULT (c): 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.

Significance with Mitigation: Less than significant.

TCR-2 The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in less-than-significant cumulative impacts with respect to cultural resources.

Cumulative impacts to TCRs occur when a series of actions leads to adverse effects on local Native American tribes or tribal lands. No TCRs have been identified on the project site or within the immediate vicinity. Further, in association with CEQA review, future AB 52 consultations with Native American tribes in order to identify TCRs would be required for projects that have the potential to cause significant impacts to tribal cultural resources.

As discussed in the Cultural Resources section of the Initial Study that was included in the Notice of Preparation for the proposed project (see Appendix A, *Notice of Preparation and Scoping Comments*), development of the proposed project would comply with federal and State laws protecting cultural

resources. Implementation of Mitigation Measures TCR-1.1 and TCR-1.2 identified above would ensure that archaeological, cultural resources, and TCRs if discovered on the project site, are protected, and that discovered human remains, including those associated with Native American, tribes are handled appropriately. Thus, given that the proposed project would have a *less than significant* impact on TCRs with mitigation, the proposed project's impacts to TCRs would not be considered cumulatively considerable. Therefore, cumulative impacts to TCRs would be *less than significant*.

Significance Without Mitigation: Less than significant.

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5. Alternatives

5.1 INTRODUCTION

The following evaluation was prepared to evaluate whether there may be feasible alternatives to the proposed project that could avoid or substantially lessen any of the significant effects of the proposed project. Section 15126.6(a), Consideration and Discussion of Alternatives to the Project, of the California Environmental Quality Act (CEQA) Guidelines states that:

> *An EIR shall describe a range of reasonable alternatives to the project, or the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason.*

The following discussion is intended to inform the public and decision makers of a reasonable range of feasible alternatives to the proposed project that would avoid or substantially lessen any significant effect of the proposed project. This chapter describes the purpose of the alternatives discussion; provides a summary of the reasonable range of alternatives, including a summary of potentially significant impacts and the relationship of each alternative to the project objectives; and identifies the environmentally superior alternative.

5.2 POTENTIALLY SIGNIFICANT IMPACTS

All of the potential environmental impacts associated with development of the proposed project were found to be *no impact*, *less than significant without mitigation*, or *less than significant with mitigation*. No *significant and unavoidable* impacts were identified as a result of construction and operation of the proposed project. A list of the potential impacts is provided in Table 1-1 in Chapter 1, *Executive Summary*, of this Draft EIR. The choice of alternatives to the proposed project for analysis in this Draft EIR focused on those alternatives that could avoid or substantially lessen the impacts found to be *potentially significant*, but *less than significant with mitigation measures*, as listed in Table 1-1 or in the Initial Study in Appendix A.

The significant-but-mitigable impacts of the proposed project include the following:

- Air Quality: construction impacts from construction emissions of fine particulate matter (PM_{10} and $PM_{2.5}$).
- Biological Resources: construction and operational impacts to California tiger salamander, California red-legged frog, San Joaquin coachwhip, glossy snake, Coast horned lizard, burrowing owl, Swainson's hawk, American badger, and monarch butterfly.
- Cultural and Tribal Cultural Resources: construction impacts to potential, unknown subsurface cultural and tribal cultural resources.

5.3 PROJECT OBJECTIVES

As stated above, the alternatives to a project must be able to feasibly attain most of the basic objectives of the proposed project. The objectives identified by the County for the proposed project are included in Chapter 3, *Project Description*, and are repeated as follows:

- Assist California in meeting renewable energy generation goals under Senate Bill (SB) 100. SB 100 requires 100 percent of all electric retail sales to end-use customers to come from renewable energy and zero-carbon resources by 2045;
- Create construction jobs and permanent jobs in the San Francisco Bay Area;
- Complete construction and achieve commercial operation in accordance with the schedule under the PPA;
- Locate solar power plant facilities as near as possible to electrical load to avoid capacity constraints of the transmission gird by utilizing distribution grid, and to provide system reliability;
- Utilize existing utility facilities, roads, and other infrastructure to the extent feasible to minimize impacts;
- Contribute to Alameda County climate change and renewable energy goals by generating fossil-free clean power for use by Alameda County and Bay Area residents;
- Site the project in an area with excellent solar energy resource capabilities, in order to maximize productivity from the photovoltaic panels;
- Minimize environmental impacts associated with solar development, construction, and operation, through low-impact design, short construction timeline with minimal ground disturbance, low impervious surfaces, the continued use of existing habitat by present wildlife, and ease of decommissioning at the end of the project's life in order to restore the site to its original conditions;
- Achieve economies of scale to provide approximately 2 MWs of affordable, local, wholesale solar electricity to Bay Area residents; and
- Help Bay Area Load Serving Entities in fulfilling their local renewable energy procurement goals.

