Potentia-Viridi Battery Energy Storage System

Staff Assessment

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Section 1

Executive Summary

1 Executive Summary

Pursuant to California Code of Regulations, title 20, section 1879, the California Energy Commission (CEC) staff has prepared a Staff Assessment (SA), which includes a draft environmental impact report (EIR), to evaluate the potential environmental effects of the construction and operation of the Potentia-Viridi Battery Energy Storage System (project) (24-OPT-04), in compliance with the California Environmental Quality Act (CEQA), the CEQA Guidelines, the Warren-Alquist State Energy Resources Conservation and Development Act, and California Code of Regulations, title 20, chapter 5, article 4.1 (Opt-In Certification Program). The SA also evaluates whether the construction and operation of the project would be consistent with all applicable local, state, and federal laws, ordinances, regulations, and standards (LORS).

The applicant is seeking a certification from the CEC to construct and operate the project. The applicant proposes to construct, operate, and maintain a battery energy storage facility (battery energy storage system [BESS]) and associated infrastructure to deliver renewable electricity to the statewide electricity transmission grid. The project is proposed on a 70-acre leased portion of approximately 102 acres in eastern Alameda County. The project would disturb approximately 60.7 acres overall. More complete project details are set forth in **Section 3, Project Description**.

The project includes project components that are outside of the CEC's jurisdiction. These components would be constructed and owned by Pacific Gas and Electric Company (PG&E). The components include an approximately 1,300-foot segment of the gen-tie line, transmission tower structures and related lines and conductors, a substation bay dead-end transmission structure and expansion of a 500 kilovolt (kV) breaker-and-a-half with a new circuit breaker.

Based on the CEC staff's analysis in this document, CEC staff recommends the CEC issue a certification for the project with a statement of overriding considerations pursuant to sections 15091 and 15093 of the CEQA Guidelines regarding impacts to visual resources, as described in **Section 11, Project's Inconsistency with State and Local Laws and Staff's CEQA Override Findings and Recommendation**, of the SA.

1.1 CEC Project Application Review History

This SA contains CEC staff's independent and objective evaluation of the proposed project and examines engineering, environmental, public health and safety, and environmental justice impacts of the proposed project, and consistency with additional statutory provisions, based on the information provided by the applicant, government agencies, interested parties, independent research, and other sources available at the time the SA was prepared.

On August 7, 2024, the CEC received an application for the Potentia-Viridi Battery Energy Storage System (CEC docket 24-OPT-04). Consistent with Public Resources Code section 25545.4, CEC staff reviewed the application materials within 30 days and on September 6, 2024, the CEC's Executive Director notified the applicant that the application was incomplete, identifying numerous specific informational deficiencies required under California Code of Regulations, title 20, section 1877. Over the following eleven months, the applicant submitted the missing information. On August 29, 2025, CEC staff determined the supplemental information required to complete the application was acceptable and issued a Determination of Completeness signed by CEC's Executive Director.

With the application complete, CEC staff met the procedural requirements of Public Resources Code sections 25545.7.2 and 25545.7.4 by issuing a notice of preparation of an EIR on September 2, 2025, holding an environmental scoping and public informational meeting in Tracy, San Joaquin County, on September 18, 2025, and notifying the relevant California Native American tribes of the application and inviting consultation.

1.2 Summary of Engineering Evaluation

Below is an overview of the analysis included in **Section 4, Engineering Evaluation**.

Facility Design. CEC staff concludes that the design and construction of the project, including the BESS facility and linear facilities, would conform with the applicable LORS related to facility design and engineering. In addition, CEC staff's proposed conditions of certification (COCs) include measures to ensure conformance with engineering-related LORS.

Facility Reliability. The project would be built to operate in a manner consistent with industry norms for reliable operation and would develop a maintenance program to ensure operational efficiency and reliability. The BESS would be expected to demonstrate an equivalent availability factor of 98 percent, which is an acceptable level of availability.

Transmission System Engineering. The project would construct a substation and a 2,884-foot-long 500 kV generation tie line to connect to PG&E's existing Tesla Substation. **Section 4.3, Transmission System Engineering**, summarizes detailed project impacts, system upgrades as mitigation measures, and the COCs required to interconnect the project into the California Independent System Operator's (California ISO's) grid. The Queue Cluster 13 Phase II Interconnection Study Report (Cluster 13 Report) found that the project's impacts on the transmission grid could be mitigated with upgrades suggested in the Cluster 13 Report. The mitigation measures mostly consist of the upgrades of the 500 kV and 230 kV breakers at PG&E's Tesla, Metcalf, and Vaca Dixion substations to remedy overloading of the circuit breakers during short circuit faults. With implementation of CEC staff's proposed COCs, the project's impact

on the transmission system would be less than significant and the project would comply with applicable LORS. Section 4.3 also identifies the project's benefits to electric system reliability.

Worker Safety and Fire Protection. Implementation of CEC staff's proposed COCs would mitigate impacts associated with worker safety and fire protection and ensure compliance with worker safety and fire protection LORS. CEC staff's proposed COCs, which include a Construction Health and Safety Program, an Operations and Maintenance Health and Safety Program, a Construction Safety Supervisor, a Construction Safety Monitor, and an on-site automatic external defibrillator (AED) would mitigate worker safety risks. Fire protection impacts include the risk of potential fires at the BESS. CEC staff's proposed COCs, which include National Fire Protection Association 855 compliance, additional engineering controls, enhanced administrative controls (e.g., annual training, command and control procedures, reporting of any incidents, preparing a root-cause analysis), and engineering design feedback from the Alameda County Fire Department, would mitigate these risks. Additionally, the worker safety and fire protection impacts from the construction and operation of project components outside of the CEC's Opt-In certification would be less than significant and no mitigation would be required.

1.3 Summary of Environmental Impact Assessment and Conditions of Certification

Below is an overview of the analysis included in **Section 5, Environmental Impact Assessment**. Impacts are categorized by the type of impact as follows:

- No Impact. The scenario in which no adverse changes to (or impacts on) the environment would be expected.
- Less Than Significant Impact. An impact that would not exceed the defined significance criteria or would be eliminated or reduced to a less than significant level through implementation of the applicant's project measures and/or compliance with existing federal, state, and local laws, ordinances, regulations, and standards.
- Less Than Significant with Mitigation Incorporated. An impact that would be reduced to a less than significant level through implementation of the identified mitigation requirements.
- Significant and Unavoidable Impact. An adverse effect that meets the significance criteria, but there appears to be no feasible mitigation available that would reduce the impact to a less than significant level. In some cases, mitigation may be available to lessen a given impact, but the residual effects of that impact would continue to be significant even after implementation of the mitigation measure(s).

Table 1-1 summarizes the environmental impacts and consequences of the project, including mitigation proposed.

TABLE 1-1 SUMMARY OF ENVIRONMENTAL IMPACTS AND LORS COMPLIANCE

Technical Area	Conforms with LORS?	Impacts Mitigated?
Air Quality	Yes	Yes
Biological Resources	Yes	Yes
Climate Change and Greenhouse Gas Emissions	Yes	Yes
Cultural and Tribal Cultural Resources	Yes	Yes
Efficiency and Energy Resources	Yes	Yes
Geology, Paleontology and Minerals	Yes	Yes
Hazards, Hazardous Materials, and Wildfire	Yes	Yes
Land Use	No	Yes
Noise and Vibration	Yes	Yes
Public Health	Yes	Yes
Socioeconomics	Yes	Yes
Solid Waste Management	Yes	Yes
Transmission Line Safety and Nuisance	Yes	Yes
Transportation	Yes	Yes
Visual Resources	No	No
Water Resources	Yes	Yes

The COCs are proposed for the project components within the CEC's Opt-In certification and the Mitigation Measures (MMs) are recommended for the project components outside the CEC's Opt-In certification. Not all potentially significant impacts of the proposed project would be reduced to less than significant levels with COCs and MMs incorporated. While CEC staff is concluding there is a significant and unavoidable impact to visual resources, staff concludes there is substantial and compelling evidence in the record to support a CEC decision to approve the project by issuing a statement of overriding considerations.

The following summarizes CEC staff's conclusions.

Air Quality. *Less Than Significant with Mitigation Incorporated*. With the implementation of CEC staff's proposed COCs, the project would have a less than significant impact on air quality and would comply with applicable LORS. The COCs require the project owner to sufficiently reduce fugitive dust and other criteria pollutants from project construction and operation. CEC staff's proposed COCs are effective and comprehensive for reducing air quality impacts during construction and operation. Mitigation Measure **MM AQ-1** is recommended to reduce air quality impacts from the components outside the CEC's Opt-In certification to less than significant.

Biological Resources. *Less Than Significant with Mitigation Incorporated*. The construction and operation of the proposed project may impact federal or state listed plants, wildlife and other wildlife species designated as special-status, including by California Department of Fish and Wildlife (CDFW), United States Fish and Wildlife Service (USFWS), and/or the California Native Plant Society (CNPS), including, but not limited to, big tarplant (*Blepharizonia plumosa*), Crotch's bumble bee (*Bombus crotchii*),

San Joaquin kit fox (*Vulpes macrotis mutica*), California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana draytonii*), burrowing owl (*Athene cunicularia hypugaea*), American badger (*Taxidea taxus*), golden eagle (*Aquila chrysaetos*), Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus luecurus*), tricolored blackbird (*Agelaius tricolor*), and monarch butterfly (*Danaus plexippus*), as well as native and migratory birds occurring within and adjacent to the project area. Some species including, but not limited to, big tarplant, California tiger salamander, California red-legged frog, San Joaquin kit fox, and burrowing owl, are covered species under the East Alameda County Conservation Strategy (EACCS).

With the implementation of CEC staff's proposed COCs, impacts to these species would be reduced to less than significant and would comply with applicable LORS. In addition, staff has recommended mitigation measures for special-status plants and wildlife impacts outside of CEC's Opt-In certification to reduce impacts to less than significant. The proposed COCs and mitigation measures include the presence of qualified biological monitors during construction activities, environmental training for all project personnel, applicable species-specific surveys, exclusionary fencing, compensatory mitigation, and additional measures to avoid, minimize, and mitigate potential environmental effects. The proposed COCs also fulfill standards to fully mitigate for impacts to listed species under the California Endangered Species Act.

The proposed project would also result in impacts to Patterson Run, which meets the jurisdictional definitions of waters of the state under the Regional Water Quality Control Board (RWQCB), and Waters of the United States under the United States Army Corps of Engineers (USACE) and is considered a streambed under CDFW regulations. Staff has proposed COCs that are consistent with conditions that are typically required in a CDFW Lake and Streambed Alteration Agreement and include the implementation of Best Management Practices and the acquisition of mitigation lands to offset permanent and temporary impacts to these features and to reduce impacts to less than significant.

Climate Change and Greenhouse Gas Emissions. *Less Than Significant with Mitigation Incorporated*. The project would lead to a net reduction in greenhouse gas emissions across the State's electricity system. With the implementation of CEC staff's proposed COCs, the greenhouse gas emissions related to the project components within the CEC's Opt-In certification would not conflict with any applicable LORS adopted for the purpose of reducing the emissions of greenhouse gases. CEC staff's proposed COCs require the applicant to demonstrate the project would use refrigerants that comply with the California Air Resources Board Hydrofluorocarbons prohibitions in all onsite cooling/refrigeration/air conditioning units, to demonstrate compliance with the CALGreen Tier 2 off-street electric vehicle requirements, and to use biodiesel for 100 percent of total energy use by the emergency backup gensets. The project would therefore have less than significant greenhouse gas-related impacts to the environment with mitigation. Impacts associated with the project components outside the CEC's Opt-In certification to be considered for permitting by California Public Utilities Commission (CPUC) would be further reduced with the inclusion of **MM AQ-1**.

Cultural and Tribal Cultural Resources. *Less Than Significant with Mitigation Incorporated*. There are no recorded historical resources or tribal cultural resources that would be significantly impacted by the project. However, there is a possibility that undocumented archaeological resources might be discovered during construction and that such a discovery could be a historical resource or tribal cultural resource. With implementation of CEC staff's proposed COCs for components within the CEC's Opt-In certification and MMs for components outside the CEC's Opt-In certification, the proposed project's impacts on cultural and tribal cultural resources would be less than significant and would be consistent with applicable LORS. The COC/MM require implementation of a monitoring program involving appropriately qualified specialists who would observe and manage inadvertent discoveries of historical resources during construction, train the construction workforce in basic identification of historical resources, implement stop-work procedures (if required), and report to the CEC on all activities. Additionally, if fulltime monitoring becomes necessary, it would include California Native American tribal monitors if the consulting tribes wish to participate.

Efficiency and Energy Resources. *Less Than Significant Impact*. Energy consumed by the project during construction and operation would not create significant adverse effects on energy supplies or resources, nor would it consume energy in a wasteful or inefficient manner. Furthermore, through energy-efficient design, the project would neither conflict with nor obstruct state or local LORS for renewable energy or energy efficiency and, therefore, would have no impact on those LORS.

Geology, Paleontology, and Minerals. *Less Than Significant with Mitigation Incorporated*. The impacts on, and from, potential geologic hazards would be mitigated to less than significant through appropriate methods for project design, grading, construction that are based on the results of a final site-specific geotechnical investigation that conforms with the Alameda County Municipal Code, California Building Code (CBC), other applicable LORS, and CEC staff's proposed COCs. Staff's proposed COC requires the project owner to perform geotechnical and geohazard investigations and incorporate that investigation's proposed mitigation into project design, grading, and construction. Compliance with CEC staff's proposed COC, Facility Design COCs, and Water Resources COCs, would mitigate potential impacts the project may have on geologic hazards to less than significant. Compliance would also mitigate potential impacts from geologic hazards on the project to less than significant.

The project's ground disturbing activities would disturb Miocene sedimentary rock formations and Quaternary sedimentary deposits that have high paleontological sensitivities. Potential impacts to paleontological resources would be mitigated to less than significant through conformance with applicable LORS and implementation of CEC staff's proposed COCs. Paleontological COCs require training, monitoring, and protection of paleontological resources that may be encountered during ground disturbing activities.

No known mineral resources nor unique geologic features of commercial, scientific, and recreational value occur at the project site. The project would have less than significant impacts on these resources.

Additionally, CEC staff recommends the impacts on, and from, potential geologic hazards from construction and operation of project components outside of the CEC's Opt-In Certification be mitigated to less than significant. Mitigation could be completed through conformance with the Alameda County Municipal Code, CBC, applicable LORS, and compliance with staff's proposed mitigation measures related to paleontological resources and soil erosion.

Hazards, Hazardous Materials, and Wildfire. *Less Than Significant with Mitigation Incorporated*. The impacts associated with the routine transport, use, disposal or accidental release of hazardous materials/waste during construction and operation would be less than significant with the implementation of CEC staff's proposed COCs. Impacts related to unknown environmental contamination on the project site would be less than significant with the implementation of CEC staff's proposed COCs. Impacts related to schools and airports would be less than significant as no such facilities are within the project vicinity. The project would not substantially impair or interfere with emergency response or evacuation planning, emergency vehicle access, or personnel access to the project site. Access along the primary roadway leading to and from the project site would be maintained throughout construction and operation of the project to serve as the main ingress/egress for workers, emergency personnel, and potential evacuation, if needed. The project is within a State Responsibility Area (SRA); however, the project site is not populated, adjacent areas are sparsely populated, and there are no nearby forested areas. With implementation of CEC staff's proposed COCs, potential wildfire impacts would be less than significant with mitigation.

The COCs require the following: a Hazard Materials Business Plan (HMBP) and Spill Prevention Control and Countermeasure Plan (SPCC); advance approval for changes in hazardous materials; hazardous waste generator identification numbers; site security plans for construction and operation; a Soils Management Plan; procedures for professional staffing, management, and actions in the case of suspected contaminated soil and/or groundwater; an air quality and water quality sampling plan in case of a container fire at the BESS; and annual vegetation management inspection reports documenting completion of vegetation management.

With implementation of CEC staff's proposed COCs, the project components within the CEC's Opt-In certification would be in accordance with applicable LORS, and the project would have less than significant impacts related to hazards, hazardous materials/waste and wildfire. Additionally, the hazards, hazardous materials/waste and wildfire impacts from the construction and operation of project components outside of the CEC's Opt-In certification would be less than significant and no mitigation would be required.

Land Use. *Less Than Significant with Mitigation Incorporated*. With implementation of COCs for the project components within the CEC's Opt-In certification, the project would comply with LORS related to land use, agriculture, and forestry, with the exception of a local Alameda County Williamson Act rule (10/10 Rule) limiting the size of the project to no more than 10 acres. Staff concluded that this conflict is not an environmental impact, as the project site is classified by the Department of Conservation as non-prime Grazing Land, which is not an Important Farmland category. See **Section 11** for discussion of LORS inconsistency and staff's recommendation. No mitigation measures are needed for components of the project outside the CEC's certification authority.

Noise and Vibration. *Less Than Significant with Mitigation Incorporated*. With the implementation of CEC staff's proposed COCs, the project's construction and operation would have a less than significant impact related to noise and vibration and would conform with applicable LORS. The COCs require a noise complaint process, restrictions on construction activities, and an operational noise survey to verify project noise limits are met. The noise and vibration impacts from the construction and operation of the project components outside the CEC's Opt-In certification would be less than significant and would not require any MMs.

Public Health. *Less Than Significant with Mitigation Incorporated*. With the implementation of CEC staff's proposed Air Quality COC **AQ-SC5**, the project would have a less than significant impact on public health and the project components within the CEC's Opt-In certification would comply with applicable LORS. No MMs for project components outside the CEC's Opt-In certification are recommended for public health and impacts would be less than significant.

Socioeconomics. *Less Than Significant Impact*. Construction and operation of the project would not induce unplanned population growth in the region. The regional labor force within a practical commuting distance of the project site is adequate to meet construction labor demands, and the project would require only a minimal number of permanent operations staff, resulting in no long-term housing demand. Temporary construction workers who elect not to commute would have access to sufficient short-term lodging accommodations in nearby communities, avoiding any displacement or strain on local housing resources. The project would have no impacts related to socioeconomics on population growth or the displacement of people or housing.

Construction and operation of the project would result in less than significant socioeconomic impacts on public services. Although construction and operation activities would incrementally increase demand for fire protection and law enforcement, it would not necessitate the construction of new public service facilities or the expansion of existing ones, and it would be consistent with applicable regional LORS. The project would not require new or expanded recreational facilities and would not interfere with existing recreational uses in the surrounding region. With implementation of CEC staff's

proposed COCs, the project would be consistent with applicable LORS and would have a less than significant impact related to socioeconomics.

Solid Waste Management. *Less Than Significant with Mitigation Incorporated*. Solid waste produced during project construction and operation would be recycled to the extent possible or otherwise disposed of at certified local landfills with available capacity. This would be reinforced by implementation of the construction and operational waste management plans included in CEC staff's proposed COCs. Therefore, waste generated by the proposed project, including those sent to landfills, as well as materials handled by third party waste disposal resulting from construction and operation of the project, would have a less than significant impact and would conform with applicable LORS. Additionally, impacts from the project components outside the CEC's Opt-In certification would be less than significant with the inclusion of recommended MMs (operational waste management plan).

Transmission Line Safety and Nuisance. *Less Than Significant with Mitigation Incorporated.* With the implementation of CEC staff's proposed COCs, potential impacts associated with transmission lines and related structures and facilities for the project would have a less-than-significant impact related to transmission line safety and nuisance, and would conform with applicable LORS.

The proposed gen-tie line would be maintained according to the standard procedures of the American National Standard Institute/Institute of Electrical and Electronic Engineers guidelines for line safety and field management. The construction and operation of the project's new collector feeders, gen-tie line, on-site substation, and switchyard would not contribute to electromagnetic field (EMF) levels, corona, audible noise, or radio and television interference beyond acceptable standards. On-site worker or public exposure would be short-term and at levels expected for PG&E lines of similar design and current-carrying capacity. Implementing grounding and other field-reducing measures in strict adherence to current utility standards and guidelines will further minimize the potential for nuisance shocks.

With CEC staff's proposed COCs, the safety and nuisance impact from the construction and operation of the proposed substation, switchyard, collector feeders, and the gen-tie line would be less than significant. Additionally, impacts from the utility switchyard and downstream network upgrades would be reduced to less than significant since these components are subject to permitting by the CPUC and Federal Aviation Administration (FAA) regulations for structures 200 feet and above.

Transportation. *Less Than Significant with Mitigation Incorporated*. The project would have a less than significant impact related to transportation and with implementation of CEC staff's proposed COCs, the project would conform with applicable LORS. CEC staff's proposed COCs require: (1) preparation and implementation of a Construction Traffic Management Plan (CTMP) to cover traffic controls, emergency access, flaggers or other mechanisms to allow for safe entry and exit of construction traffic and repair of

roadway damage, (2) compliance with applicable limitations on vehicle sizes, weights, driver licensing and truck routes, (3) securing permits and licenses for transport of hazardous materials, and (4) if project construction occurs prior to the completion of improvements to the Interstate-580/International Parkway/Patterson Pass Interchange Project, the CTMP shall be amended to include additional measures, which would include the prohibition of all construction traffic (worker, vendor, and trucks) from occurring during the weekday AM (7 to 9 AM) and PM (4 to 6 PM) peak hours.

Visual Resources. *Significant and Unavoidable*. Project components would appear as a collection of geometric shapes and complex industrial forms that would exhibit considerable industrial character, which would contrast with the natural forms, lines, and textures of the existing rural, agricultural landscape character of the site and some (though not all) of the surrounding grasslands and hills. With the implementation of CEC staff's proposed COCs, the project's degradation of the existing visual character or quality of the public views of the site and its surroundings would be reduced but not to levels that would be less than significant. However, the project's glare and night lighting impacts would be reduced to levels that would be less than significant with effective implementation of COCs. COCs would require: (1) the application of structural surface treatments, (2) preparation of a revegetation and habitat restoration plan, and (3) preparation of a light pollution control plan. CEC staff also concluded that the proposed project's degradation of the existing visual character or quality of the public views, and visibility of the proposed project would result in inconsistencies with several Alameda County visual resource management objectives, principles, or policies.