5.4 SELECTION OF A REASONABLE RANGE OF ALTERNATIVES

Section 15126.6(c) of the State CEQA Guidelines states:

> *The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. The EIR should briefly describe the rationale for selecting the alternatives to be discussed. The EIR should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. Additional information explaining the choice of alternatives may be included in the administrative record. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts.*

According to the State CEQA Guidelines Section 15364, feasibility is defined as:

> *[The capability] of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.*

5.4.1 ALTERNATIVES ANALYSIS

In addition to the No Project Alternative, this EIR discusses one project alternative and compares it to the proposed project. As previously stated, alternatives were selected because of their potential to reduce the significant-but-mitigable impacts of the proposed project. The two alternatives are:

- No Project Alternative. Under the No Project Alternative, the proposed project would not be constructed, and the subject property would remain unchanged.
- Reduced Size Alternative. Under the Reduced Size Alternative, the subject property would be developed with a photovoltaic (PV) solar farm, with approximately 200 PV solar arrays, or roughly one-half the size of the proposed project, in generally the same configuration as shown on Figure 3-4, *Groundmount Array Layout*, in Chapter 3, *Project Description*, but with the northern fence line moved further south to accommodate less space needed for the PV solar arrays. All the components of the proposed project would be constructed, at the appropriate scale to support operation of the PV solar arrays, including the gravel access roads, concrete pads for the infrastructure, inverter, transformer, and fencing. Access to the parcel would continue to be provided via Grant Line Road. With the number of PV arrays reduced by one-half, the overall demand for water for cleaning the arrays would be reduced, as well as the amount of land and habitat impacted by the proposed project.

Table 5-1 compares the impact of each alternative to impacts of the project.

5.4.2 ASSUMPTIONS AND METHODOLOGY

The alternatives analysis compares the impacts of the alternatives to the proposed project. The No Project Alternative assumes no change on the existing parcel and no new development. The overall extent of the

development on the subject property for the other alternative is similar to the proposed project, but the PV solar array would be approximately one-half the size of the proposed project. As described in Chapters Chapter 4.3, *Air Quality*, Chapter 4.4, *Biological Resources*, and Chapter 4.9, *Tribal Cultural Resources*, mitigation measures would be required to reduce construction and operations related impacts. Additionally, as described in the Initial Study for the proposed project included as part of the Notice of Preparation in Appendix A of this Draft EIR, mitigation measures would also be required to reduce cultural resources and paleontological related impacts to less than significant. This alternatives analysis assumes that all applicable regulations and all mitigation measures identified in this EIR for the proposed project would be implemented for the Reduced Size Alternative.

The following analysis compares the potentially significant environmental impacts of the two alternatives with the project-related impacts for each of the environmental topics analyzed in detail in Chapters 4.1 through 4.9 of this Draft EIR. The impacts of each alternative are classified as greater, reduced, or similar to the level of impacts associated with the proposed project. Table 5-1 summarizes the impacts of each of the alternatives compared to the proposed project.

TABLE 5-1 COMPARISON OF PROJECT ALTERNATIVES

Topic	No Project Alternative	Reduced Size Alternative
Aesthetics	–	=
Agriculture and Forestry Resources	=	=
Air Quality	–	=
Biological Resources	–	–
Cultural Resources	–	–
Geology and Soils	–	–
Greenhouse Gas Emissions	–	=
Hazards and Hazardous Materials	–	=
Land Use and Planning	=	=
Noise	–	=
Tribal Cultural Resources	–	–

Notes:
– Reduced impact in comparison to the proposed project.
= Similar impact in comparison to the proposed project.
+ Greater impact in comparison to the proposed project.

5.5 ALTERNATIVE A: NO PROJECT

5.5.1 DESCRIPTION

Under the No Project Alternative, the proposed project would not be constructed, and the project site would remain as is.

5.5.2 IMPACT DISCUSSION

5.5.2.1 AESTHETICS

The proposed project would not result in any significant aesthetic impacts. There are no scenic vistas visible from the parcel, and the project site is not located near a designated scenic corridor. Additionally, the proposed project does not include any lighting; therefore, there would be no new source of substantial light or glare. Implementation of the proposed project could potentially alter the existing visual character or quality of the parcel and its surroundings, however, based on the project site location and existing conditions, it would not substantially degrade existing visual character.

Under the No Project Alternative, the existing visual character and quality of the parcel and its surroundings would not be altered.

Overall, the No Project Alternative would maintain the existing agricultural character of the parcel. Therefore, the No Project Alternative would *slightly lessen* the aesthetic change when compared to the proposed project.

5.5.2.2 AGRICULTURE AND FORESTRY RESOURCES

The proposed project would not result in any significant impact to agricultural or forestry resources. The undeveloped parcel is not classified as Prime Farmland, Unique Farmland, or Farmland of Statewide Significance, nor is it subject to a Williamson Act contract. 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.

Overall, neither the No Project Alternative nor the proposed project would result in a significant impact to agriculture or forestry resources. Therefore, the No Project Alternative is considered *similar* to the proposed project.

5.5.2.3 AIR QUALITY

With mitigation, the proposed project would not result in significant air quality impacts. The proposed project would not conflict with or obstruct implementation of the BAAQMD *2017 Clean Air Plan*. Construction of the proposed project would result in short-term air pollutant emissions that could violate air quality standards and expose off-site sensitive receptors to substantial concentrations of air pollutant emissions, which would be less than significant with mitigation measures. Once operational, the proposed project would generate occasional vehicle trips by maintenance workers to perform routine maintenance and repairs, and a water truck that would make deliveries to the project site approximately 1-2 times per year. These trips are anticipated to be sporadic and nominal and would have a less than significant impact.

Like the proposed project, the No Project Alternative would not exceed the Air District's emissions thresholds and would therefore not conflict with the *2017 Clean Air Plan*.