Water Resources. *Less Than Significant with Mitigation Incorporated*. The primary project water supply for both construction and operations would be supplied by the Zone 7 water agency and transported to the site. Zone 7 water consists of approximately 80 percent of deliveries from the State Water Project, 15.5 percent surface water from the Del Valle Reservoir, and 4.5 percent from groundwater from the Livermore Valley basin. Zone 7 serves as the groundwater sustainability agency (GSA) for the Livermore Valley groundwater basin under the Sustainable Groundwater Management Act (SGMA). Impacts due to stormwater runoff would be mitigated by CEC staff's proposed COCs both during construction and operation. Dredge and fill impacts to Patterson Run identified as a possible Waters of the United States would be mitigated through implementation of CEC staff's proposed COC and waste discharge requirements administrated by the Central Valley Regional Water Quality Control Board per Clean Water Act Section 401. During project construction, sanitary wastewater needs would be addressed by portable toilets maintained by a local contractor. During project operation, sanitary waste from the operations and maintenance building would be collected in two 5,000-gallon below-ground holding tanks, periodically pumped out and disposed off-site by a third-party vendor. Additionally, impacts from the project components outside the CEC's Opt-In certification would be less than significant with inclusion of staff's recommended mitigation measures, which include measures to manage stormwater pollution prevention during operation.

1.4 Cumulative Scenario

See **Appendix A** of this document for a discussion on the CEC staff's methodology of assessing cumulative impacts and a list of existing and reasonably foreseeable projects CEC staff used to analyze cumulative impacts and a figure showing their location, where possible (see **Table A-1** and **Figure A-1** in **Appendix A**).

1.5 Alternatives to the Project

CEC staff initially considered a range of potential alternatives to the Potentia-Viridi BESS, including alternative technologies, alternative sites, and a reduced capacity version of the proposed project. No project alternatives were identified that would 1) feasibly attain the key project objectives to develop an energy storage facility with a planned interconnection at the Tesla Substation; and 2) avoid or substantially lessen any of the project's significant impacts. In addition, no comments relating to the scope and content of the Alternatives analysis were presented by the public or other interested parties during or after the Informational and Environmental Scoping Meeting for the Potentia-Viridi BESS. (See **Section 2, Introduction**, of this staff assessment for information on public outreach and notification for the project.) Therefore, other than the No Project Alternative, no alternatives were identified for full analysis and comparison to the project.

CEC staff considered what would be the most likely outcome of the No Project Alternative should the Potentia-Viridi BESS fail to move forward. Under the No Project Alternative, it is assumed that the site would be developed for another renewable energy project in the foreseeable future. Although the design details of such a project are unknown, the relatively confined area that potentially could be developed means that such a project would likely be a BESS development with a similar orientation on the site and with the same or similar gen-tie development area. In CEC staff's analyses of the No Project Alternative in **Section 8, Alternatives**, CEC staff reasonably concluded that the impacts of the Potentia-Viridi BESS would be the same or similar to the impacts of another BESS facility on the site because external factors such as environmental and land use requirements and technological limitations would direct facility design and layout of a hypothetical project just as is true for the proposed project. Given the similarities of impacts between the Potentia-Viridi BESS and the No Project Alternative, CEC staff concluded that no environmentally superior alternative can reasonably be identified.

1.6 Environmental Justice

The following technical areas discuss project-related impacts on environmental justice (EJ) populations: Air Quality; Cultural and Tribal Cultural Resources; Hazards, Hazardous Materials/Waste and Wildfire; Noise and Vibration; Public Health; Solid Waste Management; Transportation; Visual Resources; and Water Resources. The project would not result in disproportionate impacts on the EJ populations represented in **Section 6, Environmental Justice, Figure 6-1** and **Table 6-2**.

1.7 Economic and Public Benefits

Public Resources Code section 25545.9(b) states there shall be a rebuttable presumption that the construction or operation of the facility will have an overall net positive economic benefit to the local government that would have had permitting authority over the site and related facility. In summary, the proposed project would contribute positive economic, environmental, and electric reliability public benefits to Alameda County, including construction jobs, increased tax revenues, local spending in the community, contributions to renewable and zero-carbon electricity generation, and reliability improvements in the statewide grid. See **Section 7, Public Benefits** for additional information on the economic, environmental, and electric reliability benefits of the project.

1.8 Areas of Known Controversy

Areas of controversy/comment topics included: impacts to biological resources, including special-status species and their habitats, cumulative impacts, impacts to aquatic resources, impacts to agricultural land and Williamson Act contracts, visual resources, and emergency readiness. Staff made a determination of significant and unavoidable impact for visual resources; therefore, staff is recommending a finding of overriding considerations for the impact.

Comments were received from local and state organizations.

1.9 Issues to Be Resolved

None.

1.10 References Cited

Cluster 13 Report – California ISO (TN 259079). Cluster 13 Phase I and Phase II Interconnection Studies for the interconnection of the proposed Project to the CAISO, PG&E Greater Bay Area Study Report, filed on Aug 1, 2024. *Confidential Report on File.*

Section 2

Introduction

2 Introduction

2.1 Energy Commission Jurisdiction and the Opt-In Certification Program

In 2022, Assembly Bill (AB) 205 established a new Opt-In Certification Program for eligible clean and renewable energy facilities to optionally seek certification through the California Energy Commission (CEC). Upon an applicant filing with the CEC, California Public Resources Code sections 25545 and 25545.1 authorize the CEC to certify or approve the construction and operation of the following facilities:

- solar photovoltaic and terrestrial wind energy power plants of 50 megawatts (MW) or more;
- energy storage facilities of 200 megawatt-hours (MWh) or more;
- thermal power plants of 50 MW or more that do not use fossil or nuclear fuels;
- the electric transmission lines from these generation and storage facilities to a point of junction with any interconnected electrical transmission system;
- facilities that manufacture or assemble clean energy or storage technologies or their components with a capital investment of at least $250 million;
- hydrogen production facilities (not derived from fossil fuel feedstock) and associated onsite storage and processing facilities; and
- geothermal power plants or projects that comprise multiple geothermal power plants on a single site.

Public Resources Code sections 25545 through 25545.13 authorize the CEC to accept applications for these facilities through June 30, 2030, and provide a streamlined process for their review and a decision by the CEC. The CEC is the "lead agency" (Pub. Resources Code, § 25545.7) under the California Environmental Quality Act (CEQA) and is required to prepare an environmental impact report (EIR), mitigated negative declaration, or negative declaration for any facility that elects to opt-in to the CEC's jurisdiction. With exceptions, including for the State Water Resources Control Board or applicable regional board, the issuance of a certificate by the CEC for an eligible facility is in lieu of any permit, certificate, or similar document required by any state, local, or regional agency, or federal agency to the extent permitted by federal law, and supersedes any applicable statute, ordinance, or regulation of any state, local, or regional agency, or federal agency to the extent permitted by federal law (Pub. Resources Code, § 25545.1).

This Staff Assessment (SA) consists of a draft EIR following the requirements of CEQA (Pub. Resources Code, § 21000 et seq.) and the CEQA Guidelines (Cal. Code Regs., tit. 14, div. 6, ch. 3) and separate discussions regarding the following statutory requirements:

1. The extent to which the applicant has complied with the recommended minimum standards of efficiency adopted under Public Resources Code section 25402(d).
2. The conformity of the facility with public safety standards and the applicable air and water quality standards, and with other applicable local, regional, state, and federal standards, ordinances, or laws.
3. The potential for restoring the site as necessary to protect the environment if the commission denies approval of the application.
4. The public benefits from the project including, but not limited to, economic benefits, environmental benefits, and electricity reliability benefits.
5. An identification of whether the site is located at a prohibited area as identified in Public Resources Code sections 25526 and 25527 and any proposed findings relevant to that location.
6. The rebuttable presumption that the construction or operation of the facility will have an overall net positive economic benefit to the local government. Economic benefits may include, but are not limited to, employment growth, housing development, infrastructure and environmental improvements, assistance to public schools and education, assistance to public safety agencies and departments, property taxes, and sales and use tax revenues. (Pub. Resources Code, § 25545.9)
7. Any legally binding and enforceable agreements by the applicant with, or that benefit, a coalition of one or more community-based organizations, such as workforce development and training organizations, labor unions, social justice advocates, community foundations, local governmental entities, California Native American tribes, or other organizations that represent community interests, where there is mutual benefit to the parties to the agreement. Concurrent with the publication of the updated Staff Assessment, the executive director shall file a recommendation on whether the commission should certify the environmental impact report and issue a certificate for construction and operation of the facility.
8. For expedited judicial review, whether the project satisfies the conditions in Chapter 6.5 (commencing with Section 21178) of Division 13, including Sections 21183 and 21183.6 of the Public Resources Code.

2.2 Purpose of the Staff Assessment

The purpose of this SA is to provide objective information regarding the project's significant effects on the environment, identify possible ways to minimize the significant effects, describe reasonable alternatives to the project, assess the project's conformance with applicable local, state, and federal laws, ordinances, regulations, and standards (LORS), and provide an evaluation of the extent to which the application complies with additional licensing requirements set forth in the Public Resources Code. This information will be considered by the CEC Commissioners in deciding whether to grant a certificate to build and operate the project. The SA is based on information from the applicant, site visits, independent staff research, consultation with other agencies,

public comment, and relevant information received during any public meetings, all of which are available through the docket as of the date of the publication of this document. Other state agencies retaining permit authority may also rely on information in this SA to inform their permitting or other approvals for this project.

The SA is circulated for agency and public review as follows: distribution through the CEQA State Clearinghouse to state agencies, direct mail to local, state and federal agencies, property owners and occupants adjacent to the project site and property owners within 1,000 feet of the project site and 500 feet of project linears, posted to the project's CEC docket, and distributed via email to those on the project's subscription list. The subscription list is an automated CEC email notification system for persons who have subscribed to this proceeding.

Following the publication of the SA, Public Resources Code Section 25545.7.6 requires a 60-day public review and comment period on the SA, as well as a requirement for a public meeting no sooner than 30 days and no later than 60 days of publication of the SA. For projects CEC staff is recommending approval, comments received during this period, and any changes to the SA, will be incorporated into an Updated Staff Assessment and presented to the CEC at a public business meeting. If the project is approved, a Notice of Determination is filed with the State Clearinghouse.

2.3 Project Components Within CEC's Opt-In Certification and Other Project Components Outside CEC's Opt-In Certification

The Potentia-Viridi Battery Energy Storage System (project) proposes the construction and operation of a battery energy storage system (BESS), consisting of the containerized batteries, the power conversion system, medium voltage collection system, three operations and maintenance buildings, a project substation/control building, and approximately 1,600 feet of 500 kilovolt (kV) overhead intertie transmission (gen-tie) line and one transmission tower structure. These primary project components, along with ancillary equipment, including fencing and roads are within the CEC's certification (i.e., licensing) authority and are considered "project components within CEC's Opt-In certification." CEC staff has analyzed these project components as required by CEQA. As necessary, CEC staff has included conditions of certification (COCs) relevant to these components, to reduce significant effects on the environment to the extent feasible or ensure conformance with LORS, as part of possible CEC certification.

Additional project components include an approximately 1,300-foot segment of the gen-tie line, two transmission structures, and related lines and conductors, a substation bay dead-end transmission structure and expansion of a 500-kV breaker-and-a-half with a new circuit breaker to be constructed and owned by Pacific Gas and Electric Company (PG&E). Since they are a part of the "whole of the action" for CEQA, CEC staff has analyzed the potential environmental impacts of these components outside the CEC's Opt-In certification and has recommended mitigation measures, if appropriate, that can

and should be adopted by the licensing authority, as necessary. The mitigation measures should be implemented by the CPUC.

2.4 Agency Coordination

CEC staff closely coordinates with other expert agencies to ensure the conditions those agencies would impose on the project if those agencies were issuing permits are incorporated into the CEC's certification.

To facilitate this coordination, CEC staff provided notification of the receipt of the Opt-In application to the California Department of Fish and Wildlife, State Water Resources Control Board, Regional Water Quality Control Board, Department of Toxic Substances Control and other state, regional and local agencies (such as Alameda County Planning Department). Notification of the receipt of the Opt-In application was also provided to the California Public Utilities Commission and California Attorney General. Consistent with California Code of Regulations, Title 14, Section 15082 and Public Resources Code Chapter 6.2, Section 25545.7.2(a), on August 29, 2025, CEC staff issued a Notice of Preparation of a Draft EIR, filing it with the Office of Land Use and Climate Innovation (formerly Office of Planning and Research) (State Clearinghouse), responsible and trustee agencies, and the county clerk.

The mailing list used to engage with stakeholder agencies can be found in **Appendix B**.

2.5 Consultation with Tribes

The CEC received a response from the Native American Heritage Commission (NAHC) to the CEC's request for an updated contact list and Sacred Lands File (SLF) search on September 9, 2024. The NAHC responded with negative results regarding the SLF. The CEC sent initial notification letters to tribes seeking those with cultural affiliation with the proposed project site on September 30, 2024. Once the Opt-In application was deemed complete, CEC staff sent letters to the California Native American tribes on August 15, 2025, followed by e-mails on September 9, 2025, consistent with the Public Resources Code, Chapter 6.2, Section 25545.7.4.

The following tribes were contacted:

- Northern Valley Yokut/Ohlone Tribe
- Amah Mutsun Tribal Band
- Confederated Villages of Lisjan Nation
- Muwekma Ohlone Tribe of the San Francisco Bay Area
- The Ohlone Indian Tribe
- Tule River Indian Tribe
- Wilton Rancheria

- Wuksachi Indian Tribe/Eshom Valley Band

On September 30, 2024, and October 3, 2024, respectively, the CEC received an email from the Confederated Villages of the Lisjan Nation and the Northern Valley Yokut Tribe requesting consultation. On October 8, 2024, the CEC responded acknowledging their requests to consult. On September 2, 2025, the CEC received an email from the Wilton Rancheria stating they do not wish to open consultation, acknowledged by the CEC in a response email on the same day. On September 22, 2025, the CEC received an email from a representative of the Muwekma Ohlone Tribe of the San Francisco Bay Area with a list of tribal contacts and services and a request the CEC update its mailing list. No other contacts were received; consultation is ongoing.

More detail on CEC staff's consultation efforts with the California Native American tribes can be found in **Section 5.4, Cultural and Tribal Cultural Resources**.

2.6 Public Outreach and Notification

2.6.1 CEC's Office of the Public Advisor, Energy Equity, and Tribal Affairs (PAO+)

The CEC's public outreach program is primarily facilitated by the CEC's Office of the Advisor, Energy Equity, and Tribal Affairs (PAO+). The PAO+ outreach consisted of email outreach to churches, community and youth organizations, schools, and a senior center. This is an ongoing process, and efforts are discussed in greater detail in **Section 6, Environmental Justice**.

2.6.2 Newspaper Notice of Receipt of Opt-In Application

To initiate public awareness of the project, a summary of the project was published in a newspaper of general circulation in the county of the project. The summary was published in Spanish in El Observador Newspaper on Friday, October 11, 2024, and English in the Alameda Times-Star also on October 11, 2024. A copy of the proof of publication was filed to the project docket (TN 259661, TN 259660).

2.6.3 Notice of Preparation

As noted above, consistent with California Code of Regulations, Title 14, Section 15082 and Public Resources Code Chapter 6.2, Section 25545.7.2(a), on August 29, 2025, CEC staff mailed a Notice of Preparation (NOP) of a Draft EIR to the trustee agency, Alameda County Clerk, and local, regional and federal agencies. The NOP was posted to the project docket on August 29, 2025 (TN 265819), and subsequently posted to the docket again on September 5, 2025. The NOP was submitted to the Office of Land Use and Climate Innovation (formally Office of Planning and Research) (State Clearinghouse).

2.6.4 Informational and Environmental Scoping Meeting

Consistent with Public Resources Code, Chapter 6.2 Section 25545.7.2, CEC staff held an Informational and Environmental Scoping Meeting on September 18, 2025, in Tracy, California and via remote access to solicit input on the application to identify the range of actions, alternatives, mitigation measures, and significant effects to be analyzed in depth in the Draft EIR (included as part of the SA). A copy of the meeting presentation was filed to the project docket (TN 266086) and the meeting transcription was filed to the project event page.

2.6.5 Notice of Availability of Draft EIR (included in SA)

As described above, CEC staff distributed a Notice of Availability (NOA) of the SA (including Draft EIR) consistent with the CEQA Guidelines (California Code of Regulations, title 14, section 15087). The SA is being circulated for review and comment by state agencies via the California State Clearinghouse and via direct mail to federal, regional and local agencies (including the county clerk), as well as organizations and individuals who have requested notification. Consistent with CEQA Guidelines section 15087, the NOA was mailed to owners and occupants contiguous to the project site and linear facilities. The NOA was also mailed to property owners within 1,000 feet of the project site and 500 feet of project linears, and to persons on the project subscription list. CEC staff also posted the NOA and the SA (that includes a Draft EIR) and associated application files and technical studies (with certain exceptions for confidential materials, e.g., known locations of sensitive cultural and/or biological resources) were posted to the project's docket for public review (https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-OPT-04).

The relevant mailing lists CEC staff used for outreach can be found in **Appendix B**.

2.6.6 Public Meeting for the Staff Assessment

CEC will host a public meeting on the Staff Assessment for the project, pursuant to Public Resources Code section 25545.7.6. The purpose of the meeting is for CEC staff to present the Staff Assessment, which includes a Draft EIR, and receive comments on the assessment from interested government agencies, California Native American Tribes, the public, and the project applicant. This meeting will be noticed and conducted as close as practicable to the proposed site, consistent with Public Resources Code, Chapter 6.2, Section 25545.7.6(a).

2.7 Organization of this Staff Assessment

The SA is prepared to conform to the requirements of CEQA, the CEQA Guidelines (California Code of Regulations, title 14, section 15000 et seq.), the Warren-Alquist Act (Public Resources Code, section 25000 et seq.), and CEC's siting regulations (California Code of Regulations, title 20, sections 1875-1881).

This SA is organized into 12 sections, as described below.

- Section 1 Executive Summary. This section provides an overview of the proposed project; and the environmental impacts that would result from the proposed project; conditions of certification identified to reduce or eliminate these impacts; project alternatives; net economic benefits to local government; areas of known controversy; and issues to be resolved.
- Section 2 Introduction. This section describes the CEC's authority and function of the SA; the environmental review process; and the organization of the SA.
- Section 3 Project Description. This section summarizes the proposed project, including the location of the site and project boundaries, characteristics of the proposed project, objectives sought by the proposed project, and intended use of this environmental document.
- Section 4 Engineering Evaluation. This section evaluates the applicant's proposed design criteria, describes the design review and construction inspection process, and establishes conditions of certification that would monitor and ensure compliance with engineering LORS and any other special design requirements. CEC staff's engineering evaluation is broken down into the following topics:
    - Facility Design
    - Facility Reliability
    - Transmission System Engineering
    - Worker Safety and Fire Protection
- Section 5 Environmental Impact Assessment. This section includes the environmental setting (existing conditions); regulatory background; approach to analysis; project-specific and cumulative impacts (**Appendix A**); and mitigation measures (referred to as conditions of certification), when appropriate to reduce potentially significant impacts to less than significant and ensure conformance with LORS. CEC staff evaluates the potential environmental impacts that might reasonably be anticipated to result from construction and operation of the proposed project. CEC staff's analysis is broken down into the following environmental resource topics derived from CEQA Appendix G (Environmental Checklist):
    - Air Quality
    - Biological Resources
    - Climate Change and Greenhouse Gas Emissions
    - Cultural and Tribal Cultural Resources
    - Efficiency and Energy Resources
    - Geology, Paleontology, and Minerals
    - Hazards, Hazardous Materials/Waste, and Wildfire
    - Land Use, Agriculture, and Forestry

  - Noise and Vibration
  - Public Health
  - Socioeconomics
  - Solid Waste Management
  - Transmission Line Safety and Nuisance
  - Transportation
  - Visual Resources
  - Water Resources
- Section 6 Environmental Justice. This section includes an analysis of how the project would potentially impact an Environmental Justice population[1].
- Section 7 Public Benefits. This section includes a discussion of any public benefits from the project including, but not limited to, economic benefits, environmental benefits, and electricity reliability benefits.
- Section 8 Alternatives. This section includes a discussion of a reasonable range of alternatives to the proposed project, or to the location of the project, which could 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 an evaluation of the comparative merits of the alternatives. This section also includes an evaluation of the no project alternative.
- Section 9 Compliance Conditions and Compliance Monitoring Plan (Compliance Plan). The Compliance Plan contains the means for ensuring all aspects of construction, operation and closure comply with LORS and with conditions/mitigations adopted by the CEC.
- Section 10 Mandatory Opt-In Requirements. This section includes a discussion of the project's conformance with the mandatory requirements for an Opt-In project.
- Section 11 Project's Inconsistency with State and Local Laws and Staff's CEQA Override Findings and Recommendation. This section includes a discussion of the significant and unavoidable impacts of the proposed project and LORS inconsistency.
- Section 12 Authors and Reviewers. This section includes a list of the authors and reviewers for this SA.

1 Within this analysis, an environmental justice population of concern is identified when the minority population of the potentially affected area (i.e., Census tract) is greater than 50 percent, or when the percentage of low-income population of the potentially affected area (i.e., block group or Census tract) is equal to or greater than the low-income population of the greater geography (i.e., the County).

Section 3

Project Description

3 Project Description

Levy Alameda, LLC (applicant), a wholly owned subsidiary of Renew Development HoldCo, LLC proposes to construct, operate, and eventually repower or decommission the 400-megawatt (MW), 3,200 MW-hour (MWh) Potentia-Viridi Battery Energy Storage System (BESS) (project) on a 70-acre leased portion of approximately 102 acres in eastern Alameda County. Of the leased area, approximately 58.8 acres would be permanently disturbed for development of the BESS facility. Of the 32 acres evaluated for the overhead, generation intertie (gen-tie) line study area, 1.9 acres are expected to be permanently disturbed for installation of the transmission and interconnecting facilities, with 6.7 acres temporary disturbance, yielding a total of 60.7 acres within the approximately 102-acre project area to be permanently disturbed as part of project implementation.

The proposed project includes components within the CEC's Opt-In certification and components not included or outside the CEC's Opt-In certification. Primary components of the BESS facility that are under the CEC's jurisdiction for Opt-In certification include the BESS enclosures, the power conversion system, medium voltage collection system, operations and maintenance (O&M) buildings, and a project substation/control building. The project would draw electricity from the power grid to charge and store electrical energy and discharge back to the power grid when the stored energy is needed.

The project would be remotely operated and monitored year-round and be available to receive or deliver energy 24-hours a day and 365-days a year. During the operational life of the project, qualified technicians would routinely inspect the project facilities and conduct necessary maintenance to ensure reliable and safe operational readiness.

Project elements under CEC jurisdiction for Opt-In certification, in addition to the primary components stated above, include the following:

- Laydown yards
- Stormwater facilities and outfall
- Site Security and fencing, including fire detection systems
- Access roads
- Transmission facilities
    - 500 kV gen-tie line (approximately 1,600 feet), with one transmission tower structure (constituting the point of interconnection) and conductors
    - Fiber optic telecommunication utility poles and fiber optic lines
    - Access paths
    - Temporary work areas

Components of the proposed project not included in the CEC's Opt-In certification include an approximately 1,300-foot segment of the gen-tie line, transmission tower structures and related lines and conductors, a substation bay dead-end transmission structure and expansion of a 500 kV breaker-and-a-half with a new circuit breaker, to be constructed and owned by Pacific Gas and Electric Company (PG&E).

3.1 Project Title

Potentia-Viridi Battery Energy Storage System (BESS) (project)

3.2 Lead Agency Name and Address

California Energy Commission
715 P Street
Sacramento, California 95814

3.3 Lead Agency Contact Person and Phone Number

Eric Veerkamp, Project Manager
Siting, Transmission and Environmental Protection Division
California Energy Commission
916-661-8458

3.4 Project Location

The site of the proposed project would be in Alameda County, California, within a portion of Assessor Parcel Number (APN) 99B-7890-002-04, at 17257 Patterson Pass Road, southwest of Interstate 580 and Interstate 205. Development of the BESS facility would be within a 70-acre leased area of Assessor Parcel Number (APN) 99B-7890-002-04, which currently consists of fallowed annual grasslands suitable for grazing. Of the approximately 70-acre lease area, approximately 58.8 acres would be permanently disturbed for development of the BESS facility. The gen-tie line would extend southeast from the project substation, crossing Patterson Pass Road, and then proceed east to the Point of Interconnection (POI) at the Tesla Substation, approximately 500 feet east of the project site (an approximately 2,500-foot run). The project's gen-tie line would be sited on APNs 99B-7890-2-4, 99B-7890-2-6, and 99B-7885-12.

Land uses in the immediate vicinity of the project include undeveloped rural agricultural lands, multiple high-voltage transmission lines and electrical substations, rural roads, and railroad lines. The nearest municipality to the project site is the city of Tracy approximately 2.5 miles to the northeast. There are a few single-family residences near the Tesla Substation's southern and eastern boundaries. The nearest residence is about 1,500 feet southeast of the project site and 560 feet south of the proposed gen-tie line; it is owned by the same landowner leasing the lands for the project.

The project location was selected because the site is large enough to support development of the project, and because of its close proximity to existing electrical

infrastructure and the Tesla Substation, thereby minimizing length of the proposed gen-tie line to the POI, and because it is immediately adjacent to existing roadways for construction and O&M access. **Figure 3-1** shows the regional location, **Figure 3-2** identifies the project vicinity, and **Figure 3-3** shows the proposed project in relationship to the Tesla Substation and the combined point of change of ownership (POCO) and POI.

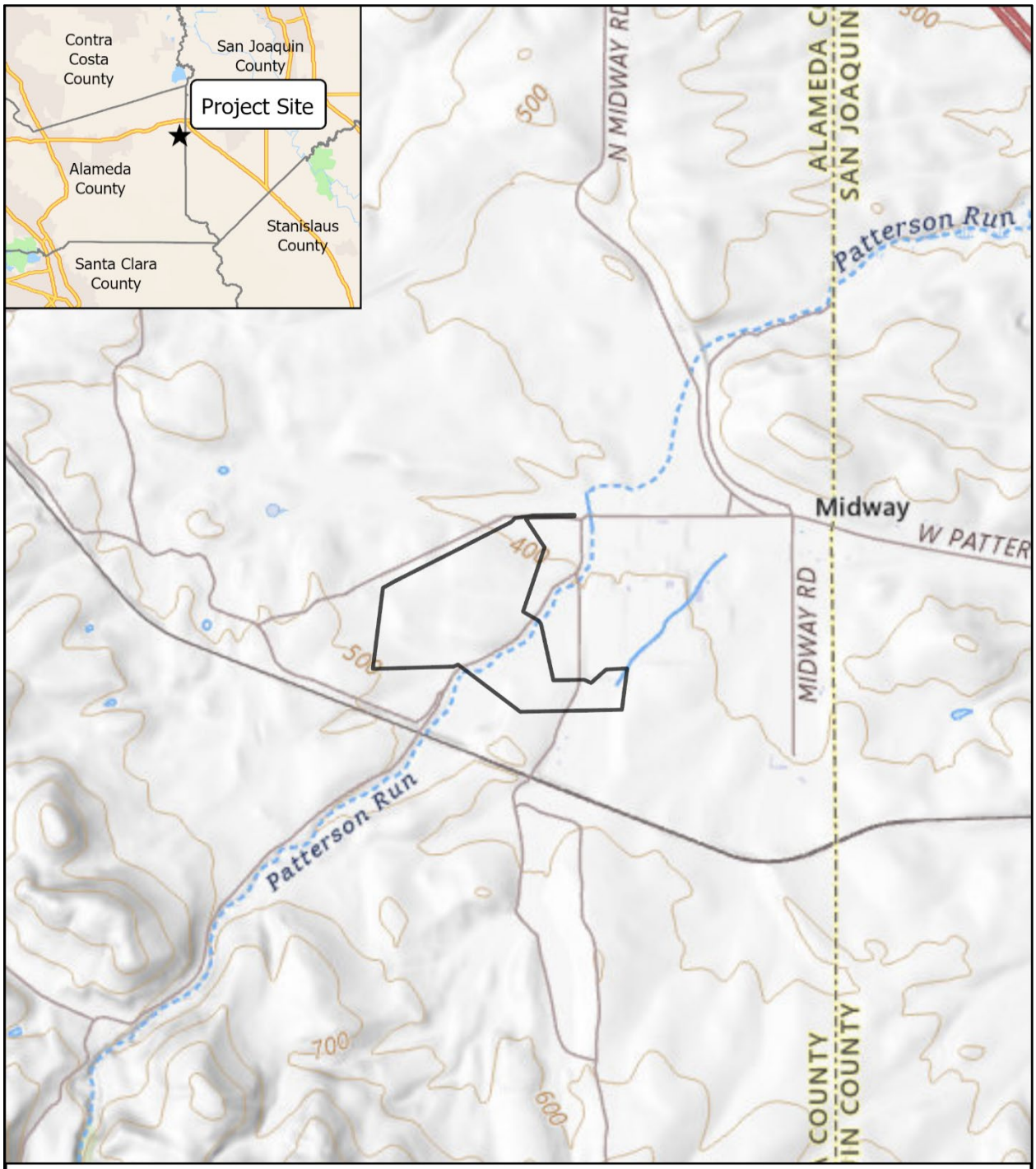

Contra Costa County
San Joaquin County
Project Site
Alameda County
Stanislaus County
Santa Clara County
N MIDWAY RD
ALAMEDA C
SAN JOAQUIN
Patterson Run
Midway
W PATTER
MIDWAY RD
Patterson Run
500
400
700
600
Project Boundary
Figure 3-1 Regional Map
0
0.25
0.5
Miles
Sources:
TN261401_Applicant_DR Response 2



Figure 3-2 Project Vicinity



Figure 3-3 Project Site and Gen-tie Line

3.5 Existing Conditions

The proposed project setting in the unincorporated area of eastern Alameda County, California encompasses approximately 418 square miles of rural, unincorporated eastern Alameda County. The nearest cities include Dublin, Livermore, Pleasanton, and a portion of Hayward. The East County is part of the Tri-Valley subregion which includes incorporated and unincorporated areas of Contra Costa County including Danville, San Ramon, Blackhawk/Alamo, and Dougherty and Tassajara Valleys. In a regional context, the East County is situated between the denser urban areas surrounding the San Francisco Bay and the rapidly urbanizing Central Valley east of Altamont Pass in San Joaquin County (including Tracy) (Online reference, https://data.acgov.org/).

The proposed site currently consists of rolling hills of fallowed annual grasslands suitable for grazing. The arrangement of components on the proposed project site would be as illustrated on the aerial perspective as shown on **Figure 3-3**. The gen-tie line would extend southeast from the project substation (located within the BESS facility site), crossing Patterson Pass Rd, and then proceed east to the POI to the transmission grid at the Tesla Substation. There are a few single-family residences near the Tesla Substation's southern and eastern boundaries. The nearest residence is about 1,500 feet southeast of the project site and 560 feet south of the proposed gen-tie line; it is owned by the same landowner leasing the lands for the project.

3.6 Project Objectives

The primary purpose of the project would be to assist the State of California in meeting its goal of reducing statewide annual greenhouse gas emissions from the electric sector to 25 million metric tons by 2035. The project would help balance electricity generation from renewable sources, such as wind and solar, with electricity demand by storing excess generation from emissions free power sources and delivering it back to the grid when demand exceeds real-time generation supply. The project would displace the need for additional fossil fuel-based generating stations needed to serve peak demand periods when renewable sources may be inadequate or unavailable. The applicant has identified the following additional project objectives for the battery storage facility:

- Construct and operate an economically viable, and commercially financeable, 400-MW battery energy storage facility in Alameda County with an interconnection at the Tesla Substation.
- Assist California electric utilities in meeting obligations under California's Renewable Portfolio Standard Program and Senate Bills 100 and 1020, which require renewable energy sources and zero-carbon resources to supply 60 percent of all retail sales of electricity to California end-use customers by December 31, 2030, 90 percent of all retail sales of electricity to California end-use customers by December 31, 2035, 95 percent of all retail sales of electricity to California end-use customers by December 31, 2040, and 100 percent of all retail sales of electricity to California end-use customers by December 31, 2045.

- Assist California utilities in meeting obligations under the CPUC's Mid-Term Reliability Procurement Requirements.
- Develop an electricity storage facility close to a utility grid-connected substation with existing capacity available for interconnection to minimize environmental impacts.
- Relieve grid congestion, and enhance electricity reliability, without requiring the construction of new regional transmission infrastructure or substantial network upgrades.
- Construct and operate a battery energy storage facility in Alameda County, resulting in economic benefits to the county, creating prevailing wage construction jobs, and facilitating local community benefits.

3.7 Facility Description and Design

The BESS equipment and support systems would include construction, O&M, and eventual decommissioning of the BESS, having the ability to charge from or discharge to the electrical grid. The BESS facility would include the following components/equipment:

3.7.1 Battery Energy Storage System (BESS)

The modular and containerized BESS enclosures would be prefabricated off-site and arrive at the site ready to be installed and commissioned. Each modular BESS enclosure would include battery packs on racks, a battery management system (BMS), fire protection, and ancillary power electronics within a specialized steel-framed, non-occupiable container. The BESS enclosures would approximate 10-feet high, and may have a heating, ventilation, and air conditioning (HVAC) system for optimal performance and safety. Power for the HVAC system, lighting, and other electrical systems would be provided through separate auxiliary power connection to the on-site project substation with connection lines installed above and/or below ground.

One of the most common battery cell technologies available is lithium iron phosphate (LFP). LFP technology is considered one of the safest, most efficient, and commercially financeable energy storage technologies available on the market (Dudek 2025d). The initial project concept has been developed with an LFP technology in mind; however, due to the continuous improvement of these energy storage systems, a specific manufacturer and model is undetermined at the time of this writing. Although the number and dimensions of the containers vary between technologies (as it does between LFP technology providers), CEC staff expects potential environmental impacts that would result would be similar, or less than, those analyzed based on LFP technology.

3.7.2 Power Conversion System

A power conversion system (PCS) is a packaged and integrated system consisting of a bi-directional inverter, medium voltage (MV) transformers, protection equipment, direct

current (DC) and alternating current (AC) circuit breakers, harmonic filters, equipment terminals, and a connection cabling system. A PCS functions to both convert between DC/AC and change the voltage level from the MV collection voltage to the voltage output of the BESS enclosures.

The PCS would convert electric energy from AC to DC when the energy is transferred from the grid to the battery, and from DC to AC when the energy is transferred from the battery to the grid. Each PCS would also include transformers that convert the AC side output of the inverter between low and medium AC voltage to increase the overall efficiency of the BESS. Inverters within the PCS units would be unattended systems designed to operate in all conditions. The inverters would be monitored and controlled remotely, and there would be on-site disconnects for use in case of an emergency or a situation requiring unscheduled maintenance.

PCS units would be installed on concrete foundations and connected to multiple BESS enclosures with wiring and cables installed underground. All outside electrical equipment would be housed in the appropriate National Electrical Manufacturers Association (NEMA) rated enclosures.

3.7.3 Medium Voltage (MV) Collection System

The MV collection system would include multiple components that connect the PCS units to the project substation including underground conductor circuits, switchboards, switchgear, and panels at 34.5kV voltage. The conductors for the MV collection system would be installed underground during construction using trenching.

3.7.4 Project Substation, Control Building, and Telecommunications facilities

The project substation would include three main power transformers (MPTs) – two active and a live spare. When the BESS facility is charging, power from the regional electric transmission grid would be stepped down from 500kV to 34.5kV and sent from the project substation through the MV collection system and PCS units into the battery packs within the BESS enclosures. When the BESS facility is discharging, power from the battery packs within the BESS enclosures would be sent to the PCS units, stepped up to 34.5kV, and transported to the project substation through the MV collection system before being stepped up to 500kV at the MPTs and delivered back to the regional electric transmission grid. The project substation area would also include a wireless communication tower mounted with an antenna up to 15 feet in diameter for external telecommunications.

A prefabricated control building would be installed within the project substation area and contain an energy management system, metering, and telecommunication equipment for communication with PG&E/California Independent System Operator (California ISO) facilities and to support full-time operations monitoring and remote project operations monitoring.

Between the control building within the project substation area and the POCO structure, the applicant would install the two fiber optic lines above ground on separate utility structures within the transmission corridor. One route would be installed near the northern boundary of the transmission corridor and the other would be installed near the southern boundary of the transmission corridor. At the POCO structure, each of the fiber optic cables would be brought down to an underground pull box, and from there continued underground to the Tesla Substation. A microwave antenna installed on a communications tower within the project substation area, along with an optical ground wire, either above or underground may be used in lieu of a second set of utility poles, if feasible.

3.7.5 Transmission and Interconnection

The project will interconnect to the regional electrical transmission grid through a new, approximately 2,884-foot-long, single-circuit 500kV gen-tie within a 200-foot-wide corridor, utilizing three different types of transmission structures, including an Arizona crossing of Patterson Run (ephemeral stream). The route would extend southeast from the project substation, crossing Patterson Pass Road overhead until reaching the PG&E Tesla Substation. The applicant will construct and own the gen-tie segment from the project substation to the POCO, while PG&E will construct and own the remaining segment from the POCO to the POI within the Tesla Substation. The transmission and interconnection facilities will include the 500kV gen-tie line with associated transmission structures and conductors, fiber optic telecommunications poles and lines, access paths, temporary work areas, and interconnection infrastructure within the existing Tesla Substation footprint. The proposed route was strategically selected to minimize utility crossings, reduce the overall gen-tie length and number of required structures, and enter the Tesla Substation as close as possible to the POI, while avoiding potential environmental impacts. No parks, recreational, or scenic areas are within one mile of the proposed route. Visual simulations of the gen-tie route before and after construction are included in **Section 5.15, Visual Resources**, of this document.

3.8 Ancillary Features and Equipment

Ancillary features of the project include support systems, infrastructure, and management apparatus during and throughout construction and operations.

3.8.1 Access Roads

The project's roadway system would include two new facility access roads and driveways, a perimeter road, and internal access roads, the Northern Access Road and the Southeast Emergency Access Road. The Northern Access Road would be constructed from an existing private road near the northeastern portion of the site and would serve as the primary access to the site. The Southeast Emergency Access Road would be constructed from Patterson Pass Road near the southeastern portion of the site and would be used for emergency access only. The majority of project traffic would not be expected to travel along the unimproved stretches of Patterson Pass Road. The

driveway apron of the Southeast Emergency Access Road would be expanded to allow vehicles space to decelerate off the main road and to provide additional visibility for exiting vehicles to enter onto Patterson Pass Road. In addition, this emergency entrance road has been designed according to the Engineering Design Guidelines for unincorporated Alameda County to provide 100 feet of straight driveway perpendicular to the centerline of Patterson Pass Road. The grade has been adjusted to provide a maximum six percent grade for 50 feet from the road edge.

A project substation access road would be constructed outside of the perimeter fence, connecting the northeast and southwest driveways, to facilitate project substation access by third parties during operations. All new access roads, driveways, internal and perimeter roads would be bladed, compacted, and surfaced with aggregate. All internal roadways and private driveways would be constructed to meet access requirements for construction, O&M, and emergency response requirements.

3.8.2 Laydown Yards/Storage Area

The project would include up to four laydown yards for equipment and material staging and storage during construction, and for worker parking during construction. The primary laydown yard would be directly adjacent to the project substation area on the east. The primary laydown yards would be cleared of vegetation, bladed, compacted, and surfaced with aggregate, while additional laydown yards would be cleared of vegetation and surfaced with aggregate or other soil stabilizing materials. Portions of additional laydown yards may also be graded, if necessary. Landscape fabric may also be installed under the surface of all laydown yards to prevent vegetation growth, if required to comply with fire prevention standards. The O&M building and required number of parking spaces for O&M staff would be constructed within the primary laydown following construction of the BESS facility components.

If the BESS technology ultimately procured prior to construction requires larger BESS yards to accommodate BESS enclosures with larger dimensions, a greater number of BESS enclosures, or greater spacing requirements to comply with regulations, portions of the additional laydown yards may be used to accommodate larger BESS yards than those currently proposed.

3.8.3 Stormwater Facilities

Stormwater generated on-site would flow southwest to northeast to be captured in a detention basin on the northeast end of the BESS site, and southward to a detention basin parallel to Patterson Pass Road (total size of all detention basins to approximate nine acres). Additional detention basins would be around the perimeter of the site to capture stormwater runoff from side slopes to stormwater detention basins along the periphery of the BESS facility site. The stormwater treatment and storage sizing would be designed to hold the anticipated runoff from a 100-year, 24-hour storm event in compliance with applicable regulations. If stormwater basins were to reach capacity, stormwater would be discharged from the detention basins via storm drainpipes and

sheet flow at rates no greater than pre-development conditions following natural drainage patterns.

A stormwater drainage outfall (approximately .6 acres) utilizing a new 36-inch corrugated metal pipe or bioswale/ditch would be constructed from one or more of the detention basins in the southwest portion of the site to the inlet of a new or existing culvert on the north side of Patterson Pass Road. Approximately 10 cubic yards of clean riprap would be placed as an energy dissipator at the outfall to discharge clean stormwater at or below current rates at the elevation of the ordinary high-water mark of the existing drainage on the south side of Patterson Pass Road. (Dudek 2025d, pp. 7-9

3.8.4 Operations and Maintenance Buildings

Following construction of the BESS facility, three O&M buildings would be constructed a minimum of 20 feet apart within the primary laydown yard. The main O&M building would include basic offices, meeting rooms, and washroom facilities. A 10,000-gallon above ground potable water storage tank would provide water for washroom and sanitary facilities, and sewage/wastewater would be collected in two separate 5,000 gallon below ground sewer holding tanks. Potable water would be trucked to the water storage tank periodically during O&M, and sewage/wastewater would be pumped from the storage tank, transported offsite via truck, and disposed of at a sanitary dump station, as needed, during operations. The remaining two O&M buildings would be used primarily for storage, maintenance and repair activities associated with the project. Neither of these buildings would have washroom facilities. The facility would also provide a 30,000 gallon above-ground fire water storage tank. All O&M buildings would be powered via a distribution line from the project substation.

3.9 Construction/Installation

This section describes in detail the approximate construction schedule and workforce, construction activities, estimated water use, commissioning, and materials handling proposed by the project.

3.9.1 Schedule and Workforce

The project is anticipated to be built over an approximately 18-month period from the onset of site preparation activities through energization. Following energization, testing and commissioning would take place over six months. Initial mobilization and site preparation is anticipated to begin no later than Q4 2026 and testing and commissioning is anticipated to conclude no later than Q2 2028. It is anticipated that construction crews would work eight to 10 hours per day, Monday through Friday. Overtime, night work, and weekend work would be used only as necessary to meet the project schedule or complete time-sensitive or safety critical work. All work schedules would comply with applicable California labor laws, county regulations, and the Project Labor Agreement. Estimated durations of construction activities are presented in **Table**

3-1. Weather, unanticipated site conditions, the supply chain, and coordination between the different activities may affect the duration of each activity.

During construction activities, multiple crews would be working on the site with various equipment and vehicles. The total number of construction workers (consisting of laborers, craftsmen, supervisory personnel, support personnel, and construction management personnel) would range from approximately 5 to 200 workers, depending on the phase of construction.

TABLE 3-1 CONSTRUCTION WORKERS BY PHASE

Construction Activity	Estimated Duration	Average Workforce (Employees)
Site Preparation	8 weeks	25
Civil Work and Grading	24 weeks	55
Foundations and Underground Equipment	16 weeks	50
BESS Equipment Installation	20 weeks	60
Project Substation Installation	32 weeks	20
Gen-Tie Foundations and Structure Erection	8 weeks	10
Gen-Tie Line Stringing and Pulling	2 weeks	10
Testing and Commissioning	22 weeks	10
PG&E Interconnection Facility Upgrades (within Tesla Substation)	26 weeks	10

The following sections describe the construction methods and activities for the major project components.

3.9.2 Site Preparation

Following environmental clearance surveys, the limits of construction disturbance areas delineated in the final approved engineering design packages would be surveyed and staked. Initial ground disturbing activities in preparation for construction would include installation of erosion and sediment control measures prior to start of major earthworks activities. Rough grading and grubbing/vegetation removal would be performed where required to accommodate site drainage and allow construction equipment to access the site. Detention basins and stormwater facilities would be created for hydrologic control. All applicable governmental requirements and Best Management Practices (BMPs) would be incorporated into the construction activities for the project site, including the guidelines provided in the California Stormwater Quality Association's Construction BMP Handbook (CASQA 2019), as well as a soil erosion and sedimentation control plan to reduce potential impacts related to construction of the proposed project.