Unlike the proposed project, the No Project Alternative would not involve construction on-site and would therefore not have the potential to expose any sensitive receptors to construction-related air pollutants. The No Project Alternative would avoid the project's significant-but-mitigable impact associated with construction-related emissions, particularly fugitive dust.

The No Project Alternative would not generate any trips by maintenance workers or the projected annual water delivery trips. With no new vehicle trips under the No Project Alternative there would be no increase in vehicle air emissions, resulting in no impacts compared to the proposed project.

Neither the proposed project nor the No Project Alternative would involve the types of land uses that could create objectionable odor impacts.

Overall, air quality impacts would be *lessened* under the No Project Alternative compared to the proposed project.

5.5.2.4 BIOLOGICAL RESOURCES

With mitigation, the proposed project will not result in significant impacts to biological resources on-site. As discussed in Chapter 4.4, *Biological Resources*, of this Draft EIR, 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. Given the known occurrences within the vicinity of the project site, construction of the proposed project could potentially, kill, injure, or alter the behavior of nine special-status wildlife species on the site, resulting in a significant impact. However, with mitigation, the impact that project construction may have on special status species would be reduced to less than significant.

The No Project Alternative would not involve any construction activities that could impact biological resources. This alternative would not involve construction that would alter natural habitats or breeding sites and would not impact special-status species that happen to be present during construction. Therefore, the No Project Alternative would avoid the project's significant-but-mitigable impact to special-status species.

Neither the proposed project nor the No Project Alternative would have the potential to affect riparian habitats, sensitive natural communities, wetlands, wildlife corridors, wildlife nursery sites, or habitat conservation plans.

Overall, the No Project Alternative would *lessen* biological resources impacts compared to the proposed project.

5.5.2.5 CULTURAL RESOURCES

The project site is not listed in a register of historical resources. The proposed project would involve ground disturbance and could damage archaeological resources and/or human remains; such impacts would be less than significant with mitigation.

Unlike the proposed project, the No Project Alternative would not involve construction and therefore this alternative would not include ground disturbance that could impact archaeological resources or human remains, that may be buried in site soils.

Overall, the No Project Alternative would *lessen* cultural resources impacts compared to the proposed project.

5.5.2.6 GEOLOGY AND SOILS

The project site is not located in an earthquake fault zone but is expected to experience "strong" shaking due to location in a seismically active region. Topography of the site is generally flat and would not result in an erosion or landslide hazard. The project site is located within an area susceptible to very low category of liquefaction. Furthermore, sites with similar topography in the immediate vicinity of the project site have not experienced landslides, lateral spreading, subsidence, liquefaction, or collapse; therefore, the proposed project is unlikely to result in significant impacts related to unstable geologic units or soil. The proposed project would be required to implement best management practices and measures to avoid significant hazards from site soils and geologic conditions in compliance with existing local, State, and federal regulatory requirements, including, but not limited to, the East County Area Plan, the Alameda County Municipal Code, and the California Building Code. Therefore, there would be no impact with respect to geological-related hazards. While no paleontological resources have been identified on the project site, because the proposed project requires excavation where no such excavation has previously occurred, fossils of potential scientific significance that have not been recorded could be encountered. Ground-disturbing construction associated with development under the proposed project could cause damage to, or destruction of, paleontological resources, but such impacts would be less than significant with mitigation.

Like the proposed project, there would be no impacts related to geological-related hazards under the No Project Alternative.

The No Project Alternative would not involve ground-disturbing construction that could cause damage to or destruction of paleontological resources. Therefore, the No Project Alternative would avoid the project's significant-but-mitigable impact to paleontological resources.

Neither the proposed project nor the No Project Alternative would require the construction or use of septic tanks or alternative wastewater disposal system.

Overall, the No Project Alternative would *lessen* geology and soil impacts compared to the proposed project.

5.5.2.7 GREENHOUSE GAS EMISSIONS

The proposed project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant effect on the environment, nor would it conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing greenhouse gas emissions. It would produce construction related greenhouse gas emissions, however as explained in Chapter 4.5, *Greenhouse Gas Emissions*,

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.

Similar to the proposed project, the No Project Alternative would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant effect on the environment, nor would it conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing greenhouse gas emissions. However, because the No Project Alternative would not include construction and therefore not produce any construction related emissions, the No Project Alternative would *slightly lessen* greenhouse gas emissions impacts compared to the proposed project.

5.5.2.8 HAZARDS AND HAZARDOUS MATERIALS

Construction of the proposed project could include potential spills associated with the use of fuels and lubricants in construction equipment and operation could involve the use of common cleaning substances and PV facility maintenance products. However, these potentially hazardous substances would not occur in sufficient quantities to pose a significant hazard to public health and safety and the environment. The proposed project would be compliant with applicable laws, regulations, and conditions of approval to minimize hazards associated with the routine transport, use, or disposal of hazardous materials to the maximum extent possible. The proposed project would use silicon PV modules that do not contain hazardous chemicals, with nontoxic anti-reflective coating. The project site does not contain any known hazardous materials spills or storage sites and the Phase I Environmental Site Assessment conducted for the proposed project found no recognized environmental conditions.

Neither the proposed project nor the No Project Alternative would be within 0.25 miles of a school or within 2 miles of a public airport. Both the proposed and alternative projects would not interfere with an adopted emergency response or evacuation plan or expose people or structures to significant risk of loss, injury, or death involving wildland fires.