Vegetation on the site would be removed where necessary to ensure the BESS facility is free from combustible vegetation to allow for fire protection and defensible space, except root mass outside the perimeter (for soil stabilization), where appropriate. Where feasible, in compliance with fire protection requirements, vegetation root mass within appropriate portions of the BESS facility lease area on the outside of the perimeter and substation access roads would be left in place for soil stabilization. All

areas within the maximum anticipated grading limits of the BESS facility would be permanently disturbed. Daily worker trips during this stage are expected to average 50.

3.9.3 Site Grading and Civil Work

Grading and civil work, including excavation, would commence following site preparation. Preliminary designs conservatively assume that grading would include up to approximately 588,018 cubic yards (cy) of cut and up to approximately 344,900 cy of fill, resulting in up to approximately 243,118 cy of export material. Where appropriate, excess material would be processed in one or more different types of rock crushing equipment depending on the requirements of the various potential beneficial uses onsite for construction of berms, etc.

Conventional grading would be performed throughout the project site, but minimized where possible to reduce unnecessary soil movement that may result in dust. Land-leveling equipment, such as a smooth steel drum roller, would be used to even the ground surface and compact the upper layer of soil to a value recommended by a geotechnical engineer for structural support. Following major civil work within the BESS facility site, site access roads and driveways, the perimeter and substation access roads, and interior roadways to access the laydown areas and BESS yards would be graded, compacted, and surfaced with gravel or aggregate. Following application of Class II road base to the roadways, the project perimeter fence and access gates would be constructed. Daily worker trips during this stage are expected to average 110.

3.9.4 BESS and Substation Installation

A grounding grid (typically copper) and underground conduit would be installed below grade beneath the project substation area and BESS components. After installation of the grounding grid, the area would be backfilled, compacted, and leveled followed by application of an aggregate rock base. A containment area within the MPT foundations would be sized to hold the full volume of oil within the MPTs. The MPT foundations within the substation area are anticipated to be concrete slab foundations poured into excavations up to 10 feet deep. Foundations for the control building, static masts, other aboveground substation equipment, O&M building, BESS enclosures, PCS units, DC/DC converters, and BESS auxiliary transformers and panels are anticipated to be pile foundations embedded up to 40 feet below ground level. Depending on soil conditions, the piles may be drilled or driven and set with a slurry. However, some of these project components may be installed on concrete slab foundations depending on the geotechnical conditions at the final locations.

Additional underground work would include trenching for the placement of underground electrical and communications lines, including the MV collection system, AC and DC cables, and fire alarm cable. The wires would either be installed in conduit, cable-trays, or direct-buried, depending upon final design and application.

Where possible, major equipment would be delivered directly to its permanent location and offloaded directly into place with a crane or heavy equipment. Where staging or sequencing does not allow, equipment would be stored at one of the laydown areas near its permanent location and installed later. Major aboveground equipment would be the MPTs and other project substation components, control building, BESS enclosures, PCS units, DC/DC converters, BESS auxiliary transformers and panels, and O&M buildings.

Electrical work would include installing cables, terminations, and splices. Electrical wiring would be installed underground, at-grade, and above ground, depending on the application and location. The wires would either be installed in conduit, cable-trays, or direct-buried, depending upon final design and application. Power during construction would be provided by a combination of generators and a tap to existing power lines.

3.9.5 Gen-tie Construction

Structure Erection

Prior to construction, environmental clearance surveys would be conducted within the gen-tie corridor. The gen-tie centerline, corridor boundaries, and access paths would be flagged, and erosion control measures installed. Work areas would be prepared with minimal vegetation removal and, where needed, access paths would be graded and graveled. Transmission structures would be installed on cast-in-place concrete foundations using cranes, while fiber optic poles would be direct-embedded in drilled holes and backfilled with soil or concrete. Construction activities may occur within the 200-foot corridor and up to 50 feet beyond, with spoil material spread on-site.

Gen-tie Stringing and Pulling

Conductor installation for the gen-tie line would be completed using heavy-duty trucks and a telescoping boom lift. Conductors would be pulled one segment at a time using truck-mounted pulling and tensioning equipment positioned at the start and end of each segment. Once pulled through, conductors would be attached to insulators and tensioned to maintain a minimum ground clearance of 30 feet. Equipment would then be repositioned for the next segment. Three primary tensioning and pulling sites are anticipated: one within the BESS facility near the first angled dead-end structure, one at the POCO structure, and one near the Tesla Substation fence line. These sites may experience greater vegetation removal and soil compaction and are therefore identified as temporary disturbance areas to be revegetated following construction.

PG&E-Owned Gen-Tie Segment and Interconnection Facilities at the Tesla Substation

The CEC licensing authority for the project would extend to the POCO/POI, the determined junction with an interconnected electrical transmission system (see **Figure 3-3**). Pursuant to the permit process under CPUC jurisdiction (CPUC GO 131-E), and not included in CEC's Opt-In certification, PG&E would construct, own, and maintain the

segment of the gen-tie line between the POCO/POI at the transmission tower, as well as the fiber optic routes between the POCO/POI and PG&E's control building. The applicant would install fiber optic cables up to the POCO/POI, where PG&E would continue installation through underground conduit placed in trenches approximately three feet wide. Redundant fiber routes would be spaced at least 10 feet apart to meet PG&E's diverse path requirements. Trenching is expected to occur within the access road to the angled dead-end structure, though final routing may utilize existing roadways or other disturbed areas near the substation perimeter.

Within the Tesla Substation footprint, PG&E would complete interconnection upgrades, including installation of a new dead-end transmission structure and expansion of the existing 500kV bay with a new circuit breaker. Additional work may involve relocation or modification of existing infrastructure. There is a possibility of a nominal amount of additional disturbance associated with PG&E's interconnection activities.

3.9.6 Construction Water Use

During construction, an estimated 16,000,000 million gallons (~49.1 acre-feet) of untreated water would be required for common construction-related purposes, including but not limited to dust suppression, soil compaction, and grading. A sanitary water supply line would not be required during construction because restroom facilities would be portable units, serviced by licensed providers, and water and sewage from the restroom facilities would be stored in onsite tanks and serviced by trucks. Drinking water would be provided via portable water coolers. Construction water is anticipated to be purchased from a local water purveyor and trucked to the site.

3.9.7 Solid and Non-Hazardous Waste, Construction

During construction the proposed project would produce a small amount of solid waste from construction activities. This may include paper, wood, glass, plastics from packing material, waste lumber, insulation, scrap metal and concrete, empty nonhazardous containers, and vegetation waste. This waste would be segregated, where practical, for recycling. Non-recyclable waste would be placed in covered dumpsters and removed on a regular basis by a certified waste-handling contractor for disposal at a Class III (non-hazardous waste) landfill.

3.9.8 Hazardous Material and Hazardous Waste, Construction

Construction of the proposed project would involve the use of hazardous materials typical of similar infrastructure projects, including small quantities of fuels, oils, lubricants, solvents, paints, degreasers, herbicides, and welding supplies. A Hazardous Materials Business Plan (HMBP) would be prepared prior to construction, detailing the types of materials used, their transport methods, and safety protocols. Material Safety Data Sheets (MSDS) would be maintained on-site and accessible to personnel. Small quantities of hazardous waste—such as waste paint, solvents, cleaners, oil, oily rags, batteries, and welding residues—may be generated during construction. All hazardous

waste would be properly identified, handled by trained personnel, and either recycled or disposed of at licensed facilities in compliance with applicable regulations. Off-site transport of hazardous waste would be conducted by licensed haulers.

3.9.9 Commissioning

As part of project construction activities, and after installation, equipment will be tested and commissioned. Commissioning work will be completed by qualified personnel, and in accordance with various codes, standards and specifications. Performance testing will also be completed to ensure charge and discharge performance of the systems as designed and in accordance with the utility requirements. Commissioning will include testing of mechanical, electrical, fire protection, and other systems at substantial completion. Systems to be commissioned and tested include (but are not limited to) BESS enclosures, PCS units auxiliary service transformers, MV collection system, DC cables, Supervisory Control and Data Acquisition (SCADA) systems, power backup systems, and fire protection system. Full details of the commissioning activities will be made available in a commissioning plan, prepared by the BESS supplier and construction contractor and reviewed by the Engineer of Record (EOR), as part of the construction documentation package.

3.10 Operations (Including Maintenance)

Once constructed, the project would operate year-round, seven days a week. Operations would be remotely monitored through a SCADA system by the original equipment manufacturer or an affiliated company, with support from approximately 18 full-time on-site operations staff. Routine onsite maintenance would include replacement of inverter modules, filters, and minor electrical repairs. O&M staff would also periodically visit the project substation for switching and other operational tasks. Maintenance activities would be supported by trucks and equipment used for inspections, testing, and preventative maintenance, with one major inspection anticipated annually.

Over the project's estimated 35-year operational life, battery capacity would be maintained through periodic augmentation. As utility-scale batteries degrade over time, additional battery units and related equipment would be installed within the existing project footprint to preserve the project's nominal 3,200 MWh capacity at the POI. The project would initially include up to 3,600 MWh of installed capacity, with up to 8,100 MWh of augmented capacity added over time. Augmentation activities would involve new foundations, BESS equipment installation, and electrical work. For environmental analysis purposes, it is conservatively assumed that all initial and augmentation equipment would be constructed at the same time.

3.10.1 Solid and Non-Hazardous Waste (Operational)

The project would produce a small amount of waste associated with maintenance activities, which could include broken and rusted metal, defective or malfunctioning

electrical materials, empty containers, and other miscellaneous solid waste, including typical refuse generated by workers. Most of these materials would be collected and delivered back to the manufacturer or to recyclers. Non-recyclable waste would be placed in covered dumpsters and removed on a regular basis by a certified waste-handling contractor for disposal at a Class III landfill.

3.10.2 Hazardous Material and Hazardous Waste (Operational)

Limited amounts of hazardous materials would be stored or used on the site during operations, including diesel fuel, gasoline, and motor oil for vehicles; mineral oil to be sealed within the transformers; and lead-acid-based batteries for emergency backup. Appropriate spill containment and cleanup kits would be maintained during operation of the project. A spill prevention control and countermeasures plan would be developed for site operations.

Fuels and lubricants used in operations would be subject to the spill prevention control and countermeasures plan to be prepared for the proposed project. Hazardous waste, if generated during operations, would be subject to the disposal and hazardous waste management plan to be prepared for the proposed project.

3.11 Plant Safety and Risk Reduction Systems

3.11.1 Medical Emergency

In case of medical emergency, employees would congregate at designated muster points, to be determined or as directed by the emergency response coordinator (ERC). Employees would be trained in the location and use of emergency equipment, including first-aid kits and automatic external defibrillators (AED's), as well as fire extinguishers, stored at clearly marked locations. The nearest medical facility to the Potentia-Viridi project site is at the following address:

Sutter Tracy Community Hospital
1420 N Tracy Boulevard
Tracy, CA 95376
209.835.1500

3.11.2 Fire and Explosion Hazard

Faults, mechanical damage, or manufacturing defects in lithium-ion batteries can cause thermal runaway, which can lead to fires or other hazards. Should a thermal runaway event occur, the BESS enclosures are designed and constructed in such a way that fire would not propagate from one enclosure to a neighboring enclosure.

Fire protection would include multiple fire detection systems on-site and within the individual BESS enclosures. An infrared camera system would be installed throughout the BESS facility to achieve 100% of electrical infrastructure and trigger an alarm in case of an onsite fire. Each BESS enclosure would have a fire rating in conformance

with the California Fire Code 2022. In addition, each BESS enclosure would contain an onboard BMS that monitors the appropriate state of individual battery cells and relays continuous information. In the event of an anomaly, the system is designed to shut down and mitigate the hazard.

Two emergency generators would be installed near the project substation to provide supplemental power in the event of a long-term power outage at the project site. The emergency generators would allow the fans within the BESS enclosures to continue running for a minimum of 24 hours to allow air circulation within the enclosures.

3.11.3 Fire External to the Battery Container/Enclosure (including wildfire and lightning)

The project site is in a High Fire Hazard Severity Zone (FHSZ) and is surrounded by fallow annual grassland, which is highly flammable and prone to rapid fire spread, particularly during the fire season from April to October. Wildfires may be caused by natural events such as lightning or by human activities, including construction-related sparks or idling vehicles. To reduce risk, fire breaks should be established between work areas and surrounding vegetation. When working near or within vegetated areas, personnel should have immediate access to fire suppression tools such as a shovel, a fire extinguisher, and at least five gallons of water. Catalytic converters on vehicles and equipment should be regularly inspected and cleared of debris, and welding operations should only be conducted in areas that are free or mostly free of vegetation. Any signs of wildfire must be reported immediately to the ERC. The project substation area would include five static masts for lightning protection.

The ERC is responsible for monitoring local emergency alerts, assessing wind direction, as well as the possibility of severe weather that could result in lightning, and issuing evacuation instructions as needed. All personnel must be prepared to evacuate immediately upon instruction from the ERC or local authorities. If evacuation is not possible and personnel become trapped, they should call 9-1-1 and provide their location, keeping in mind that emergency response may be delayed. If in a vehicle, headlights should be turned on to assist rescuers in locating them. To protect against smoke inhalation, personnel should use an N95 mask or other respirator; if unavailable, a handkerchief or other fabric may be used as a temporary measure. In the case of severe weather, if escape is not possible, personnel should remain in rubber-tired vehicles; reentry to the site is not permitted until the ERC confirms that it is safe to return.

3.11.4 Facility Security

Terrorist Threats, incl. Bomb and Chemical/Biological Agent

General safe practices are in place in the event Potentia-Viridi BESS is a target of an actual or threatened bomb or a chemical/biological assault/attack.

- Treat the caller with courtesy and respect while attempting to obtain as much information as possible. Complete a bomb threat report and use the sheet as a reference in dealing with the situation.
- Immediately notify the designated emergency coordinator by phone and 911 emergency services. Stop all radio transmissions until cleared by the emergency coordinator or other competent authority.
- Evaluate the threat and determine the appropriate course of action to take.
- Notify law enforcement and/or ambulance.
- Evacuate the facility as necessary.
- Coordinate evacuation of any part of the surrounding community with local authorities as needed.
- Coordinate search of the site with proper authorities.

If any suspicious items are found, they are not to be touched. Barrier tape will be used to mark the areas where the suspicious item(s) are by extending a continuous line of tape from the item to the main entrance to assist response personnel in finding the item. The ERC will sound the all-clear once the threat has passed or is no longer present.

Sabotage and Vandalism

Anyone detecting any act or threat of any act of sabotage or vandalism would immediately notify the ERC. The emergency coordinator would evaluate the situation and decide what actions to take, including, but not limited to notifying the appropriate authorities, including dialing 911, taking corrective action as necessary, and evacuating the facility.

Active Shooter

More specific and detailed instructions are found in the project application materials, but while prioritizing life safety, in an active shooter situation, the guidelines prioritize escaping if possible, leaving belongings behind and calling 911 when safe; if escape isn't an option, hide silently and securely, or fight as a last resort using improvised weapons. When law enforcement arrives, stay calm, keep hands visible, follow all instructions, and avoid sudden movements or shouting (AMLGMN 2024j).

3.11.5 Fencing and Site Lighting

An eight-foot-tall chain link fence topped with one-foot of three-strand barbed wire or razor wire would surround the site, installed on the outside of the perimeter road. An additional fence with the same specifications would be installed around the project substation area. The fences would be required to prevent unauthorized access and to comply with human health and safety regulations. Gates would be installed at various access points along the fence lines and equipped with lock boxes to allow for authorized

personnel (e.g., transmission service provider, O&M staff, emergency response) to access appropriate portions of the BESS facility site.

Lighting would only be in areas where it is required for safety, security, or operations. Low-elevation (less than 14 feet) controlled security lighting would be installed at the project substation and around the BESS yards, in accordance with applicable requirements and regulations. Permanent motion-sensitive, directional security lights would be installed to provide adequate illumination around the substation area and points of ingress/egress. All lighting would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties, compliant with applicable codes and regulations. Security cameras would be placed on site and monitored 24/7.

3.11.6 Seismic Safety

Earthquakes can strike with little or no warning, especially in California, making preparedness essential to survival and injury prevention. Earthquake preparedness includes, securing heavy furniture and objects, creating an emergency kit with food, water, and first-aid supplies, and developing a communication plan. After any quake, employees should check themselves and others for injuries, inspect the surroundings for hazards like leaks, severed services or structural damage, and listen to official updates via battery-powered radio or mobile alerts. Proceed to all muster points, stay away from damaged buildings, and be prepared for aftershocks.

3.12 Existing Zoning and Land Uses

The site of the proposed project is currently undeveloped, and the regional land use has remained largely unchanged since the 1980s based on aerial imagery. (AMLGMN 2024j). The project site is within the Alameda County East County Plan area and is designated Large Parcel Acreage (LPA) in that plan. The zone classification is Agriculture-Combining B District (A-BE). Surrounding the project site to the south, north, east, and west, the zones and land use designations are predominantly agriculture with undeveloped land and foothills and scattered residences and agricultural.

3.12.1 Land Uses in the Vicinity

Relative to the proposed BESS facility site, the Tesla Substation is about 0.25 miles east; high voltage transmission lines parallel the BESS facility site along the northwestern, northern, northeastern, and eastern boundaries; Patterson Pass Road roughly parallels the eastern boundary; the Western Pacific Railroad is about 0.1 miles southeast; and there is an existing gravel access road adjacent to the northern boundary. The gen-tie alignment connecting the BESS facility to the Tesla Substation crosses Patterson Pass Road and Patterson Run (a seasonal stream channel), and generally proceeds southeast to the POCO pole, before turning east across the Tesla Substation property and then north into the substation boundary and POI. The

proposed BESS facility site and surrounding land have been used for cattle grazing in the past. However, the BESS facility site and Tesla Substation property have not been grazed recently, whereas APN 99B-7890-2-6, the property crossed by the gen-tie between the BESS facility site and Tesla Substation property is currently used as cattle pasture.

3.12.2 Site Selection

In furtherance of the project objectives, the project site and related facilities were selected taking into consideration engineering constraints, site geology, environmental impacts, water, waste and fuel constraints, and electric transmission constraints, among other factors. More detailed discussion of the site selection criteria are discussed in Alternatives, Section 8 of this staff assessment.

3.12.3 Important Farmland and Wiliamson Act

The Williamson Act, officially the California Land Conservation Act of 1965, allows landowners, such as in this case where the land is under Williamson Act contract for grazing, to voluntarily restrict their land to agricultural or open-space uses in exchange for significantly reduced property tax assessments based on the land's restricted use rather than its market value. These contracts, typically lasting a minimum of 10 years and automatically renewing annually, help preserve over 16 million acres of farmland and ranchland statewide, with additional protections available through Farmland Security Zones for high-value agricultural lands. (https://landvalues.acres.com/williamson-act-explained). For the proposed project, both the main project parcel and one of the parcels the gen-tie line would cross are undeveloped annual grassland used for cattle grazing and are under Williamson Act contracts.

3.13 Decommissioning (Facility Closure)

At the end of its estimated 35-year operational life, the project would be decommissioned, and most system components—including lithium-ion batteries, steel, wood, and concrete—would be recycled or salvaged. Batteries would be either recycled or repurposed, and materials such as metal parts without free-flowing oil may be sent for salvage. Components more than three feet below ground surface are proposed to be left in place.

Hazardous materials used during decommissioning, such as fuels, oils, and hydraulic fluids, would be transferred directly to tanker trucks. Storage tanks and vessels would be rinsed and removed, while smaller containers of lubricants, solvents, and similar materials would be stored in a locked, secondary-contained utility structure until properly disposed of or recycled. All hazardous materials and hazardous waste would be managed in accordance with applicable federal, state, and local requirements, and handled by trained personnel. An HMBP/Closure Plan would be submitted to the CEC, to

Certified Unified Program Agencies, and all transportation of hazardous materials would comply with transportation and other regulatory requirements.

3.14 References

Dudek 2025d – Dudek (TN 261401). Potentia Viridi BESS. Data Request Response 2, Attachment 7, Revised Section 2 Project Description. Docketed January 29, 2025. Accessed online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-OPT-04

AMLGMN 2024j – Allen Matkins Leck Gamble Mallory & Nats (TN 258011). Land Use, dated July 26, 2024. Accessed online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-OPT-04

AMLGMN 2024kk – Allen Matkins Leck Gamble Mallory & Nats (TN 258044). Emergency Response Plan, dated July 26, 2024. Accessed online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-OPT-04

Online Reference, ”Understanding California’s Williamson Act”, dated October 9. 2024, https://landvalues.acres.com/williamson-act-explained

Online Reference, Alameda County Open Data Hub. https://data.acgov.org/, accessed September 24, 2025

Section 4

Engineering Evaluation

The purpose of this analysis is to ensure that the project would be built to applicable engineering codes, ensure public health and safety, and verify that applicable engineering laws, ordinances, regulations, and standards (LORS) have been identified. This analysis also evaluates the applicant's proposed design criteria, describes the design review and construction inspection process, and establishes conditions of certification that would monitor and ensure compliance with engineering LORS and any other special design requirements. These conditions allow both the California Energy Commission (CEC) compliance project manager (CPM) and the applicant to adopt a compliance monitoring program that will verify compliance with these LORS.

4.1 Facility Design

4.1.1 Setting

Existing Conditions

The proposed Potentia-Viridi Battery Energy Storage System (project) and its linear facilities would be in unincorporated Alameda County on undeveloped, rural agricultural land, on approximately 102 acres (Dudek 2025d, Section 2.1). See **Section 2, Introduction**, for a description of the project components within the California Energy Commission's (CEC's) Opt-In certification and project components outside the CEC's Opt-In certification.

Regulatory

Federal

Title 29 Code of Federal Regulations (CFR), Part 1910, Occupational Safety and Health standards. Title 29 of the CFR standard comprehensively addresses safety and health standards for general industry.

State

California Building Standards Code 2025 (or the latest edition in effect) (also known as Title 24, California Code of Regulations). The California Building Standards Code applies to the planning, design, operation, construction, use, and occupancy of power plants, energy storage systems, and their ancillary facilities.

Local

East County Area Plan – A Portion of the Alameda County Area Plan

Seismic and Geologic Hazards. The Seismic and Geologic Hazards section in Environmental Health and Safety is intended to minimize the risks to lives and property due to seismic and geologic hazards (Alameda 2002).