While potentially hazardous substances such as commonplace cleaning and maintenance products would not result in a significant impact under the proposed project related to hazardous materials, unlike the proposed project, the No Project Alternative would not involve use of the materials. Therefore, the No Project Alternative would slightly *lessen* hazards and hazardous materials impacts compared to the proposed project.

5.5.2.9 LAND USE AND PLANNING

The proposed project would not divide an established community or conflict with land use policies or a habitat conservation plan, and land use and planning impacts of the proposed project would be less than significant.

Like the proposed project, the No Project Alternative would not divide an established community, conflict with land use policies, or conflict with a habitat conservation plan.

Overall, the No Project Alternative would cause *similar* land use and planning impacts compared to the proposed project.

5.5.2.10 NOISE

Construction of the proposed project would temporarily increase noise levels at and near the project site and operational equipment would generate noise. However, it would not result in a temporary or permanent increase in ambient noise levels in excess of standards established in applicable local, State, or federal standards. Additionally, the proposed project would not generate excessive groundborne vibration or groundborne noise levels. The project site is not located within two miles of an airport and would not expose people to excessive noise levels.

Unlike the proposed project, the No Project Alternative would not generate construction or operational noise. Therefore, the No Project Alternative, like the proposed project, would not result in a temporary or permanent increase in ambient noise levels in excess of standards established in applicable local, State, or federal standards, nor would it generate excessive groundborne vibration or groundborne noise levels.

Overall, neither the No Project Alternative nor the proposed project would result in a significant impact to noise. However, because there would be some noise generation from implementation of the proposed project, and the project site is currently vacant and therefore does not have uses generating noise, impacts from noise under the No Project Alternative is considered *slightly lessened* compared to the proposed project.

5.5.2.11 TRIBAL CULTURAL RESOURCES

The project site is not listed in a register of historical resources. The proposed project would involve ground disturbance and could potentially damage unknown tribal cultural resources; such impacts would be less than significant with mitigation.

Unlike the proposed project, the No Project Alternative would not involve construction and therefore this alternative would not include ground disturbance that could impact tribal cultural resources, that may be buried in site soils.

Overall, the No Project Alternative would *lessen* tribal cultural resources impacts compared to the proposed project.

5.5.3 RELATIONSHIP OF THE ALTERNATIVE TO THE OBJECTIVES

The No Project Alternative would not meet any of the project objectives.

5.6 ALTERNATIVE B: REDUCED SIZE ALTERNATIVE

5.6.1 DESCRIPTION

Under the Reduced Size Alternative, the subject property would be developed with a photovoltaic (PV) solar farm, with approximately 200 PV solar arrays, or roughly one-half the size of the proposed project, in generally the same configuration as shown on Figure 3-4, *Groundmount Array Layout*, in Chapter 3, *Project Description*, but with the northern fence line moved further south to accommodate less space

needed for the PV solar arrays. All the components of the proposed project would be constructed, at the appropriate scale to support operation of the PV solar arrays, including the gravel access roads, concrete pads for the infrastructure, inverter, transformer, and fencing. Access to the parcel would continue to be provided via Grant Line Road. With the number of PV arrays reduced by one-half, the overall demand for water for cleaning the arrays would be reduced, as well as the amount of land and habitat impacted by the proposed project.

5.6.2 IMPACT DISCUSSION

5.6.2.1 AESTHETICS

The proposed project would not result in any significant aesthetic impacts. There are no scenic vistas visible from the parcel, and the project site is not located near a designated scenic corridor. Additionally, the proposed project does not include any lighting; therefore, there would be no new source of substantial light or glare. Implementation of the proposed project could potentially alter the existing visual character or quality of the parcel and its surroundings, however, based on the project site location and existing conditions, it would not substantially degrade existing visual character.

Under the Reduced Size Alternative, visual character or quality of the parcel and its surroundings could still potentially be altered. However, similar to the proposed project, due to project site location and existing conditions, the Reduced Size Alternative would not substantially degrade existing visual character.

Overall, the Reduced Size Alternative would result in *similar* aesthetic impacts as the proposed project.

5.6.2.2 AGRICULTURE AND FORESTRY RESOURCES

The proposed project would not result in any significant impact to agricultural or forestry resources. The undeveloped parcel is not classified as Prime Farmland, Unique Farmland, or Farmland of Statewide Significance, nor is it subject to a Williamson Act contract. 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.

Overall, neither the Reduced Size Alternative nor the proposed project would result in significant impacts to agriculture or forestry resources. Therefore, the agricultural resource impacts of the Reduced Size alternative are *similar* to the proposed project.

5.6.2.3 AIR QUALITY

With mitigation, the proposed project would not result in significant air quality impacts. The proposed project would not conflict with or obstruct implementation of the BAAQMD *2017 Clean Air Plan*. Construction of the proposed project would result in short-term air pollutant emissions that could violate air quality standards and expose off-site sensitive receptors to substantial concentrations of air pollutant emissions, which would be less than significant with mitigation measures. Once operational, the proposed project would generate occasional vehicle trips by maintenance workers to perform routine maintenance

and repairs, and a water truck that would make deliveries to the project site approximately 1-2 times per year. These trips are anticipated to be sporadic and nominal and would have a less than significant impact.

Like the proposed project, the Reduced Size Alternative would not exceed the Air District's emissions thresholds and would therefore not conflict with the *2017 Clean Air Plan*. The Reduced Size Alternative would involve construction on-site and would therefore have the potential to expose any sensitive receptors to construction-related air pollutants. However, in accordance with the reduced size of the Alternative, construction-related emissions would also be reduced.

The Reduced Size Alternative would also generate trips by maintenance workers to perform routine maintenance and repairs, and water delivery trucks.

Neither the proposed project nor the Reduced Size Alternative would involve the types of land uses that could create objectionable odor impacts.

Overall, the Reduced Size Alternative would result in *similar* air quality impacts compared to the proposed project.

5.6.2.4 BIOLOGICAL RESOURCES

As discussed in Chapter 4.4, *Biological Resources*, of this Draft EIR, 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. Given the known occurrences within the vicinity of the project site, construction of the proposed project could potentially, kill, injure, or alter the behavior of nine special-status wildlife species on the site, resulting in a significant impact. However, with mitigation, the impact project construction may have on special status species would be reduced to less than significant. The proposed project would not result in significant impacts to riparian habitats, sensitive natural communities, wetlands, wildlife corridors, wildlife nursery sites, or habitat conservation plans.

The Reduced Size Alternative would involve the same construction activity, with the same potential for significant biological resource impacts. This alternative would also involve construction that would alter natural habitats and breeding sites, with the potential to impact special-status species that happen to be present during construction. However, the Reduced Size Alternative would move the northern fence line further south to accommodate less space needed for the PV solar arrays. This would reduce the area for potential significant but mitigable impacts to biological resources.

Neither the proposed project nor the Reduced Size Alternative would have the potential to affect riparian habitats, sensitive natural communities, wetlands, wildlife corridors, wildlife nursery sites, or habitat conservation plans.

Overall, with the reduction in the area of potential effect, biological resource impacts from the Reduced Size Alternative would be *slightly lessened* compared to the proposed project.

5.6.2.5 CULTURAL RESOURCES

The project site is not listed in a register of historical resources. The proposed project would involve ground disturbance and could damage archaeological resources and/or human remains; such impacts would be less than significant with mitigation.

The Reduced Size Alternative would involve the same construction activities as the proposed project, including ground disturbance that could impact archaeological resources or human remains, that may be buried in site soils, however it would involve a smaller site development area. Because the area of potential effect is smaller under this alternative, the overall potential for discovery is slightly lessened than that of the proposed project. Like the proposed project, with implementation of mitigation measures, impacts would be considered less than significant.

Overall, the Reduced Size Alternative would result in *slightly lessened* cultural resources impacts compared to the proposed project.

5.6.2.6 GEOLOGY AND SOILS

The project site is not located in an earthquake fault zone but is expected to experience "strong" shaking due to location in a seismically active region. Topography of the site is generally flat and would not result in an erosion or landslide hazard. The project site is located within an area susceptible to very low category of liquefaction. Furthermore, sites with similar topography in the immediate vicinity of the project site have not experienced landslides, lateral spreading, subsidence, liquefaction, or collapse; therefore, the proposed project is unlikely to result in significant impacts related to unstable geologic units or soil. The proposed project would be required to implement best management practices and measures to avoid significant hazards from site soils and geologic conditions in compliance with existing local, State, and federal regulatory requirements, including, but not limited to, the East County Area Plan, the Alameda County Municipal Code, and the California Building Code. Therefore, there would be no impact with respect to geological-related hazards. While no paleontological resources have been identified on the project site, because the proposed project requires excavation where no such excavation has previously occurred fossils of potential scientific significance that have not been recorded could be encountered. Ground-disturbing construction associated with development under the proposed project could cause damage to, or destruction of, paleontological resources, but such impacts would be less than significant with mitigation.

Like the proposed project, there would be no impacts related to geological-related hazards under the Reduced Size Alternative since the alternative would also be required to comply with regulatory requirements.

The Reduced Size Alternative would involve the same construction activities as the proposed project, including ground-disturbing construction that could cause damage to, or destruction of paleontological resources. Because the area of potential effect is smaller under this alternative, the overall potential for discovery is slightly lessened than that of the proposed project. Like the proposed project, with implementation of mitigation measures, impacts would be considered less than significant.

Neither the proposed project nor the Reduced Size Alternative would require the construction or use of septic tanks or alternative wastewater disposal system.

Overall, the Reduced Size Alternative would *slightly lessen* geology and soil impacts compared to the proposed project.

5.6.2.7 GREENHOUSE GAS EMISSIONS

The proposed project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant effect on the environment, nor would it conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing greenhouse gas emissions.

Similar to the proposed project, the Reduced Size Alternative would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant effect on the environment, nor would it conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing greenhouse gas emissions.

Overall, the Reduced Size Alternative would cause *similar* land use and planning impacts compared to the proposed project.

5.6.2.8 HAZARDS AND HAZARDOUS MATERIALS

Construction of the proposed project could include potential spills associated with the use of fuels and lubricants in construction equipment and operation could involve the use of common cleaning substances and PV facility maintenance products. However, these potentially hazardous substances would not occur in sufficient quantities to pose a significant hazard to public health and safety and the environment. The proposed project would be compliant with applicable laws, regulations, and conditions of approval to minimize hazards associated with the routine transport, use, or disposal of hazardous materials to the maximum extent possible. The proposed project would use silicon PV modules that do not contain hazardous chemicals, with nontoxic anti-reflective coating. The project site does not contain any known hazardous materials spills or storage sites and the Phase I Environmental Site Assessment conducted for the proposed project found no recognized environmental conditions.