General

The following are applicable general standards for the project components within the CEC's Opt-In certification:

- Air Moving and Conditioning Association (AMCA) Standards
- American Concrete Institute (ACI) Codes
- American Institute of Steel Construction (AISC) Codes
- American National Standards Institute (ANSI) Codes
- American Society of Civil Engineers (ASCE) Codes

- American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Standards
- American Society of Mechanical Engineers (ASME) Codes
- American Society of Testing and Materials (ASTM) Codes
- American Welding Society (AWS) Codes
- Concrete Reinforcing Steel Institute (CRSI) Codes
- National Association of Corrosion Engineers (NACE) Standards
- National Electric Safety Code (NESC) Standards
- National Fire Protection Association (NFPA) Standards
- Steel Deck Institute (SDI) – Design Manual for Floor Decks and Roof Decks
- UL Solutions Standards (formerly Underwriters Laboratories)

4.1.2 Impacts

Facility design encompasses the civil, structural, mechanical, and electrical engineering design of the project components within the CEC's Opt-In certification. The purpose of this facility design analysis is to:

- verify that the laws, ordinances, regulations, and standards (LORS) applicable to the engineering design and construction of the project have been identified;
- verify that the project and ancillary facilities have been described in sufficient detail upon review and approval of the CEC's Delegate Chief Building Official (DCBO) including proposed design criteria and analysis methods;
- provide reasonable assurance that the project can be designed and constructed in accordance with all applicable LORS, and in a manner that assures public health and safety through the DCBO's review and approval process;
- determine whether special design features should be considered during final design to deal with conditions unique to the site which could affect public health and safety through the DCBO's oversight and approval process; and
- describe the design review and construction inspection process and establish conditions of certification (COCs) that would be used to monitor and ensure consistency with the applicable engineering LORS, and any special design requirements.

4.1.3 DCBO Process

When the CEC authorizes a project owner to proceed with detailed design and construction, the CEC selects a qualified third-party firm to act on its behalf as a DCBO. In this capacity, the selected DCBO performs its design review, plan check, and construction inspection duties in accordance with the California Building Standards Code (CBSC) and the Commission Final Decision for the facility. The DCBO selection process

involves a request for qualification, including a statement of qualification from each engineering firm that applies for the CEC's solicitation, an interview process, and scoring criteria. The selected DCBO must be well qualified, with extensive experience in design review, plan check, inspection, and construction oversight of various types of power plants, energy storage systems and related facilities.

Before construction begins, the DCBO and its contractors, consultants, project owner, and construction contractor would hold a kickoff meeting to review the project scope and applicable engineering LORS. During this meeting, the DCBO would outline their expectations, ensuring the project owner is fully informed of the CBSC and other engineering requirements necessary for successful construction, including the East County Area Plan's Environmental Health and Safety and other relevant agencies' engineering requirements, as well as the COCs.

Throughout the construction and commissioning phases, the CEC Compliance Project Manager (CPM) would monitor the DCBO's activities to ensure they fulfill their responsibilities diligently. The project would only be permitted to begin operational activities once the DCBO, in collaboration with the CPM, issues the certificate of occupancy and completion. The responsibility for design of energy storage systems is retained by the responsible engineer(s). The duty of the DCBO is to review the engineering and construction submittals to determine that construction and industry LORS are met. The documents approved by DCBO would be used to confirm, through field inspection, that the field conditions reflect the design documentation. Any departures from approved design conditions would be reflected in the final or "as-built" construction documents, which the DCBO archives in accordance with COC **GEN-8** requirements.

The CPM would confirm and approve that the DCBO would review engineering and construction submittals, meet conditions outlined in the Facility Design COCs, retain qualified inspectors to perform special inspection services, and generally inspect all major structures, systems, and equipment to ensure that industry standards (LORS) and special project conditions (Facility Design COCs) are met. The CPM would arrange with the DCBO that an independent audit be performed to adequately sample that the foregoing requirements are met.

4.1.4 Project Conformance with Applicable LORS

Table 4.1-1 below details CEC staff's determination of conformance with applicable local, state and federal LORS, including any proposed COCs, where applicable, to ensure the project components within the CEC's Opt-In certification would conform with applicable LORS. As shown in this table, CEC staff concludes that with implementation of specific COCs, the proposed project components within the CEC's Opt-In certification would conform with all applicable LORS. The subsection below, "4.1.6 Proposed Conditions of Certification," contains the full text of the referenced COCs.

TABLE 4.1-1 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
Federal	
Code of Federal Regulations (CFR), Title 29, Part 1910, Occupational Safety and Health standards.	**Yes.** With implementation of COCs **GEN-1** through **GEN-8**, **CIVIL-1** through **CIVIL-4**, **STRUC-1** through **STRUC-4, MECH-1, MECH-2**, and **ELEC-1**.
State	
California Building Standards Code 2025 (or the latest edition in effect) (also known as Title 24, California Code of Regulations)	**Yes.** With implementation of COCs **GEN-1** through **GEN-8**, **CIVIL-1** through **CIVIL-4**, **STRUC-1** through **STRUC-4, MECH-1, MECH-2**, and **ELEC-1**.
Local	
East County Area Plan – A Portion of the Alameda County General Plan	**Yes.** With implementation of COCs **CIVIL-1** and **CIVIL-4**, and **STRUC-1** through **STRUC-4**.
General	
Air Moving and Conditioning Association (AMCA) Standards American Concrete Institute (ACI) Codes American Institute of Steel Construction (AISC) Codes American National Standards Institute (ANSI) Codes American Society of Civil Engineers (ASCE) Codes American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Standards American Society of Mechanical Engineers (ASME) Codes American Society of Testing and Materials (ASTM) Codes American Welding Society (AWS) Codes Concrete Reinforcing Steel Institute (CRSI) Codes National Association of Corrosion Engineers (NACE) Standards National Electric Safety Code (NESC) Standards National Fire Protection Association (NFPA) Standards Steel Deck Institute (SDI) – Design Manual for Floor Decks and Roof Decks UL Solutions Standards	**Yes.** With implementation of COCs **CIVIL-1** through **CIVIL-4, STRUC-1** through **STRUC-4, MECH-1, MECH-2**, and **ELEC-1**.

4.1.5 Conclusions and Recommendations

The CEC staff concludes that the design and construction of the project components within the CEC's Opt-In certification, including the BESS, project substation, O&M buildings, and gen-tie line would conform with the applicable LORS.

The proposed COCs would ensure that the project components within the CEC's Opt-In certification are designed and constructed in accordance with applicable engineering LORS. This would be accomplished through design review, plan check, and field inspections that would be performed by the DCBO. The CEC staff would oversee the

DCBO's work to ensure satisfactory performance. The COCs below are enforceable as part of the CEC's certification for the project.

4.1.6 Proposed Conditions of Certification

The following proposed COCs include measures to ensure the project components within the CEC's Opt-In certification would conform with applicable engineering LORS.

GEN-1 The project owner shall design, construct, and inspect the project in accordance with the 2025 California Building Standards Code (CBSC), also known as Title 24, California Code of Regulations, which encompasses the California Building Code (CBC), California Building Standards Administrative Code, California Electrical Code, California Mechanical Code, California Plumbing Code, California Energy Code, California Fire Code, California Code for Building Conservation, California Reference Standards Code, and all other applicable engineering LORS in effect at the time initial design plans are submitted to the Delegate Chief Building Official (DCBO) for review and approval (the CBSC in effect is the edition that has been adopted by the California Building Standards Commission and published at least 180 days previously). The project owner shall ensure that all the provisions of the above applicable codes are enforced during the construction, addition, alteration, moving (onsite), demolition, repair, or maintenance of the completed facility.

In the event that the initial engineering designs are submitted to the DCBO when the successor to the 2025 CBSC is in effect, the 2025 CBSC provisions shall be replaced with the applicable successor provisions. Where, in any specific case, different sections of the code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern.

The project owner shall ensure that all contracts with contractors, subcontractors, and suppliers clearly specify that all work performed and materials supplied comply with the codes listed above.

Verification: Within 30 days following receipt of the certificate of occupancy (CofO), the project owner shall submit to the Compliance Project Manager (CPM) a statement of verification, signed by the responsible engineer(s), attesting that all designs, construction, installation, and inspection requirements of the applicable LORS and the California Energy Commission's (CEC's) decision have been met in the area of Facility Design. The project owner shall provide the CPM a copy of the CofO within 30 days of receipt from the DCBO.

Once the CofO has been issued, the project owner shall inform the CPM at least 30 days prior to any construction, addition, alteration, moving, demolition, repair, or maintenance to be performed on any portion(s) of the completed facility that

requires DCBO approval for compliance with the above codes. The CPM will then determine if the DCBO needs to approve the work.

GEN-2 Before submitting the initial engineering designs for DCBO review, the project owner shall furnish the CPM and the DCBO with a schedule of facility design submittals, and master drawings and master specifications list. The master drawings and master specifications list shall contain a list of proposed submittal packages of designs, calculations, and specifications for major structures, systems, and equipment. Major structures, systems, and equipment are structures and their associated components or equipment that are necessary for energy storage and/or power production, costly or time consuming to repair or replace, are used for the storage, containment, or handling of hazardous or toxic materials, or could become potential health and safety hazards if not constructed according to applicable engineering LORS. The schedule shall contain the date of each submittal to the DCBO. To facilitate audits by the CEC staff, the project owner shall provide specific packages to the CPM upon request.

Verification: At least 60 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of rough grading, the project owner shall submit to the DCBO and to the CPM the schedule, and the master drawings and master specifications list of documents to be submitted to the DCBO, for review and approval. These documents shall be the pertinent design documents for the major structures, systems, and equipment defined above in Condition of Certification **GEN-2**. Major structures, systems, and equipment shall be added to or deleted from the list only with CPM approval. The project owner shall provide schedule updates in the monthly compliance report (MCR).

GEN-3 The project owner shall make payments to the DCBO for design review, plan checks, construction inspections, and other applicable DCBO activities, based upon a reasonable fee schedule to be negotiated between the project owner and the DCBO. If the CEC delegates the DCBO function to a third party or local agency, the project owner, at the CEC's direction, shall make payments directly to the DCBO based upon a fee schedule negotiated between the CEC, the project owner, and the DCBO. These fees may be consistent with the fees listed in the 2025 CBC, adjusted for inflation and other appropriate adjustments; may be based on the value of the facilities reviewed; may be based on hourly rates; or may be otherwise agreed upon by the project owner and the DCBO.

Verification: The project owner shall make the required payments to the DCBO in accordance with the agreement between the project owner and the DCBO. If the CEC delegates the DCBO function to a third party or local agency, the project owner, at the CEC's direction, shall make payments directly to the DCBO based upon a fee schedule negotiated between the CEC, the project owner, and the DCBO. The project owner shall send a copy of the DCBO's receipt of payment to the CPM in the next MCR indicating that applicable fees have been paid.

GEN-4 Prior to the start of rough grading, the project owner shall assign a California-registered architect, or a structural or civil engineer, or a construction project manager with experience in constructing renewable energy projects as the resident engineer (RE) in charge of the project.

If the construction project manager's role is limited to tasks such as overseeing construction activities, ensuring safety compliance, or managing project logistics without engaging in the design or engineering decision-making processes, licensure may not be necessary. Otherwise, licensure shall be required.

The RE shall:

1. Monitor progress of construction work requiring DCBO design review and inspection to ensure compliance with LORS;
2. Ensure that construction of all facilities subject to DCBO design review and inspection be consistent in every material respect to applicable LORS, these conditions of certification, approved plans, and specifications;
3. Prepare documents to initiate changes in approved drawings and specifications when either directed by the project owner or as required by the conditions of the project;
4. Be responsible for providing project inspectors and testing agencies with complete and up-to-date sets of stamped drawings, plans, specifications, and any other required documents;
5. Be responsible for the timely submittal of construction progress reports to the DCBO from the project inspectors, the contractor, and other engineers who have been delegated responsibility for portions of the project; and
6. Be responsible for notifying the DCBO of corrective action or the disposition of items noted on laboratory reports or other tests when they are not consistent with approved plans and specifications.

The RE (or their delegate) must be located at the project site or be available at the project site within a reasonable time, during any hours in which construction takes place.

The RE shall have the authority to halt construction and to require changes or remedial work if the work does not meet requirements.

If the RE or the delegated engineers are reassigned or replaced, the project owner shall submit the name, qualifications, and registration number of the newly assigned engineer or construction project manager to the DCBO for review and approval. The project owner shall notify the CPM of the DCBO's approval of the new engineer.

Verification: At least 30 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of rough grading, the project owner shall submit to the DCBO for review and approval, the resume and qualifications registration number of the RE and any other delegated engineers or construction project manager assigned to the project. The project owner shall notify the CPM of the DCBO's approvals of the RE and other delegated engineer(s) within five days of the approval.

If the RE or the delegated engineer(s) is subsequently reassigned or replaced, the project owner has five days to submit the name, qualifications, and registration number of the newly assigned engineer or construction project manager to the DCBO for review and approval. The project owner shall notify the CPM of the DCBO's approval of the new engineer within five days of the approval.

GEN-5 Prior to the start of rough grading, the project owner shall assign at least one of each of the following California registered engineers to the project: a civil engineer; a soils, geotechnical, or civil engineer experienced and knowledgeable in the practice of soils engineering; and an engineering geologist. Prior to the start of construction, the project owner shall assign at least one of each of the following California registered engineers to the project: a design engineer who is either a structural engineer or a civil engineer fully competent and proficient in the design of project structures and equipment supports; a mechanical engineer; and an electrical engineer. (California Business and Professions Code sections 6704, 6730, 6731, and 6736 require state license to practice as a civil engineer or structural engineer in California).

The tasks performed by the civil, mechanical, electrical, or design engineers may be divided between two or more engineers, as long as each engineer is responsible for a particular segment of the project (for example, proposed earthwork, civil structures, project structures, equipment support). No segment of the project shall have more than one responsible engineer. The transmission line may be the responsibility of a separate California registered electrical engineer.

The project owner shall submit to the DCBO for review and approval, the names, qualifications, and registration numbers of all responsible engineers assigned to the project.

If any one of the designated responsible engineers is subsequently reassigned or replaced, the project owner shall submit the name, qualifications and registration number of the newly assigned responsible engineer to the DCBO for review and approval. The project owner shall notify the CPM of the DCBO's approval of the new engineer.

1. The civil engineer shall:

a. Review the foundation investigations, geotechnical, or soils reports prepared by the soils engineer, the geotechnical engineer, or by a civil engineer experienced and knowledgeable in the practice of soils engineering;

b. Design (or be responsible for the design of), stamp, and sign all plans, calculations, and specifications for proposed site work, civil works, and related facilities requiring design review and inspection by the DCBO. These include, but may not be limited to grading, site preparation, excavation, compaction, construction of secondary containment, foundations, erosion and sedimentation control structures, drainage facilities, underground utilities, culverts, site access roads, and sanitary sewer systems; and

c. Provide consultation to the RE during the construction phase of the project and recommend changes in the design of the civil works facilities and changes to the construction procedures.

2. The soils engineer, geotechnical engineer, or civil engineer experienced and knowledgeable in the practice of soils engineering, shall:

   a. Review all the engineering geology reports;

   b. Prepare the foundation investigations, geotechnical, or soils reports containing field exploration reports, laboratory tests, and engineering analysis detailing the nature and extent of the soils that could be susceptible to liquefaction, rapid settlement, or collapse when saturated under load; and

   c. Recommend field changes to the civil engineer and RE.

This engineer shall be authorized to halt earthwork and to require changes if site conditions are unsafe or do not conform to the predicted conditions used as the basis for design of earthwork or foundations.

1. The engineering geologist shall:

   a. Review all the engineering geology reports and prepare a final soils grading report.

2. The design engineer shall:

   a. Be directly responsible for the design of the proposed structures and equipment supports;

   b. Provide consultation to the RE during design and construction of the project;

   c. Monitor construction progress to ensure compliance with applicable engineering LORS;

   d. Evaluate and recommend necessary changes in design; and

e. Prepare and sign all major building plans, specifications, and calculations.

3. The mechanical engineer shall be responsible for, and sign and stamp a statement with, each mechanical submittal to the DCBO, stating that the proposed final design plans, specifications, and calculations are consistent with all of the mechanical engineering design requirements set forth in the CEC's decision.

4. The electrical engineer shall:

   a. Be responsible for the electrical design of the project; and

   b. Sign and stamp electrical design drawings, plans, specifications, and calculations.

Verification: At least 30 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of rough grading, the project owner shall submit to the DCBO for review and approval, resumes and registration numbers of the responsible civil engineer; soils, geotechnical or civil engineer experienced in the practice of soils engineering; and engineering geologist assigned to the project.

At least 30 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of construction, the project owner shall submit to the DCBO for review and approval, resumes and registration numbers of the responsible design engineer, mechanical engineer, and electrical engineer assigned to the project.

The project owner shall notify the CPM of the DCBO's approvals of the responsible engineers within five days of the approval.

If any one of the designated responsible engineers is subsequently reassigned or replaced, the project owner has five days in which to submit the name, qualifications, and registration number of the newly assigned engineer to the DCBO for review and approval. The project owner shall notify the CPM of the DCBO's approval of the new engineer within five days of the approval.

GEN-6 Prior to the start of an activity requiring special inspection, including prefabricated assemblies, the project owner shall assign to the project, qualified and certified special inspector(s) who shall be responsible for the special inspections required by the 2025 CBC.

A certified weld inspector, certified by the American Welding Society (AWS), or American Society of Mechanical Engineers (ASME) as applicable, shall inspect welding performed on-site requiring special inspection (including structural, piping, tanks and pressure vessels).

The special inspector shall:

1. Be a qualified person who shall demonstrate competence, to the satisfaction of the DCBO, for inspection of the particular type of construction requiring special or continuous inspection;
2. Inspect the work assigned for conformance with the approved design drawings and specifications;
3. Furnish inspection reports to the DCBO and RE. All discrepancies shall be brought to the immediate attention of the RE for correction, then, if uncorrected, to the DCBO and the CPM for corrective action; and
4. Submit a final signed report to the RE, DCBO, and CPM, stating whether the work requiring special inspection was, to the best of the inspector's knowledge, consistent with the approved plans, specifications, and other provisions of the applicable edition of the CBC.

Verification: At least 15 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of an activity requiring special inspection, the project owner shall submit to the DCBO for review and approval, with a copy to the CPM, the name(s) and qualifications of the certified weld inspector(s), or other certified special inspector(s) assigned to the project to perform one or more of the duties set forth above. The project owner shall also submit to the CPM a copy of the DCBO's approval of the qualifications of all special inspectors in the next MCR.

If the special inspector is subsequently reassigned or replaced, the project owner has five days in which to submit the name and qualifications of the newly assigned special inspector to the DCBO for approval. The project owner shall notify the CPM of the DCBO's approval of the newly assigned inspector within five days of the approval.

GEN-7 If any discrepancy in design and/or construction is discovered in any engineering work that has undergone DCBO design review and approval, the project owner shall document the discrepancy and recommend required corrective actions. The discrepancy documentation shall be submitted to the DCBO for review and approval. The discrepancy documentation shall reference this condition of certification and, if appropriate, applicable sections of the CBC and/or other applicable LORS. Minor discrepancies such as typos or minor in-field adjustments that do not significantly change design or construction would not need approval.

Verification: The project owner shall transmit a copy of the DCBO's approval of any corrective action taken to resolve a discrepancy to the CPM in the next MCR. If any corrective action is disapproved, the project owner shall notify the CPM, within five days, of the reason for disapproval and submit the revised corrective action to obtain DCBO's review and approval.

GEN-8 The project owner shall obtain the DCBO's final approval of all completed work that has undergone DCBO design review and approval. The project owner shall request the DCBO to inspect the completed structure and review the submitted documents. The project owner shall notify the CPM after obtaining the DCBO's final approval. The project owner shall retain one set of approved engineering plans, specifications, and calculations (including all approved changes) at the project site, or at another accessible location, during the operating life of the project. Electronic copies of the approved plans, specifications, calculations, and marked-up as-built shall be provided to the DCBO for retention by the CPM.

Verification: Within 15 days of the completion of any work, the project owner shall submit to the DCBO, with a copy to the CPM in the next MCR, (a) a written notice that the completed work is ready for final inspection, and (b) a signed statement that the work is consistent with the final approved plans. After retaining for the record the final approved engineering plans, specifications, and calculations described above, the project owner shall submit to the CPM a letter stating both that the above documents have been retained and the storage location of those documents.

Within 90 days of the completion of construction, the project owner shall provide to the DCBO three sets of electronic copies of the above documents at the project owner's expense. These are to be provided in the form of "read only" files (the latest version of Adobe .pdf available), with restricted (password-protected) printing privileges.

CIVIL-1 The project owner shall submit to the DCBO for review and approval the following:

1. Design of the proposed drainage structures and the grading plan;
2. An erosion and sedimentation control plan;
3. A construction storm water pollution prevention plan (SWPPP);
4. Related calculations and specifications, signed and stamped by the responsible civil engineer; and
5. Soils, geotechnical, or foundation investigations reports required by the 2025 CBC.

Verification: At least 15 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of site grading the project owner shall submit the documents described above to the DCBO for design review and approval. In the next MCR following the DCBO's approval, the project owner shall submit a written statement certifying that the documents have been approved by the DCBO.

CIVIL-2 The resident engineer or delegate shall, if appropriate, stop all earthwork and construction in the affected areas when the responsible soils engineer,

geotechnical engineer, or the civil engineer experienced and knowledgeable in the practice of soils engineering, identifies unforeseen adverse soil or geologic conditions. The project owner shall submit modified plans, specifications, and calculations to the DCBO based on these new conditions. The project owner shall obtain written approval from the DCBO before resuming earthwork and construction in the affected area.

Verification: The project owner shall notify the CPM within 24 hours when earthwork and construction is stopped as a result of unforeseen adverse geologic/soil conditions. This notification shall be in the form of a phone call followed by an email notification. Within 24 hours of the DCBO's approval to resume earthwork and construction in the affected areas, the project owner shall provide to the CPM a copy of the DCBO's written approval.

CIVIL-3 The project owner shall perform inspections in accordance with the 2025 CBC. All site-grading operations, for which a grading permit is required, shall be subject to inspection by the DCBO.

If, in the course of inspection, it is discovered that the work is not being performed in accordance with the approved plans, the discrepancies shall be reported immediately to the resident engineer, the DCBO, and the CPM. The project owner shall prepare a written non-conformance report (NCR), with copies to the DCBO and the CPM, detailing all discrepancies, non-compliance items, and the proposed corrective action.