Neither the proposed project nor the Reduced Size Alternative would be within 0.25 miles of a school or within 2 miles of a public airport. Both the proposed and alternative projects would not interfere with an adopted emergency response or evacuation plan or expose people or structures to significant risk of loss, injury, or death involving wildland fires.

Overall, the Reduced Size Alternative would cause *similar* hazards and hazardous materials impacts compared to the proposed project.

5.6.2.9 LAND USE AND PLANNING

The proposed project would not divide an established community or conflict with land use policies or a habitat conservation plan, and land use and planning impacts of the proposed project would be less than significant.

Like the proposed project, the Reduced Size Alternative would not divide an established community, conflict with land use policies, or conflict with a habitat conservation plan.

Overall, the Reduced Size Alternative would result in *similar* land use and planning impacts compared to the proposed project.

5.6.2.10 NOISE

Construction of the proposed project would temporarily increase noise levels at and near the project site and operational equipment would generate noise. However, it would not result in a temporary or permanent increase in ambient noise levels in excess of standards established in applicable local, State, or federal standards. Additionally, the proposed project would not generate excessive groundborne vibration or groundborne noise levels. The project site is not located within two miles of an airport and would not expose people to excessive noise levels.

Similar to the proposed project, the Reduced Size Alternative would also result in temporary, short-term construction noise, impacts. The noise impacts associated with construction noise would be lessened due to the shorter construction duration. Operational noise levels under the Reduced Size Alternative would be similar to the proposed project.

Overall, the Reduced Size Alternative would result in *similar* impacts to noise compared to the proposed project.

5.6.2.11 TRIBAL CULTURAL RESOURCES

The project site is not listed in a register of historical resources. The proposed project would involve ground disturbance and could damage unknown tribal cultural resources; such impacts would be less than significant with mitigation.

The Reduced Size Alternative would involve the same construction activities as the proposed project, including ground disturbance that could impact tribal cultural resources that may be buried in site soils, however it would be within a smaller site development area. Because the area of potential effect is smaller under this alternative, the overall potential for discovery is slightly lessened compared to that of the proposed project. With implementation of mitigation measures, impacts would be considered less than significant.

Overall, the Reduced Size Alternative would result in *slightly lessened* tribal cultural resources impacts compared to the proposed project.

5.6.3 RELATIONSHIP OF THE ALTERNATIVE TO THE OBJECTIVES

The Reduced Size Alternative would generate 1 MW of power, which is lower than the objective of providing 2 MWs of solar electricity to Bay Area residents, as noted in the objectives. This alternative would also lessen the project's contribution to achieving California's renewable energy generation goals under SB 100, Alameda County's climate change and renewable energy goals, and Bay Area Load Serving Entities' local renewable energy procurement goals. By reducing the number of PV arrays by half, the Reduced Project Alternative does not meet the objective of maximizing productivity in an area with excellent solar resource capabilities. The Reduced Size Alternative would, however, meet the objectives of creating construction and permanent jobs; completing construction and achieving commercial operation in accordance with the schedule; locating solar power plant facilities as near as possible to electrical transmission facilities; utilizing existing infrastructure to the extent feasible; and minimizing impacts through low-impact design and short construction timeline. Overall, the Reduced Size Alternative would fully meet five of the ten project objectives.

5.7 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The environmentally superior alternative is the alternative that would be expected to generate the least amount of significant impacts. In addition to the discussion and comparison of impacts of the project and the alternatives, Section 15126.6 of the CEQA Guidelines requires that an "environmentally superior" alternative be identified. Identification of the environmentally superior alternative is an informational procedure and the alternative identified may not be the alternative that best meets the goals or needs of the project applicant or Alameda County.

As shown in Table 5-1, the No Project Alternative would result in fewer impacts than the proposed project (with the exception of Agricultural and Forestry Resources and Land Use and Planning). However, the No Project Alternative would not meet the objectives of the proposed project. Regardless, the No Project Alterative is considered the environmentally superior alternative. However, in accordance with State CEQA Guidelines Section 15126.6(e)(2), if the environmentally superior alternative is the No Project Alternative, the Draft EIR shall also identify an environmentally superior alternative among the other alternatives.

As discussed elsewhere in this EIR, the proposed project will not result in any significant impacts (after implementation of mitigation measures in some cases). However, in comparison to the proposed project, the Reduced Size Alternative would result in slightly lessened impacts to Biological Resources, Cultural Resources, Geology and Soils, and Tribal Cultural Resources, as a result of the reduced parcel development footprint.

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6. CEQA-Mandated Sections

This chapter provides an overview of the impacts of the proposed project based on the analyses presented in Chapter 4 of this Draft EIR. The topics covered in this chapter include impacts found not to be significant, significant irreversible changes, and growth inducing impacts. A more detailed analysis of the effects the proposed project would have on the environment and proposed mitigation measures to minimize significant impacts is provided in Chapters 4.1 through 4.9.

6.1 IMPACTS FOUND NOT TO BE SIGNIFICANT

The California Environmental Quality Act (CEQA) Guidelines Section 15128 allows environmental issues, for which there is no likelihood of significant impact, to be "scoped out" and not analyzed further in the Draft Focused EIR. This section explains the reasoning by which it was determined that impacts to Cultural Resources, Energy, Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, Mineral Resources, Population and Housing, Public Services, Parks and Recreation, Transportation, Utilities and Service Systems, and Wildfire potentially resulting from construction of the proposed project would be less than significant. For additional information, refer to Appendix A, *Notice of Preparation and Scoping Comments*, for an in-depth explanation of the following CEQA topic areas.

6.1.1 CULTURAL RESOURCES

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.[1] 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. The project site is vacant and not recognized as a historic landmark. With no historical resources available on the project site, there would no impact to historical resources.

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. While no known

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

resources currently exist on-site, it is possible that the proposed project could have the potential to uncover and damage or destroy unknown resources during ground-disturbing activities, including unrecorded Native American prehistoric archaeological materials or human remains. As such, the Initial Study included in Appendix A included two mitigation measures that would reduce impacts to cultural resources in this regard to less than significant. Additionally, these mitigation measures are applied in Chapter 4.9, *Tribal Cultural Resources*, as well.

6.1.2 ENERGY

The proposed project would be generating renewable energy, and thus would offset energy consumed during project construction and generate net negative energy use. The proposed solar PV facility would connect to an existing PG&E distribution line and generate renewable electrical energy that would be used by local consumers in line with State goals. Therefore, the proposed project would not result in energy related impacts.

6.1.3 GEOLOGY AND SOILS

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 have the potential to exacerbate this existing hazard. The project site has not been evaluated for liquefication or seismic landslide hazards, however it would not introduce buildings or substantial grading on the project site, nor would it have the potential to exacerbate these existing hazards. The topography of the project site is generally flat, and the proposed project would therefore not result in an erosion or landslide hazard.

The proposed project would result in a minimal amount of grading on the project site. Compliance with existing regulatory requirements and implementation of erosion control best management practices during construction on the project site would reduce the impacts associated with soil erosion or the loss of topsoil. The proposed project would not require the construction or use of septic tanks or alternative wastewater disposal systems.

As discussed in the Initial Study included in Appendix A, while no paleontological resources have been identified on the project site, because the proposed project requires ground disturbance where none has previously occurred, fossils of potential scientific significance that have not been recorded could be encountered. Therefore, ground-disturbing construction associated with development under the proposed project could cause damage to, or destruction of, paleontological resources. Impacts, however, to paleontological resources or site or unique geologic features on-site would be reduced to a less-than-significant level with implementation of Mitigation Measure GEO (f), as identified in Appendix A.

6.1.4 HAZARDS AND HAZARDOUS MATERIALS

The proposed PV facility would not involve the routine transport of hazardous waste, nor is it located within 0.25 miles of a school or within 2 miles of an airport. It does not contain any known hazardous materials spills or storage sites, and a Phase I Environmental Site Assessment conducted for the project found no recognized environmental conditions. 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. The project site is located within an area of moderate Fire Hazard Severity for the Local Responsibility Area, but does not contain any areas of moderate, high, or very high Fire Hazard Severity for the State Responsibility Area.

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 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.

Based on comments received on the Notice of Preparation for the proposed project, Chapter 4.6, *Hazards and Hazardous Materials*, is included in this Draft EIR, to specifically address hazards related to materials used in the solar panels. As described in Chapter 4.6, the proposed project would not result in hazardous materials impacts.

6.1.5 HYDROLOGY AND WATER QUALITY

The proposed project would disturb less than one acre of soil on the project site and would therefore not be required to comply with the NPDES General Construction Permit. 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 Alameda County general plan and all applicable county ordinances. The proposed project would introduce 2,200 square feet (0.417 acres) of impervious surface on the project site which represents approximately 0.20 percent of the 23.07-acre site. Accordingly, the vast majority of the project site would remain permeable and available for groundwater recharge. Additionally, 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-source generator of water pollutants and would therefore not violate any water quality standard.

Water for project operation and irrigation would be delivered to the project site via a 500-gallon water truck; no connections to municipal water or groundwater wells are proposed. The water used during construction and water operation would be provided from the orchard located immediately north of the project, which is owned by the same property owner. Therefore, the proposed project would not deplete groundwater supplies or interfere substantially with groundwater recharge. Finally, the project site is not located in a flood hazard, tsunami, or seiche zones. As such, there would be no impacts pertaining to hydrology and water quality.

6.1.6 MINERAL RESOURCES

The project site is not identified as containing any mineral deposits and would therefore have no impact on mineral resources.

6.1.7 POPULATION AND HOUSING

The project site would not involve new housing or employment centers. Furthermore, the proposed project would not displace substantial numbers of existing housing or substantial numbers of people, necessitating the construction of replacement housing elsewhere. Therefore, there is no impact anticipated to population of housing.

6.1.8 PUBLIC SERVICES

The proposed project is a PV facility and would not result in an impact to fire or police protection services, schools, or library services.

6.1.9 PARKS AND RECREATION

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. As such, there would be no impacts to parks and recreation.