Verification: Within five days of the discovery of any discrepancies, the resident engineer shall transmit to the DCBO and the CPM a NCR, and the proposed corrective action for review and approval. Within five days of resolution of the NCR, the project owner shall submit in writing the details of the corrective action to the DCBO and the CPM. A list of NCRs for the reporting month shall also be included in the following MCR.

CIVIL-4 After completion of finished grading and erosion and sedimentation control and drainage work, the project owner shall obtain the DCBO's written approval of the final grading plans (including final changes) for the erosion and sedimentation control work. The civil engineer shall state that the work within their area of responsibility was done in accordance with the final approved plans.

Verification: Within 30 days (or a project owner and DCBO mutually agreed upon alternative time frame) of the completion of the erosion and sediment control mitigation and drainage work, the project owner shall submit to the DCBO, for review and approval, the final grading plans (including final changes) and the responsible civil engineer's signed statement that the installation of the facilities and all erosion control measures were completed in accordance with the final approved combined grading plans, and that the facilities are adequate for their

intended purposes. The project owner shall submit a copy of the DCBO's written approval to the CPM in the next MCR.

STRUC-1 Prior to the start of any increment of construction, the project owner shall submit plans, calculations, and other supporting documentation to the DCBO for design review and acceptance for all project structures, systems, and equipment identified in the DCBO-approved master drawing and master specifications list. The design plans and calculations shall include the lateral force procedures and details as well as vertical calculations.

Construction of any structure or component shall not begin until the DCBO has approved the lateral force procedures to be employed in designing that structure or component. The project owner shall:

1. Obtain approval from the DCBO of lateral force procedures proposed for project structures;
2. Obtain approval from the DCBO for the final design plans, specifications, calculations, soils reports, and applicable quality control procedures. If there are conflicting requirements, the more stringent shall govern (for example, highest loads, or lowest allowable stresses shall govern). All plans, calculations, and specifications for foundations that support structures shall be filed concurrently with the structure plans, calculations, and specifications;
3. Submit to the DCBO the required number of copies of the structural plans, specifications, calculations, and other required documents of the designated major structures prior to the start of on-site fabrication and installation of each structure, equipment support, or foundation;
4. Ensure that the final plans, calculations, and specifications clearly reflect the inclusion of approved criteria, assumptions, and methods used to develop the design. The final designs, plans, calculations, and specifications shall be signed and stamped by the responsible design engineer; and
5. Submit to the DCBO the responsible design engineer's signed statement that the final design plans conform with applicable LORS.

Verification: At least 30 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of any increment of construction of any structure or component listed in the DCBO-approved master drawing and master specifications list, the project owner shall submit to the DCBO the above final design plans, specifications and calculations, with a copy of the transmittal letter to the CPM.

The project owner shall submit to the CPM, in the next MCR, a copy of a statement from the DCBO that the proposed structural plans, specifications, and calculations have been approved and comply with the requirements set forth in applicable engineering LORS.

STRUC-2 The project owner shall submit to the DCBO the required number of sets of the following documents related to work that has undergone DCBO design review and approval:

1. Concrete cylinder strength test reports (including date of testing, date sample taken, design concrete strength, tested cylinder strength, age of test, type and size of sample, location and quantity of concrete placement from which sample was taken, and mix design designation and parameters);
2. Concrete pour sign-off sheets;
3. Bolt torque inspection reports (including location of test, date, bolt size, and recorded torques);
4. Field weld inspection reports (including type of weld, location of weld, inspection of non-destructive testing (NDT) procedure and results, welder qualifications, certifications, qualified procedure description or number (ref: AWS); and
5. Reports covering other structural activities requiring special inspections shall be in accordance with the 2025 CBC.

Verification: If the DCBO discovers a discrepancy between the result and the DCBO-approved documents in any of the above documents, the project owner shall, within five days, prepare and submit an NCR describing the nature of the discrepancies and the proposed corrective action to the DCBO, with a copy of the transmittal letter to the CPM. The NCR shall reference the condition(s) of certification and the applicable CBC chapter and section. Within five days of resolution of the NCR, the project owner shall submit a copy of the corrective action to the DCBO and the CPM.

The project owner shall transmit a copy of the DCBO's approval or disapproval of the corrective action to the CPM within 15 days. If disapproved, the project owner shall provide the CPM, within five days, the reason for disapproval, and the revised corrective action submitted to the DCBO to obtain DCBO's approval.

STRUC-3 The project owner shall submit to the DCBO design changes to the final plans required by the 2025 CBC, including the revised drawings, specifications, calculations, and a complete description of, and supporting rationale for, the proposed changes, and shall give to the DCBO prior notice of the intended filing.

Verification: On a schedule suitable to the DCBO, the project owner shall notify the DCBO of the intended filing of design changes and shall submit the required number of sets of revised drawings and the required number of copies of the other above-mentioned documents to the DCBO, with a copy of the transmittal letter to the CPM. The project owner shall notify the CPM, via the MCR, when the DCBO has approved the revised plans.

STRUC-4 Tanks and vessels containing quantities of toxic or hazardous materials exceeding amounts specified in the 2025 CBC shall, at a minimum, be designed to comply with the requirements of that chapter.

Verification: At least 30 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of installation of the tanks or vessels containing the above specified quantities of toxic or hazardous materials, the project owner shall submit to the DCBO for design review and approval final design plans, specifications, and calculations, including a copy of the signed and stamped engineer's certification.

The project owner shall send copies of the DCBO approvals of plan checks to the CPM in the MCR following receipt of such approvals. The project owner shall also transmit a copy of the DCBO's inspection approvals to the CPM in the MCR following completion of any inspection.

MECH-1 The project owner shall submit, for DCBO design review and approval, the proposed final design, specifications, and calculations for the project's mechanical-related components listed in the DCBO-approved master drawing and master specifications list. The submittal shall also include the applicable Quality Assurance/Quality Control procedures. Upon completion of construction of any such component, the project owner shall request the DCBO's inspection approval of that construction.

The responsible mechanical engineer shall stamp and sign all plans, drawings, and calculations for the project's major mechanical-related components, subject to DCBO design review and approval, and submit a signed statement to the DCBO when the proposed components have been designed, fabricated, and installed in accordance with all of the applicable LORS, which may include, but are not limited to:

- NACE SP187 (Design for Corrosion Control of Reinforcing Steel in Concrete);
- NFPA 70B (Practices for Electrical Equipment Maintenance—to reduce hazard to life safety);
- OSHA 1910.119 Process Safety Management of Highly Hazardous Chemicals, Toxins and Reactive;
- Title 24, California Code of Regulations, Part 2 (California Building Code);
- Title 24, California Code of Regulations, Part 5 (California Plumbing Code);
- Title 24, California Code of Regulations, Part 6 (California Energy Code, for building energy conservation systems and temperature control and ventilation systems); and
- UL Standard 9540 (Standard for Safety for Energy Storage Systems and Equipment).

The DCBO may deputize inspectors to carry out the functions of the CEC's code enforcement mandate.

Verification: At least 30 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of any increment of major mechanical-related components' construction listed in the DCBO-approved master drawing and master specifications list, the project owner shall submit to the DCBO for design review and approval the final plans, specifications, and calculations, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with applicable LORS, and shall send the CPM a copy of the transmittal letter in the next MCR.

The project owner shall transmit to the CPM, in the MCR following completion of any inspection, a copy of the transmittal letter conveying the DCBO's inspection approvals.

MECH-2 The project owner shall submit to the DCBO for design review and approval the design plans, specifications, calculations, and quality control procedures for any permanent heating, ventilating, air conditioning (HVAC) or refrigeration system.

Packaged HVAC systems, where used, shall be identified with the appropriate manufacturer's data sheets.

The project owner shall design and install all permanent HVAC and refrigeration systems within buildings and related structures in accordance with the CBC and other applicable codes. Upon completion of any increment of construction, the project owner shall request the DCBO's inspection and approval of that construction. The final plans, specifications and calculations shall include approved criteria, assumptions, and methods used to develop the design. In addition, the responsible mechanical engineer shall sign and stamp all plans, drawings and calculations and submit a signed statement to the DCBO that the proposed final design plans, specifications and calculations conform with the applicable LORS.

Verification: At least 30 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of construction of any permanent HVAC or refrigeration system, the project owner shall submit to the DCBO the required HVAC and refrigeration calculations, plans, and specifications, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with the CBC and other applicable codes, with a copy of the transmittal letter to the CPM.

ELEC-1 Prior to the start of any increment of electrical construction for all electrical equipment and systems 110 Volts (V) or higher (see a representative list, below) the project owner shall submit, for DCBO design review and approval, the

proposed final design, specifications, and calculations. Upon approval, the above listed plans, together with design changes and design change notices, shall remain on the site or at another accessible location for the operating life of the project. The project owner shall request that the DCBO inspect the installation to ensure compliance with the requirements of applicable LORS.

1. Final design plans shall include:
    a. one-line diagram for the 34.5 kilovolts (kV) and 480 V systems;
    b. system grounding drawings;
    c. lightning protection system; and
    d. hazard area classification plan.
2. Final calculations must establish:
    a. short-circuit ratings of facility equipment;
    b. ampacity of feeder cables;
    c. voltage drop in feeder cables;
    d. system grounding requirements;
    e. coordination study calculations for fuses, circuit breakers and protective relay settings for the 34.5 kV, 110 V, and 480 V systems;
    f. system grounding requirements;
    g. lighting energy calculations; and
    h. 110-Volt system design calculations and submittals showing feeder sizing, transformer and panel load confirmation, fixture schedules and layout plans.
3. The following activities shall be reported to the CPM in the MCR:
    a. Receipt or delay of major electrical equipment;
    b. Testing or energizing of major electrical equipment; and
    c. A signed statement by the registered electrical engineer certifying that the proposed final design plans and specifications are consistent with requirements set forth in the CEC decision.

Verification: At least 30 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of each increment of electrical construction, the project owner shall submit to the DCBO for design review and approval the above listed documents.

The project owner shall include in this submittal a copy of the signed and stamped statement from the responsible electrical engineer attesting compliance

with the applicable LORS and shall send the CPM a copy of the transmittal letter in the next MCR.

4.1.7 Recommended Mitigation Measures

There are no recommended mitigation measures for facility design.

4.1.8 References

Alameda 2002 – East County Area Plan – A Portion of the Alameda County General Plan, dated May 2002, Accessed on: May 14, 2025. Accessed online at: https://www.acgov.org/cda/planning/generalplans/index.htm

Dudek 2025d – Dudek (TN 261401). Potentia Viridi BESS. Data Request Response 2, Attachment 7, Revised Section 2 Project Description. Docketed January 29, 2025. Accessed online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-OPT-04

4.2 Facility Reliability

4.2.1 Setting

Existing Conditions

The proposed Potentia-Viridi Battery Energy Storage System (project) is a 400 megawatt (MW) energy storage project capable of discharging electricity for up to eight hours at full capacity (AMLGMN 2024jj, Section 1.2 and AMLGMN 2024kk, Section 2). This battery energy storage system (BESS) would be installed on approximately 102 acres of undeveloped, retired agricultural lands in eastern Alameda County (AMLGMN 2024kk, Section 2). This analysis evaluates the proposed project to determine if the energy storage facility would be built in accordance with typical industry norms for reliable power generation.

Regulatory

Public Resources Code section 25520 requires that applications for certification contain facility reliability information and Public Resources Code section 25523(h) requires the written decision to contain a discussion on the electricity reliability benefits of the project. These two sections are made applicable to the evaluation of the project through Public Resources Code sections 25545.2 and 25545.8. This analysis addresses section 25520 regarding the facility's reliability, and **Section 4.3, Transmission System Engineering**, addresses section 25523(h) regarding the project's impacts on, and benefits to the reliability of the electricity network the project would serve.

4.2.2 Impacts

Energy storage systems must be able to operate for extended periods without shutting down for maintenance or repairs and must achieve an availability factor similar to the existing energy storage facilities in the California electricity grid system. To achieve this, this reliability analysis of the project's energy storage system encompasses the following benchmarks:

- equipment availability;
- facility maintainability and maintenance program; and
- facility reliability in relation to natural hazards.

The California Energy Commission (CEC) staff uses the above benchmarks as appropriate industry norms to evaluate the project's reliability and determine if its availability factor is achievable.

Equipment Availability

Equipment availability would be ensured based on several factors, including but not limited to component availability from the manufacturer, and site conditions, prior to

procurement, construction, and operation. In addition, the project must provide adequate maintenance and repair of the equipment and systems during operations. An operation and maintenance protocol would be implemented in accordance with the maintenance requirements prescribed by the BESS manufacturer.

Emergency Backup Power

Unlike conventional power-generating facilities that rely on backup generators, the project would not include any diesel, natural gas, or liquid petroleum-powered generators to support critical loads. Instead, power for critical loads would be provided through a separate auxiliary power connection to the on-site project substation (AMLGMN 2024p, Section 1.3).

Facility Maintainability and Maintenance Program

Equipment manufacturers provide maintenance recommendations for their products, and facility owners develop their facility's maintenance program based on those recommendations (AMLGMN 2024k, Section 3.5.3.3). Such a program would include preventive and corrective maintenance activities, such as the replacement of inverter modules, filters, and other electrical components. Moreover, the project would implement a Supervisory Control and Data Acquisition (SCADA) management system which monitors facility operation and provides communications and control of critical components (AMLGMN 2024o, Section 2.4). The SCADA would be used to monitor operations 24 hours per day, 365 days per year. This system would ensure the project's operational efficiency and reliability.

Facility Reliability in Relation to Natural Hazards

Natural forces can threaten the reliable operation of a facility. Seismic shaking (earthquakes) could present credible threats to the project's reliable operation.

Seismic Shaking

Seismic events affect many regions in California, including the site of the proposed project. The American Society of Civil Engineers' Hazard Tool identifies eastern Alameda County as being seismic design category D. This category corresponds to buildings and structures in areas that would experience severe and destructive ground shaking (AMLGMN 2024ccc, Section 3.4.1.3). The project site would be approximately 0.4 miles southwest of the potentially active Midway Fault. Several active faults are northeast of the project site, including the Greenville, Carnegie, Las Positas, Pleasanton, Calaveras, Warm Springs, and Hayward Faults. The closest active faults are the Greenville and Carnegie Faults, located about 6 miles northeast of the site; see **Section 5.6, Geology, Paleontology, and Minerals**. As mentioned above, some of these faults are considered active; however, the possibility of ground rupture along these faults at the site would be deemed low.

The project would be designed and constructed to meet the latest applicable engineering codes. Compliance with the latest seismic design requirements represents

an upgrade in performance during seismic shaking, compared to older facilities, since these requirements have been continually upgraded and made more stringent. Because the project would be built to the latest seismic design requirements, it would be expected to perform better than the older existing energy storage facilities in similar seismically active or potentially active regions that are connected to California's electricity grid system.

CEC staff proposes conditions of certification (COCs) to ensure the project complies with these requirements; see COC **GEO-1** (geotechnical investigations and geohazards report) in **Section 5.6, Geology, Paleontology, and Minerals** and **Section 4.1, Facility Design** COCs **GEN-1** (Final on-site inspection of project construction), **GEN-5** (requiring registered engineers to oversee design and construction of the project), and **STRUC-1** through **STRUC-4** (requiring submittals to the CEC's delegate chief building official [DCBO] for approval). These COCs include standard engineering design requirements for mitigation of strong seismic shaking, liquefaction, and potential excessive settlement due to dynamic compaction. The CEC staff concludes that these COCs would adequately mitigate potentially significant impacts to project's functional reliability due to seismic shaking.

Landslides and Seiches

Landslides would not affect the project site. The project site is underlain by relatively stable soils, and while temporary grading may create steep slopes, the overall topography is relatively flat (AMLGMN 2024ccc, Section 3.4.3.3). The site is not near any large or enclosed bodies of water and, therefore, would not be affected by seiches (AMLGMN 2024ccc, Section 3.4.1.3.4). Therefore, landslides and seiches would have no impact on the functional reliability of the project. See **Section 5.6, Geology, Paleontology, and Minerals,** for further discussion.

Floodplains

Floodplains would not affect the project site. The project would not be within a FEMA-designated 100-year floodplain area. Consequently, the site of the proposed project is deemed to have a low risk of flooding, and construction and operation would not be subject to flood-related hazards (AMLGMN 2024z, Section 3.15.3.3).

While the project site has a low risk of flooding, it would be designed and built to provide adequate levels of flood resistance by complying with proposed COC **GEO-1** (obtaining a grading permit) in **Section 5.6, Geology, Paleontology, and Minerals**, COC **CIVIL-1** (delegate chief building official (DCBO) approval of the drainage, grading, erosion control, and storm water plans, alongside civil engineer-signed specifications and calculations) and COC **CIVIL-4** (DCBO approved grading plans for the erosion and sedimentation control work) in **Section 4.1, Facility Design**.

Therefore, there are no concerns regarding the project's functional reliability due to flooding.

Subsidence

The project is not in an area that has experienced land subsidence (a gradual lowering of surface elevation). Subsidence results primarily from over-pumping ground water over time. According to USGS data, there is no history of recent or historic subsidence at the project location (AMLGMN 2024ccc, Section 3.4.1.3.3). Consequently, the project site is deemed to have a low risk of subsidence, and the proposed project would not be subject to subsidence-related hazards.

While the project site has a low risk of subsidence, CEC staff has proposed COC **GEO-1** to ensure the project complies with the Alameda County General Plan, Safety Element for subsidence. See **Section 5.6, Geology, Paleontology, and Minerals**, for further discussion.

Therefore, there are no concerns regarding the project's functional reliability due to subsidence.

Comparison with Existing Facilities

The equivalent availability factor (availability factor) of a power plant or energy storage system is the amount of time the facility is able to produce electricity over a certain period, divided by the amount of time in the period in which the generation resource is available. The capacity factor is the percentage of time a power generation facility operates at maximum output over a given period.

BESS

The project's BESS does not produce electricity, but rather, stores electricity and returns the electricity in the future. The applicant has not provided a specific availability factor; however, the project is expected to operate seven days per week, 365 days per year, up to 8 hours per day, and the use of a SCADA system for real-time monitoring suggests a high availability, consistent with industry norms of 95 percent or higher for a BESS facility (AMLGMN 2024o, Section 2.4). This availability factor is higher than most other existing power plant facilities. According to the North American Electric Reliability Corporation (NERC), the average availability factor for all fossil-fueled, hydroelectric, pump storage, geothermal, and nuclear-fueled power plants in North America in 2024 was approximately 82 percent (NERC 2024).

The project's expected capacity factor, or percentage of time operating at maximum output, would be approximately 33 percent, or 8 hours per day (AMLGMN 2024kk, Section 2). This capacity factor is lower than traditional baseload combined-cycle power plant facilities, which average approximately 59 percent, but higher than peak-demand natural gas turbine power plant facilities, which average approximately 12 percent (EIA 2025). In comparison, the NREL 2024 Annual Technology Baseline estimates a capacity factor of approximately 17 percent for utility-scale four-hour battery energy storage systems, based on the assumption of one full charge-discharge cycle per day, which

equates to a capacity factor of approximately 33 percent for an eight-hour BESS (NREL 2024b).

4.2.3 Project Conformance with Applicable LORS

No federal, state, or local laws, ordinances, regulations, and standards (LORS) related to facility reliability apply to the project components within the CEC's Opt-In Certification.

4.2.4 Conclusions and Recommendations

CEC staff concludes that with the incorporation of COCs **CIVIL-1** through **CIVIL-4, GEN-1, GEN-5, STRUC-1** through **STRUC-4**, (see **Section 4.1, Facility Design**) and **GEO-1** (see **Section 5.6, Geology Paleontology and Minerals**). The proposed project would be built to operate in a manner consistent with industry norms for reliable operation and would be expected to demonstrate a high availability factor although a lower capacity factor compared to some other facilities within the state. No additional COCs are proposed for the project.

4.2.5 Proposed Conditions of Certification

There are no proposed COCs for the project for facility reliability.

4.2.6 Recommended Mitigation Measures

There are no recommended mitigation measures for facility reliability.

4.2.7 References

AMLGMN 2024ccc – Allen Matkins Leck Gamble Mallory & Nats (TN 258252). Geological Hazards and Resources, dated August 1, 2024. Accessed online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-OPT-04

AMLGMN 2024jj – Allen Matkins Leck Gamble Mallory & Nats (TN 258043). Waste Management Plan, dated July 26, 2024. Accessed online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-OPT-04

AMLGMN 2024k – Allen Matkins Leck Gamble Mallory & Nats (TN 258012). Hazardous Materials Handling, dated July 26, 2024. Accessed online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-OPT-04

AMLGMN 2024kk – Allen Matkins Leck Gamble Mallory & Nats (TN 258044). Emergency Response Plan, dated July 26, 2024. Accessed online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-OPT-04

AMLGMN 2024o – Allen Matkins Leck Gamble Mallory & Nats (TN 258016). Project Description, dated July 26, 2024. Accessed online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-OPT-04

AMLGMN 2024p – Allen Matkins Leck Gamble Mallory & Nats (TN 258017). Introduction, dated July 26, 2024. Accessed online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-OPT-04

AMLGMN 2024z – Allen Matkins Leck Gamble Mallory & Nats (TN 258032). Water Resources, dated July 26, 2024. Accessed online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-OPT-04

EIA 2025 – U.S. Energy Information Administration (EIA). Electric Power Monthly. Table 6.07.A. Capacity Factors for Utility Scale Generators Primarily Using Fossil Fuels. Accessed on January 2025. Available online at: https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=epmt_6_07_a

NERC 2024 – North American Electric Reliability Corporation (NERC). Generating Unit Statistical Brochures. Accessed on December 22, 2025. Available online at: https://www.nerc.com/pa/RAPA/gads/Pages/Reports.aspx

NREL 2024 – National Renewable Energy Laboratory (NREL). Annual Technology Baseline Utility-Scale Battery Storage. Accessed on December 12, 2025. Available online at: https://atb.nrel.gov/electricity/2024/utility-scale_battery_storage

4.3 Transmission System Engineering

4.3.1 Setting

The applicant, Levy Alameda, LLC, and its affiliates, have proposed constructing and operating the Potentia-Viridi Battery Energy Storage System (project) on approximately 102 acres in eastern Alameda County. The project facilities include a battery energy storage system (BESS), three operations and maintenance (O&M) buildings, a project substation, a 500 kilovolt (kV) overhead intertie line, and interconnection facilities within the Pacific Gas and Electric Company (PG&E) owned and operated Tesla Substation. The project's 34.5-500 kV step-up substation would interconnect PG&E's Tesla 500 kV substation with a 2,884-foot-long generation intertie line (gen-tie). The gen-tie consists of two segments: one measuring 1,557 feet of overhead line segment, which the applicant will own, and the other measuring 1,327 feet, which PG&E will construct and own. The applicant will operate the project and the overhead line segment of the gen-tie line.