6.1.10 TRANSPORTATION

Construction of the proposed project would result in nominal vehicle trips that would represent a small fraction of the capacity of Grant Line Road and Great Valley Parkway. These trips would be temporary in nature during project construction (up to approximately 4 months) and would be dispersed throughout the day. Project operation would generate occasional trips by project maintenance workers to perform routine maintenance and repairs, and a 500-gallon water truck that would make deliveries to the project site approximately 2 times per year and would not affect the capacity of the roadway system. The proposed project would also not alter existing transportation roads or paths. Given the low volumes of project construction traffic, and even lower volumes of projected operational traffic, the project would not be in conflict with any program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities, nor would it result in substantial vehicle miles traveled. The project would also therefore not impact emergency access or introduce other transportation related hazards.

6.1.11 UTILITIES AND SERVICE SYSTEMS

The proposed project, a solar PV facility, would not generate wastewater, would not require connections to municipal water, and would generate minimal amounts of solid waste during construction and maintenance. Water for project operation and irrigation would be replenished from the orchard located immediately north of the project, which is owned by the same property owner, and be delivered to the project site approximately two times per year via a 500-gallon water truck. Therefore, the proposed project would be anticipated to use up to 1,000 gallons per year, which represents a nominal amount of water in comparison to overall water use in the service area of the project site. The proposed project would therefore not result in impacts to utilities and service systems.

6.1.12 WILDFIRE

The proposed project would not block roads or impede emergency access to surrounding properties or neighborhoods during either construction or operation of the project, nor would it interfere with or impair an adopted emergency response plan, or emergency evacuation plan. The project site is not located within a State Responsibility Area or very high fire hazard severity zone within a Local Responsibility Area for wildfires. The proposed landscaping solar panels will be mounted on a steel racking frame that is positioned three to nine feet above ground to allow for vegetation control and periodic maintenance. It would not expose occupants and the surrounding neighborhoods to pollutant concentrations or the uncontrolled spread of wildfire. The project would connect to PG&E's existing infrastructure in the area. The project site is characterized as generally flat and is surrounded by low topographic relief and is not in an area that has a high potential for landslides. Accordingly, the vast majority of the project site would remain permeable, and the proposed project would not expose people or structures to flooding or landslides that result from post-fire instability and runoff. Therefore, the proposed project would not result in impacts with respect to wildfire.

6.2 SIGNIFICANT IRREVERSIBLE CHANGES

Section 15126.2(c) of the CEQA Guidelines requires an EIR to discuss the extent to which a proposed project or plan would commit nonrenewable resources to uses that future generation would probably be unable to reverse. The three CEQA-required categories of irreversible changes are discussed below.

6.2.1 LAND USE CHANGES THAT COMMIT FUTURE GENERATIONS

As described in Chapter 3, *Project Description*, the proposed project would develop a 23.07-acre vacant parcel with a solar photovoltaic facility with a capacity of 2 megawatt alternating current. The proposed project would not implement a land use change that commits future generations to uses that are not already prevalent in the project vicinity because the proposed solar panels are able to be removed, and the site could revert back to being vacant land.

6.2.2 IRREVERSIBLE DAMAGE FROM ENVIRONMENTAL ACCIDENTS

Potential environmental accidents of concern include those that would have adverse effects on the environment or public health due to the nature or quantity of material released during an accident and the receptors exposed to that release. Construction activities associated with development of the proposed project would involve some risk for environmental accidents. However, these activities would be monitored by City, State, and federal agencies, and would follow professional industry standards governing the use, storage, transport, and disposal of hazardous materials. Additionally, the land use proposed by the proposed project would not include any uses or activities that are likely to contribute to or be the cause of a significant environmental accident. As a result, the proposed project would not pose a substantial risk of environmental accidents.

6.2.3 LARGE COMMITMENT OF NON-RENEWABLE RESOURCES

Consumption of nonrenewable resources includes issues related to increased energy consumption, conversion of agricultural lands, and lost access to mining reserves. The proposed project would require water and electric resources for construction. However, ongoing operation of the proposed project would create renewable energy resources and would not require a large commitment of non-renewable resources.

6.3 GROWTH-INDUCING IMPACTS OF THE PROPOSED PROJECT

Section 15126.2(d) of the CEQA Guidelines requires that an EIR discuss the ways in which a proposed project or plan could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Typical growth inducing factors might be the extension of urban services or transportation infrastructure to a previously unserved or under-served area, or the removal of major barriers to development. This section evaluates the proposed project's potential to create such growth inducements. Not all aspects of growth inducement are negative; rather, negative impacts associated with growth inducement occur only where the projected growth would cause adverse environmental impacts.

Growth-inducing impacts fall into two general categories: direct or indirect. Direct growth-inducing impacts are generally associated with providing urban services to an undeveloped area. Indirect, or secondary growth-inducing impacts consist of growth induced in the region by additional demands for housing, goods, and services associated with the population increase caused by, or attracted to, a new project.

The proposed project would not create any growth in population. During the construction phase, the project would employ a small amount of people for a limited period of time, and it is assumed that this would therefore come from existing jobs. Project operation would only require minimal oversight for

maintenance and monitoring of the proposed project as it would be integrated into existing PG&E infrastructure and, while the maintenance and operations of the PV facility would contribute to jobs, it would therefore not result in a substantial increase in jobs. The project would not require the construction of new roadways. As such, construction of the proposed project would not be considered to have substantial adverse growth-inducing impacts.

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7. Organizations and Persons Consulted

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