Existing Conditions

The surrounding land uses include undeveloped rural agricultural lands, high-voltage transmission lines, an electrical substation, rural roads, and railroad lines. The City of Tracy is the nearest municipality to the project site, approximately 2.5 miles to the northeast.

Regulatory

Federal/Regional

- North American Electric Reliability Council Reliability Standards. The North American Electric Reliability Council's (NERC) Reliability Standards for North America's bulk electric transmission systems provide national policies, standards, principles, and guides to assure the adequacy and security of the electric transmission system. NERC is the North American Electric Reliability Organization (ERO), subject to the Federal Energy Regulatory Commission (FERC) oversight. The NERC reliability standards provide system performance levels for normal and contingency conditions. With regard to power flow and stability simulations, while these standards are similar to NERC and Western Electricity Coordinating Council (WECC) planning standards, certain aspects of the NERC/WECC standards are either more stringent or more specific than the NERC standards for transmission system contingency performance. The NERC's planning standards apply to interconnected system operations and individual service areas (NERC 2024 and ongoing).
- Western Electricity Coordinating Council Planning Standards. The Western Electricity Coordinating Council (WECC) Planning Standards are integrated with the NERC Reliability Standards to provide the system performance standards used to assess the reliability of the interconnected system. The priority of the standards is the

uninterrupted continuity of service, and the second priority is the preservation of interconnected operations. Analysis of the WECC system is based, to a large degree, on Section I. Some standards are NERC and WECC Planning Standards with Table I and WECC Disturbance-Performance Table, and Section I.D., *NERC and WECC Standards for Voltage Support and Reactive Power.* These standards require that the results of power flow and stability simulations verify defined performance levels, including allowable variations in thermal loading, voltage, and frequency, as well as the loss of load that could occur on systems during various disturbances.

State

California Public Utilities Commission

- California Public Utilities Commission (CPUC) General Order 95 (GO-95), *Rules for Overhead Electric Line Construction,* sets forth uniform requirements for the construction of overhead lines. Compliance with this order ensures adequate service and the safety of the public and the people who build, maintain, and operate overhead electric lines.
- CPUC General Order 128 (GO-128), *Rules for Construction of Underground Electric Supply and Communications Systems*, sets forth uniform requirements and minimum standards for underground supply systems to ensure adequate service and the safety of both the public and the people who build, maintain, and operate underground electric lines.
- CPUC General Order 131-E (GO-131-E), *Rules Relating to the Planning and Construction of Electric Generation, Transmission/Power/Distribution Line Facilities, and Substations Located in California,* specifies application and noticing requirements for new line construction, including EMF reduction.

General

- The National Electric Safety Code. The National Electric Safety Code, 2023, NESC, is a United States standard for the safe installation, operation, and maintenance of electric power and communication utility systems, including power substations, power and communication overhead lines, and power and communication underground lines.

4.3.2 Impacts

This analysis evaluates whether the proposed project's interconnection conforms to all laws, ordinances, regulations, and standards (LORS) required for safe and reliable electric power transmission. Additionally, under the California Environmental Quality Act (CEQA), the California Energy Commission (CEC) must conduct an environmental review of the "whole of the action," which may include facilities not licensed by the CEC (Title 14, California Code of Regulations, §15378).

For the interconnection of a proposed battery storage or transmission facility to the grid, the interconnecting utility and grid operator, California Independent System

Operator (California ISO), is responsible for ensuring the grid's reliability. To ensure grid reliability, PG&E and California ISO determine the transmission system impacts of the proposed project and any mitigation measures needed to ensure system conformance with utility reliability criteria, NERC planning standards, WECC reliability criteria, and the California ISO reliability criteria for potential impacts to their system. The PG&E Greater Bay Area 500 kV interconnection area report and the Cluster 13 phase II study report are used to determine the proposed project's impact on the transmission grid. CEC staff relies on California ISO-conducted studies to assess the project's effect on the transmission grid and identify whether downstream or indirect project impacts would require additional equipment or strategies to bring the transmission network into compliance with applicable reliability standards.

The study reports analyze the grid, both with and without the proposed project, under conditions specified in the planning standards and reliability criteria. The standards and criteria define the assumptions used in the study and establish the thresholds through which grid reliability is determined. The studies must analyze the project's impact in its first year of operation, which is thus based upon a forecast of loads, generation, and transmission. An interconnection queue establishes generation and transmission forecasts. The studies are focused on thermal overloads, voltage deviations, system stability (excessive oscillations in generators and transmission systems, voltage collapse, loss of loads, or cascading outages), and short circuit duties.

If the studies show that the project's interconnection could cause the grid to be out of compliance with reliability standards, then the study will identify mitigation alternatives or ways in which the grid could be brought into compliance with reliability standards. When a project connects to the California ISO-controlled grid, both the studies and the mitigation alternatives must be reviewed and approved by the California ISO. If the mitigation identified by the California ISO or interconnecting utility includes transmission modifications or additions that require CEQA review, these additions could be considered part of the "whole of the action" in conjunction with the proposed power plant. The CEC must then analyze the environmental impacts of these modifications or additions.

Battery Energy Storage System, Step-Up Substation, and Generation-Intertie Line

The project's primary purpose is to develop, construct, and operate a battery storage facility that enhances grid reliability while significantly reducing environmental impact. It features a 3,200 megawatt-hour (MWh) BESS. The BESS will draw electricity from the power grid to charge and store electrical energy, which can be discharged back into the grid when needed. This project offers several benefits, including reducing the reliance on natural gas power plants to balance intermittent renewable energy generation and serving as an additional capacity resource to improve grid reliability. The project's maximum generator output at the generator terminal is 408.8 MW with an auxiliary load of 2.95 MW. The project's maximum net output at POI is 400 MW.

Battery storage facility - The project would include a battery storage system capable of storing up to 400 MW of electricity for 8 hours (3,200 MWh), requiring up to 70 acres of land. Figures 2-4 and 2-5 in applicant's project description (Dudek 2025d) show that the battery system would be located near the project substation to facilitate interconnection and metering. The BESS will also include a battery management system to control the charging/discharging of the batteries. The project would use commercially available battery technology such as lithium ions, lithium iron phosphate, nickel manganese cobalt, and nickel cobalt aluminum batteries. The BESS enclosures may also have a heating, ventilation, and air conditioning (HVAC) system for optimal performance and safety.

The BESS would consist of a Power Conversion System (PCS). A PCS functions to convert between DC and AC and change the voltage level from the Medium Voltage (MV) collection voltage to the voltage output of the BESS enclosures. A PCS is a packaged and integrated system consisting of a bidirectional inverter, MV transformers, protection equipment, circuit breakers, harmonic filter equipment, terminals, and a connection cabling system.

The MV collection system would include multiple components that connect the PCS units to the project substation, including underground conductor circuits, switchboards, switchgear, and 34.5 kV voltage transformers. The conductors for the MV collection system would be installed underground during construction using trenching.

Project substation - The substation would include three main power transformers, two active and a live spare. When the BESS facility charges, power from the electric grid would be stepped down from 500 kV to 34.5 kV and sent from the project substation through the MV collection system and PCS units into the battery packs within the BESS enclosures. Power from the battery packs within the BESS enclosures will be sent to the PCS units when the BESS facility is discharged. Step up to 34.5 kV and transported to the project substation through the MV collection system before being stepped up to 500 kV at the main power transformers. A prefabricated control building would be installed within the project substation area and contain an energy management system, metering, and telecommunication equipment to communicate with PG&E facilities and support remote project operations monitoring.

All project substation structures are grounded, as shown in the description, Appendix 2B. A communication system would also be installed within the same footprint. The communication system comprises fiber optic communication cabling for the Supervisory Control and Data Acquisition (SCADA), which provides communication capabilities between substations, switchyards, and O&M facilities. (Dudek 2025d TN 261401).

Generation-intertie line - The proposed gen-tie line will be a 2,884-foot-long, 500 kV single-circuit line constructed with bundled 2x2300 Kamil 61W AAC Pigweed conductors for each phase, offering an approximate ampacity of 2,700 amps. This gen-tie line consists of two segments: one measuring 1,557 feet, which the applicant will own, and the other measuring 1,327 feet, which PG&E will own. Additionally, two overhead shield

wires would be utilized for the neutral conductor and mounted on the same structures as the gen-tie line.

The construction will include two 110-foot-tall dead-end transmission structures at the substation bay, three 199-foot-tall angled dead-end transmission structures, and one H-frame tangent transmission structure. A communication line will also be erected on utility poles 40 feet above ground. The applicant will install two fiber optic cables above ground on 16 utility poles from the project substation to the POCO. PG&E will construct the remaining segment with underground trenches extending from the POCO to the Tesla Substation.

The corridor for the Gen-Tie line will be approximately 200 feet wide. To facilitate the interconnection of the BESS facility to the electric transmission grid, PG&E would need to install a substation bay dead-end transmission structure and expand the POI's 500 kV breaker-and-a-half bay with a new circuit breaker. As the project description indicates, all structures associated with the gen-tie line will be grounded. This gen-tie line will facilitate the interconnection of the project substation with the existing PG&E Tesla Substation. (Project description section 2-2 and Table 2-3, Appendix 2B, Transmission line design).

PG&E Downstream Network Upgrades

Reliability Assessment Results and Mitigations Proposed

All Cluster 13 asynchronous projects were modeled with reactive capabilities to meet the requirements (0.95 lead/lag dynamic at the high side of the station transformer). A reliability thermal analysis was performed on power flow cases, including all energy-only and full-capacity projects dispatched to maximum values. Congestion management is relied upon for mitigation where applicable.

Steady State Thermal Overloads - Some contingencies in post-cluster projects had steady-state thermal overload violations. The study has indicated congestion management as a mitigation means. However, due to the addition of the project, no steady-state thermal violations were observed in the PG&E transmission system. Appendix E to the area report further captures the reliability results where congestion management was deemed sufficient to mitigate the thermal overloads.

Bus Flow analysis - A bus flow power flow analysis was performed to determine if any thermal overloads on equipment inside a substation have not already been monitored in the reliability thermal loading analysis. Substation equipment is considered thermally overloaded if the power flow loading exceeds 100 percent of the equipment's current rating. The projects have some potential impacts on the loading of buses and switching devices. Mitigation measures are discussed in the Short Circuit Duty analysis section.

Steady State Voltage - The power flow study showed that some Cluster 13 projects may experience high/low voltages and /or voltage deviations. The interconnection customers must manage their project's plant voltages within equipment tolerances. However, the

Cluster C13 Phase I Interconnection study report does not propose network upgrades for this project.

Post-transient Voltage - No post-transient voltage stability violations were identified in the reliability analysis for this project.

Reactive Power Deficiency - No reactive power deficiencies were identified in the reliability analysis for this project.

Transient Stability Analysis - Disturbance simulations were performed for a 20-second study period for selected categories P2, P4, and P7 (loss of multiple elements) outages. A complete list of outages evaluated for this project is shown in Attachment 6 of the Cluster study report.

Summer Peak and Spring Off-Peak Cases - The transient stability analysis showed that the transmission system remained stable and met the transmission planning performance criteria for all simulated outages. However, undamped oscillations were observed for the Diablo-Midway 2 & 3 outage without RAS of the Summer Peak Case. No network upgrades are proposed due to this project. The study's results are provided in the form of plots in Attachment 7.

Short Circuit Duty Analysis - Short Circuit studies were conducted to determine the degree to which the addition of all the projects in Cluster C13 Phase II PG&E Greater Bay Area 500 Interconnection area, including the project, and all necessary transmission upgrades increases fault duties at PG&E's substations, adjacent utility substations, and other 230 kV and 500 kV buses within the study area. A breaker is considered overstressed if the fault duty is greater than or equal to 100 percent of the breaker's interrupting capability. The study indicated that the PG&E circuit breakers cannot handle the new Cluster C13 Phase II PG&E Greater Bay Area projects.

Mitigations - Therefore, the following mitigation measures have been proposed due to fault duty increases, thermal overload violations, and reactive Var deficiencies of the PG&E facilities. (Cluster 13 Phase 2, Appendix A, Attachments 6 and 7)

Precursor Network Upgrades (PNU) due to the project California ISO queue 1702
California ISO Transmission Planning Process (TPP)- Overstress mitigation, Tesla 230 kV circuit breakers 372, 382, and 842, and bus section D replacement.

- General Reliability Network Upgrade (GRNU)- Overstress mitigation, Tesla 500 kV CB 612 replacement.
- GRNU- Overstress mitigation, Tesla 500 kV CBs 542,622,632, and 642 replacements.
- TPP- Overstress mitigation, Vaca Dixon 230 kV CB 542, 622, 632, and 642 replacements.
- GRNU- Overstress mitigation, Metcalf Substation, 230 kV capacitor, four circuit breakers for replacement.

Conditionally Assigned Network Upgrades (CANU) and potential changes in cost responsibility.

- GRNU- Midway Substation 500 kV Diablo line bays overload: Midway 500 kV circuit breakers 812 and 912 overload.

  Mitigation- Replace entire bay CBs 812 and 912, switches, and conductor to meet the required emergency rating at Midway 500 kV for Diablo #2.

- GRNU- Midway Substation 500 kV Diablo line bays overload: Midway 500 kV CBs 802 and 902 overload.

  Mitigation- Replace entire bay two CBs 802 and 902, switches, and conductors to meet the required emergency rating at Midway 500 kV for Diablo #3.

Local Delivery Network Upgrade (LDNU)- No upgrade assigned

Local Off-Peak Network Upgrades (LOPNU)- No upgrade assigned

Area Delivery Network Upgrades (ADNU)

- New North 500 kV path with Delevan 500 kV station on Table Mountain-Vaca 500 kV line
- New Diablo-Midway #4 500 kV line.

Interconnection Reliability Network Upgrades (IRNU)

- Tesla Substation (IRNU)- Expand BAAH Bay with one 500 kV CB and CB control relays.
- Newark Substation (GRNU)- Newark substation 230 kV CBs 974,984, and 994 overstress.

  Mitigation- Replace Newark Substation 230 kV CBs 974, 984, and 994 with 63kA interrupting capability.

- Tesla Substation (GRNU)- Tesla Substation 230 kV Bus D and 13 CBs overstress

  Mitigation- Install reactors on transformers or increase the reactance of existing reactors.

- Midway Substation (GRNU)- Midway Substation 500 kV Diablo line bays overload: Move Gates 500 kV line.

  Mitigation- Install a new 500 kV BAAH bay 02 with two CBs to relocate the Gates 500 kV line terminal. Replace CBs 802,902,812 & 912 to meet the emergency rating needed in Bays 0 and 1 when a single Diablo line is out of service. Bays 0 and 1 work is CANU because SCD already assigns these four CBs over stress.

PTO's Interconnection Facilities

- Tesla Substation - Gen-tie terminal equipment installation

- Mesa Substation - termination of the customer's fiber
- Generating site - IT install RTU, SEL-2411, and provide testing support Engineering reviews, Metering, Pre-parallel inspection, & PM
- Transmission line - generator-tie line equipment

Sub-synchronous Resonance (SSR) Analysis- Certain generators or inverter-based generators, when interconnected within the electrical proximity of series capacitor banks on the transmission system, are susceptible to sub-synchronous Interaction conditions, which must be evaluated.

- SSR requirements should be evaluated, and electromagnetic transient (EMT) models should be submitted to PG&E by the applicant at least one year before the initial synchronization of the project. If any mitigation is required, it should be in service before the initial synchronization of the project. Perhaps there is a need for a network upgrade.

Deliverability Assessment Results and Mitigations Proposed

On peak Deliverability Local- The addition of this project has not resulted in a violation. However, the Cluster 13 PG&E Greater Bay Area projects are causing deliverability thermal overloads.

Mitigation- Deliverability constraints to be mitigated by RAS

Off-peak Deliverability Local- No violation has occurred due to the addition of this project.

On-peak Deliverability Area (Summer Peak)- Cluster C13 Phase II PG&E Greater Bay Area projects caused some deliverability thermal overload criteria violations.

Mitigation- Deliverability constraints to be mitigated by RAS

Off-peak Deliverability Area- No violation has occurred due to Cluster C13 Phase II PG&E Greater Bay Area projects.

Preliminary Protection Requirements

Protection requirements may include, but are not limited to, Direct Transfer Trip (DTT) schemes installed at PG&E and Interconnection Customer facilities.

4.3.3 Project Conformance with Applicable LORS

Table 4.3-1 below details staff's determination of conformance with applicable local, state, and federal LORS, including any proposed COCs, where applicable, to ensure the project components within the CEC's Opt-In certification would conform with LORS. As shown in this table, the staff concludes that with the implementation of specific COCs, the proposed project would conform with all applicable LORS. The subsection at the end of this section, "Proposed Conditions of Certification," contains the full text of the referenced COCs.

TABLE 4.3-1 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
Federal/Regional	
Federal Energy Regulatory Commission (FERC) /North American Electric Reliability Council (NERC)	**Yes.** The proposed interconnection facilities would comply with Federal/Regional regulations. COC **TSE-5** would require the submittal of any updates to the Large Generator Interconnection Agreement (LGIA) at least 30 days before the construction of transmission facilities.
NERC/WECC Planning Standards: The Western Electricity Coordinating Council (WECC) Planning Standards	**Yes.** The proposed interconnection facilities would comply with Federal/Regional regulations. COC **TSE-5** would require the submittal of any updates to the LGIA at least 30 days before the construction of transmission facilities.
State	
California Public Utilities Commission (CPUC) General Order 95 (GO-95)	**Yes.** The proposed overhead collector lines and generator tie-line would comply with CPUC GO-95. Compliance with COC **TSE-4** requires power plant switchyard, outlet line, and termination compliance with GO-95.
CPUC General Order 128 (GO-128)	**Yes.** The proposed underground collector lines would comply with CPUC GO-128. Compliance with COC **TSE-4** requires power plant switchyard, outlet line, and termination compliance with GO-128.
General	
National Electric Safety Code 2023 (NESC)	**Yes.** The proposed overhead collector lines, underground collector lines, and generator tie-line would comply with NESC. Compliance with COC **TSE-4** requires power plant switchyard, outlet line, and termination compliance with NESC.
Local	
PG&E Regulation and standard	**Yes.** The proposed overhead generator tie-line would comply with PG&E Regulation for Clearance Requirements for Power Line Corridors. Compliance with COCs **TSE-5** and **TSE-6** requires overhead conductor compliance with PG&E Regulation.

4.3.4 Electricity Reliability Benefits

Public Resources Code section 25520 requires that applications for certification contain facility reliability information and Public Resources Code section 25523(h) requires the written decision to contain a discussion on the electricity reliability benefits of the project. These two sections are made applicable to the evaluation of the Potentia-Viridi BESS through Public Resources Code sections 25545.2 and 25545.8. **Section 4.3, Transmission System Engineering**, addresses section 25523(h) regarding the project's impacts on, and benefits to the reliability of the electricity network the project would serve. **Section 4.2, Facility Reliability**, addresses section 25520 regarding the facility's reliability.

Consistent with Public Resources Section 25523(h), the following provides a description of the system reliability benefits of the project.

As a standalone storage facility, the 400-MW, 3,200-MWh Potentia-Viridi BESS project is designed to enhance grid reliability by absorbing electricity during periods of low demand or high renewable generation and discharging it during peak hours when the system is most stressed. By shifting energy from off-peak to on-peak periods, the project helps reduce congestion on the transmission system, mitigates curtailment of renewable resources, and supports a more balanced and stable supply profile.

The project's interconnection at the Tesla 500 kV substation is strategically significant. Tesla is a major backbone substation within the California ISO grid, serving as a key hub for power flows between the Bay Area, the Central Valley, and the broader Western Interconnection. By locating at this high-voltage node, the project can provide reliability benefits across a wide geographic footprint, supporting system operations during peak demand, transmission outages, or periods of reduced renewable output.

In addition to energy shifting, the project can provide fast-responding ancillary services such as frequency regulation, voltage support, spinning and non-spinning reserves, and ramping capability. These services are essential for maintaining grid stability, particularly as California continues to integrate large quantities of variable renewable energy resources. The project's ability to respond within seconds to grid disturbances helps prevent outages, smooth fluctuations in supply, and maintain system frequency within required operating limits.

By delivering dispatchable, emission-free stored electricity, the project would strengthen California's electric system reliability and enhance its operational flexibility.

4.3.5 Conclusions and Recommendations

As discussed above, implementing the proposed TSE COCs would reliably and safely interconnect the project to the transmission grid. CEC staff recommends adopting the COCs, as detailed in subsection "4.3.6 Proposed Conditions of Certification" below.

The conditions below are enforceable as part of the CEC's certificate for the portions of the project constituting the site and related facilities (the gen-tie line).

4.3.6 Proposed Conditions of Certification

The proposed COCs include measures to conform to applicable LORS and ensure that the project is reliably and safely interconnected to the PG&E transmission grid.

TSE-1 The project owner shall furnish the Compliance Project Manager (CPM) and the Delegate Chief Building Official (DCBO) with a transmission facility design submittals schedule, a Master Drawing List, a Master Specifications List, and a Major Equipment and Structure List. The schedule shall contain a description and list of proposed submittal packages for design, calculations, and major structures

and equipment specifications. To facilitate audits by CEC staff, the project owner shall provide designated packages to CPM when requested.

Verification: Before the start of construction, the project owner shall submit the schedule, a Master Drawing List, and a Master Specifications List to the DCBO and to the CPM. The schedule shall contain a description and list of proposed submittal packages for design, calculations, and specifications for major structures and equipment (see a list of major equipment in **Table 1**: Major Equipment List below). Additions and deletions shall be made to the table only with CPM and DCBO approval. The project owner shall provide schedule updates in the Monthly Compliance Report.

Table 1: Major Equipment List
Breakers
Step-up transformer
Switchyard
Busses
Surge arrestors
Disconnects
Take-off facilities
Electrical control building
Switchyard control building
Transmission pole/tower
Grounding system

TSE-2 Before the start of construction, the project owner shall assign to the project an electrical engineer and at least one of each of the following:

a. a civil engineer.

b. a geotechnical engineer or a civil engineer experienced and knowledgeable in soil engineering.

c. a design engineer who is either a structural engineer or a civil engineer and fully competent and proficient in the design of power plant structures and equipment supports; or

d. a mechanical engineer (Business and Professions Code Sections 6704 et seq. require state registration to practice as a civil or structural engineer in California).

The tasks performed by the civil, geotechnical, mechanical, electrical, or design engineers may be divided between two or more engineers as long as each engineer is responsible for a particular project segment, e.g., proposed earthwork, civil structures, power plant structures, or equipment support. Each segment of the project shall have at most one responsible engineer. The transmission line may be the responsibility of a separate California-registered

electrical engineer. The civil, geotechnical, or civil and design engineer, assigned as required by Facility Design **GEN-5**, may be responsible for the design and review of the TSE facilities.

For review and approval, the project owner shall submit to the DCBO the names, qualifications, and registration numbers of all engineers assigned to the project. Suppose any one of the designated engineers is subsequently reassigned or replaced. In that case, the project owner shall submit the newly assigned engineer's name, qualifications, and registration number to the DCBO for review and approval. The project owner shall notify the CPM of DCBO's approval of the new engineer. This engineer shall be authorized to halt earthwork and require changes if site conditions are unsafe or do not conform to the predicted conditions used as the basis for the design of earthwork or foundations.

The electrical engineer shall:

1. be responsible for the electrical design of the power plant switchyard, outlet, and termination facilities and
2. sign and stamp electrical design drawings, plans, specifications, and calculations.

Verification: Before the start of rough grading, the project owner shall submit the names, qualifications, and registration numbers of all the responsible engineers assigned to the project to the DCBO for review and approval. The project owner shall notify the CPM of the DCBO's approvals of the engineers within five days of the approval.

Suppose the designated responsible engineer is subsequently reassigned or replaced. In that case, the project owner has five days to submit the newly assigned engineer's name, qualifications, and registration number to the DCBO for review and approval. The project owner shall notify the CPM of the DCBO's approval of the new engineer within five days of the approval.

TSE-3 If any design and construction discrepancy is discovered in any engineering work that has undergone DCBO design review and approval, the project owner shall document the discrepancy and recommend corrective action. The discrepancy documentation shall become a controlled document and shall be submitted to the DCBO for review and approval, which refers to this condition of certification.

Verification: The project owner shall submit a copy of the DCBO's approval or disapproval of any corrective action taken to resolve a discrepancy to the CPM within 15 days of receipt. If disapproved, the project owner shall advise the CPM, within five days of the reason for the disapproval, along with the revised corrective action required to obtain the DCBO's approval.

TSE-4 For the power plant switchyard, outlet line, and termination, the project owner shall begin construction once the DCBO has approved plans for that increment of construction. These plans, together with design changes and design change notices, shall remain on the site for one year after completion of construction. The project owner shall request that the DCBO inspect the installation to ensure compliance with the requirements of applicable LORS. The following activities shall be reported in the monthly compliance report:

a. receipt or delay of major electrical equipment.

b. testing or energization of major electrical equipment; and

c. the number of electrical drawings approved, submitted for approval, and still to be submitted.

Verification: Before the start of each increment of construction, the project owner shall submit to the DCBO for review and approval the final design plans, specifications, and calculations for equipment and systems of the power plant switchyard, outlet line, and termination, including a copy of the signed and stamped statement from the responsible electrical engineer verifying compliance with all applicable LORS, and send the CPM a copy of the transmittal letter in the next monthly compliance report.

TSE-5 The project owner shall ensure that the proposed transmission facilities' design, construction, and operation conform to all applicable LORS and the following requirements. The project owner shall submit the required copies of the design drawings and calculations determined by the DCBO. Once approved, the project owner shall inform the CPM and DCBO of any anticipated changes to the design and shall submit a detailed description of the proposed change and complete engineering, environmental, and economic rationale for the shift in the CPM and DCBO for review and approval.

a. The power plant outlet line shall meet or exceed the electrical, mechanical, civil, and structural requirements of CPUC General Order 95 or National Electric Safety Code (NESC); Title 8 of the California Code and Regulations (Title 8); Articles 35, 36 and 37 of the High Voltage Electric Safety Orders, National Electric Code (NEC) and related industry standards.

b. Breakers and buses in the power plant switchyard and other switchyards, where applicable, shall be sized to comply with a short-circuit analysis.

c. Outlet line crossings and line parallels with transmission and distribution facilities shall be coordinated with the transmission line owner and comply with the owner’s standards.

d. The project conductors shall be sized to accommodate the project's total output.

e. Termination facilities shall comply with applicable PG&E interconnection standards.

f. The project owner shall provide the CPM:

   i. The Special Protection System is sequencing and timing, if applicable,

   ii. A letter stating that the mitigation measures or projects selected by the transmission owners for each reliability criteria violation, for which the project is responsible, are acceptable if applicable,

   iii. Any updates to the executed LGIA signed by the PG&E and the project owner.

Verification: Before the start of construction or start of modification of transmission facilities, the project owner shall submit to the DCBO for approval:

a. Design drawings, specifications, and calculations conforming with CPUC General Order 95 or National Electric Safety Code (NESC); Title 8 of the California Code and Regulations (Title 8); Articles 35, 36, and 37 of the *High Voltage Electric Safety Orders*, National Electric Code (NEC) and related industry standards, for the poles/towers, foundations, anchor bolts, conductors, grounding systems, and major switchyard equipment.

b. For each element of the transmission facilities identified above, the submittal package to the DCBO shall contain the design criteria, a discussion of the calculation method(s), a sample calculation based on "worst case conditions"[1] and a statement signed and sealed by the registered engineer in responsible charge, or other acceptable alternative verification, that the transmission element(s) will conform with CPUC General Order 95 or National Electric Safety Code (NESC); Title 8 of the California Code and Regulations (Title 8); Articles 35, 36 and 37 of the *High Voltage Electric Safety Orders*, PG&E standards, National Electric Code (NEC), and related industry standards.

c. Electrical one-line diagrams signed and sealed by the registered professional electrical engineer in charge, a route map, and an engineering description of the equipment and configurations covered by requirements **TSE-5** a) through f).

d. The Generator Special Facilities Agreement shall be provided concurrently to the CPM and DCBO. The project owner shall identify and justify the substitution of equipment and substation configurations for DCBO and CPM approval.

e. Any changes or updates to the executed LGIA signed by the PG&E and the project owner.

f. Before the construction of any project modification requiring approval of the PG&E, provide the interconnection approval to the CPM. Interconnectional approval for modification of existing facilities can be in the form of an approved Material Modification or approval of the proposed changes to the project and the existing interconnection facilities. Within 15 days after the cessation of construction, the project owner shall provide a statement to

the CPM from the registered engineer in responsible charge (signed and sealed) that the switchyard and transmission facilities conform to the above-listed requirements.

TSE-6 The project owner shall inspect the transmission facilities during and after construction. Any subsequent CPM and DCBO approved changes to it to ensure conformance with CPUC GO-95 or NESC, Title 8, CCR, Articles 35, 36, and 37 of the "High Voltage Electric Safety Orders," applicable interconnection standards, NEC and related industry standards. In case of non-conformance, the project owner shall inform the CPM and DCBO in writing within ten days of discovering such non-conformance and describe the corrective actions to be taken.

Verification: Within 60 days after the first synchronization of the project, the project owner shall transmit to the CPM and DCBO:

a. "As built" engineering description(s) and one-line drawings of the electrical portion of the facilities signed and sealed by the registered electrical engineer in charge. A statement attesting to conformance with CPUC GO-95 or NESC, Title 8, California Code of Regulations, Articles 35, 36, and 37 of the "High Voltage Electric Safety Orders," and applicable interconnection standards, NEC, related industry standards.

b. An "as built" engineering description of the transmission facilities' mechanical, structural, and civil portion signed and sealed by the registered engineer in responsible charge or acceptable alternative verification. "As built," drawings of the electrical, mechanical, structural, and civil portion of the transmission facilities shall be maintained at the power plant and made available, if requested, for CPM audit as outlined in the "Compliance Monitoring Plan."

4.3.7 Recommended Mitigation Measures

There are no recommended mitigation measures for transmission system engineering.

4.3.8 References

California Public Utilities Commission (CPUC) General Order 95 (GO-95), Rules for Overhead Electric Line Construction, revised January 15, 2020, ongoing.

California Public Utilities Commission (CPUC) General Order 128 (GO-128), Rules for Construction of Underground Electric Supply and Communications Systems, revised January 2006, ongoing.

Dudek 2025d – Dudek (TN 261401). Potentia Viridi BESS. Data Request Response 2, Attachment 7, Revised Section 2 Project Description. Docketed January 29, 2025. Accessed online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-OPT-04

NERC (North American Electric Reliability Council) 2024 Reliability Standards for the Bulk Electric Systems of North America, Updated January 1, 2024, and ongoing.

WECC (Western Electricity Coordinating Council), WECC Regional Reliability Standards, was updated on December 10, 2014, and is ongoing.

4.3.9 Definition of Terms

ACSR	Aluminum conductor steel-reinforced
Ampacity	Current-carrying capacity, expressed in amperes, of a conductor at specified ambient conditions, where damage to the conductor is nonexistent or deemed acceptable based on economic, safety, and reliability considerations.
Ampere	The unit of current flowing in a conductor
Bus	Conductors that serve as a common connection for two or more circuits
Conductor	The part of the transmission line (the wire) that carries the current.
Congestion Management	A scheduling protocol that ensures dispatched generation and transmission loading (imports) will not violate criteria.
Double Contingency	Also known as an emergency or N-2 condition, an N-2 contingency occurs when a forced outage of two system elements occurs—usually (but not exclusively) caused by one event. Examples of an N-2 contingency include the loss of two transmission circuits on a single tower line or the loss of two elements connected by a common circuit breaker due to the failure of that common breaker.
Emergency Overload	See Single Contingency condition. This is also called an N-1.
Kcmil or KCM	A thousand circular mils. A unit of the conductor's cross-sectional area; when divided by 1,273, the area in square inches is obtained.
Kilovolt (kV)	A unit of potential difference, or voltage, between two conductors of a circuit or between a conductor and the ground

Loop	An electrical cul-de-sac. A transmission configuration that interrupts an existing circuit diverts it to another connection and returns it to the interrupted circuit, thus forming a loop or cul-de-sac
Megavar	One megavolt ampere reactive
Megavars	Mega-volt-ampere-reactive. One million volt-ampere-reactive. Reactive power is generally associated with the reactive nature of motor loads that generation units must feed into the system
Megavolt Ampere (MVA)	A unit of apparent power equals the product of the line voltage in kilovolts, current in amperes, the square root of 3, divided by 1,000
Megawatt (MW)	A unit of power equivalent to 1,341 horsepower
N-0 Condition	See Normal Operation/Normal Overload, below
Normal Operation/ Normal Overload (N-0)	When all customers receive the power, they are entitled to it without interruption and at a steady voltage, and no element of the transmission system is loaded beyond its continuous rating
N-1 Condition	See Single Contingency, below
N-2 Condition	See Double Contingency, above
Outlet	Transmission facilities (circuit, transformer, circuit breaker, etc.) linking generation facilities with the main grid
Power Flow Analysis	A power flow analysis is a forward-looking computer simulation of all generation and transmission system facilities that identify overloaded circuits, transformers, and other equipment and system voltage levels.
Reactive Power	Reactive power is generally associated with the reactive nature of motor loads that generation units must feed into the system. An adequate supply of reactive power is required to maintain system voltage levels.

Remedial Action Scheme	A remedial action scheme is an automatic control provision that, as one example, will trip a selected generating unit when a circuit overloads.
Single Contingency	Also known as an emergency or N-1 condition occurs when one major transmission element (circuit, transformer, circuit breaker, etc.) or one generator is out of service.
Special Protection Scheme/System	Detects a transmission outage (either a single or credible multiple contingencies) or an overloaded transmission facility and then trips or runs back generation output to avoid potential overloaded facilities or other criteria violations
Switchyard	A power plant switchyard is an integral part of a power plant used as an outlet for one or more electric generators.
Thermal Rating	See ampacity.
TSE	Transmission System Engineering

4.4 Worker Safety and Fire Protection

4.4.1 Setting

This section discusses the existing conditions and regulatory background associated with the construction and operation of the project with respect to worker safety and fire protection. See **Section 2, Introduction**, for a description of the project components within the California Energy Commission's (CEC's) Opt-In certification and project components outside the CEC's Opt-In certification.

Existing Conditions

The 70-acre project site is located at 17257 Patterson Pass Road in unincorporated eastern Alameda County southwest of Interstate 580 (I-580) and I-205. Primary site access would be provided via a new private driveway on the north side of the site, connecting to Patterson Pass Road. A secondary emergency vehicle access-only driveway would be provided on the site's southern side on Patterson Pass Road.

Existing conditions onsite consist of vacant rural agricultural lands. The project area climate is characterized as a hot-summer Mediterranean climate with cool, wet winters and hot, dry summers.

The project site would be served by the Alameda County Fire Department (ACFD). ACFD Station 21 is located roughly 7 miles southeast of the site at 15999 W. Corral Hollow Road and ACFD Station 20 is located roughly 8 miles southwest of the site at 7000 East Avenue. The project area is primarily served by ACFD Engine 8, which is housed at ACFD Station 20. The California Department of Forestry and Fire Protection (CAL FIRE) would respond to wildland fires in the project vicinity and would provide secondary response to the project site, if necessary and available. The nearest CAL Fire station (Castle Rock Station 26) is located approximately three miles northeast of the site at 16502 W Schulte Rd. South San Joaquin County Fire Authority (South County Fire) would also assist ACFD if they need additional firefighting resources, as the two jurisdictions share automatic and mutual aid agreements. For the project site, ACFD and South County Fire share an automatic aid agreement, which means South County Fire can automatically respond to an emergency at the project site with lights and sirens without having to get approval from ACFD. The nearest Tracy Fire station (Station 94 - South County Fire Authority) is located approximately three miles northeast of the site at 16502 W Schulte Rd (CAL FIRE Station 26 is adjacent to the station and shares the same address).

Regulatory

Worker safety and fire protection are regulated through laws, ordinances, regulations, and standards (LORS), at the federal, state, and local levels.

Federal

Occupational Safety and Health Act (OSHA). The Department of Labor, Occupational Safety and Health Administration (OSHA) has adopted regulations (Title 29, Code of Federal Regulations, Section 1910.95) designed to protect workers. Employers are required to monitor worker exposure to listed hazardous substances and notify workers of exposure. The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings. These sections contain requirements to protect worker health and safety in the general industry and construction industry.

These regulations also address requirements to protect workers in emergency situations. They are designed primarily to protect worker health but also contain requirements that affect general workplace safety. The administering agencies for the above authority are Federal and State OSHA and the California Occupational Safety and Health Administration (Cal OSHA), respectively. As required by 29 Code of Federal Regulation (CFR) 1910, an employer must have an Emergency Action Plan whenever an OSHA standard in Part 1910 requires one. The Emergency Action Plan must be in writing, kept in the workplace, and available to employees for review, unless there are 10 or fewer employees. The Emergency Action Plan must contain procedures for reporting, procedures for emergency evacuation, procedures for employees who remain for critical plant operations, procedures to account for employees following evacuation, procedures if rescue and medical duties are required, and identified persons who can provide more information to employees.

National Institute of Occupational Safety and Health (NIOSH). NIOSH was established by the Occupational Safety and Health Act of 1970. NIOSH studies worker health and safety and develops safe work practices, testing protocols, and makes recommendations to OSHA to continually improve workplace practices.

State

California Occupational Safety and Health Administration. Cal OSHA is the primary agency responsible for worker safety related to the handling and use of chemicals in the workplace. Cal OSHA standards are generally more stringent than federal regulations. Employers are required to monitor worker exposure to listed hazardous substances and notify workers of exposure (Title 8, California Code of Regulations (CCR), §§ 337 to 340). The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings. It also includes the Construction Safety Orders (Title 8, CCR, §§ 1500 to 1962) and the General Industry Safety Orders (Title 8, CCR, §§ 3200 to 6184). General Industry Safety Orders include but are not limited to heat illness prevention (indoors and outdoors) and protection from wildfire smoke.

National Fire Protection Association (NFPA). The NFPA 855 Standard for the Installation of Stationary Energy Storage Systems (Second Edition – 2023) provides mandatory requirements for, and explanations of, the safety strategies and features of

energy storage systems (such as the project battery energy storage system (BESS)). Applying to all energy storage technologies, the standard includes chapters for specific technology classes. While NFPA 855 is a standard and not a code, its provisions are enforced by NFPA 1, Fire Code, in which Chapter 52 provides an outline of requirements along with references to specific sections in NFPA 855. NFPA 855 (Second Edition - 2023) was incorporated into the California Fire Code (CFC) effective January 1, 2026.

The California Fire Code (CFC). California Health and Safety Code Sections 13145 and 13146 requires every city, county, or city and county fire department or district providing fire protection services to enforce building standards adopted by the State Fire Marshal and other regulations of the State Fire Marshal. The CFC was amended in July 2024 to add regulations (Chapter 12 Energy Systems) governing BESS placement and operations in California. Recent updates to the CFC, effective January 1, 2026, incorporate NFPA 855 (Second Edition – 2023) and its requirements for battery safety, fire protection, and installation.

The California Electrical Code. The California Electrical Code outlines regulations for electrical installations, incorporating the National Electrical Code with California-specific amendments to ensure safety and compliance. The California Electrical Code is based on NFPA 70 with amendments and additions. California Electrical Code, Title 24, Part 3. Requirements for electrical safety, which include the Uniform Electrical Code, Title 24, Part 3, govern electrical installations, including wiring, equipment, grounding, bonding, and overcurrent protection, with the goal of protecting people and property from electrical hazards.

California Public Utilities Code (CPUC) 761.3 Section (g). Senate Bill (SB) 38 (Laird 2023) added safety requirements for battery storage projects. It requires every battery energy storage facility in California to have an emergency response and emergency action plan that covers the premises of the facility and is consistent with emergency action plans in Title 8, CCR. The owner or operator of the facility must coordinate with local emergency management agencies, unified program agencies, and local first responders to develop the plan and must submit the plan to the county and, if applicable, the city where the facility is located.

California Public Utilities Commission's General Order (GO) 167-C. This order establishes standards to enhance safety of Battery Energy Storage Facilities and orders that facilities are effectively maintained and operated to ensure safe and reliable service.

California Department of Forestry and Fire Protection (CAL FIRE). CAL FIRE firefighters respond to daily emergencies including wildland fires, structure fires, accidents, heart attacks, lost hikers, spills, train wrecks, floods and earthquakes. They protect over 31 million acres of California's wildlands and provide emergency services in 36 of the state's 58 counties.

California Health and Safety Code, Sections 25500-25541. The California Health and Safety Code, Sections 25500 through 25541 requires local governments to regulate local business storage of hazardous materials in excess of certain quantities. The law also requires that entities storing hazardous materials be prepared to respond to releases. Those using and storing hazardous materials are required to submit a hazardous material business plan (HMBP) to their local Certified Unified Program Agency (CUPA) and to report releases to their CUPA and the State Office of Emergency Services.

Local

Alameda County Department of Environmental Health (ACDEH). The designated CUPA for the project is the Alameda County Department of Environmental Health (ACDEH). ACDEH coordinates and enforces numerous local, state, and federal hazardous materials management and environmental protections programs in the county. The HMBP Program is administered throughout Alameda County and its incorporated cities and is used to protect public health, the environment and groundwater from risks or adverse effects associated with the improper storage and handling of hazardous materials. The HMBP fulfills the requirements of the California Health and Safety Code, Sections 2550, et seq., and the related regulations of 19 CCR 2620 et seq.

Alameda County Code of Ordinances. The Alameda County Code of Ordinances adopts in its entirety of the 2022 CFC with certain deletions, modifications, and amendments outlined in Chapter 6.04 (Alameda County Fire Code). Chapter 6.05 (Fire Severity Map Ordinance) designates areas within county limits that CalFire has determined, under Government Code Section 51179, as very high fire hazard severity (VHFHS) zones. Chapter 15.08 (Building Code) adopts the California Building Code, Chapter 15.12 (Electrical Code) adopts the California Electrical Code, and Chapter 15.16 (Mechanical Code) adopts the California Mechanical Code.

Alameda County General Plan. The Safety Element of the Alameda County General Plan outlines Alameda County's planning strategies regarding emergency management and response, fire hazards, flood hazards, seismic and geological planning, airport hazards, and hazardous materials (Alameda County, 2022). Policies in the Safety Element seek to create an effective emergency response and management system for Alameda County (Alameda County, 2022). The following list consists of the policies of the Safety Element relevant to fire protection:

- **Policy 3.3-P4:** All urban and rural development, existing and proposed, should be provided with adequate water supply and fire protection facilities and services. Facilities serving hill area development should be adequate to provide both structural and wildland fire protection. The primary responsibility falls upon the owner and the developer.

- **Policy 3.3-P6:** Plan new public and private buildings to minimize the risk of fires and identify measures to reduce fire hazards to persons and property in all existing development.
- **Policy 3.3-P10:** The County shall require the design of adequate infrastructure if a new development is located in a state responsibility area (SRA) or in a very high fire hazard severity zone, including safe access for emergency response vehicles, visible street signs, and water supplies for structural fire suppression.
- **Policy 3.3-P11:** The County shall require the use of fire resistant building materials, fire resistant landscaping and, and adequate clearance around structures in "high" and "very high" fire hazard areas.
- **Policy 3.3-P13:** The County shall work cooperatively with public agencies with responsibility for fire protection and refer development applications to the Alameda County Fire Department, or the local Fire District for review and recommendation.
- **Policy 3.3-P17:** The County shall avoid or minimize the wildfire hazards associated with new uses of land.

Alameda East County Area Plan. The East County Area Plan (ECAP) is an Area Plan implementing the General Plan in the East County Area (including the project site). The ECAP provides for the long-range direction and development of land within the ECAP area. The ECAP was designed to preserve and enhance agriculture and agricultural lands, and to protect the natural qualities, the wildlife habitats, the watersheds, and the beautiful open space of Alameda County from excessive, badly located, and harmful development (Alameda County, 2002). The following list consists of the ECAP policies relevant to fire protection:

- **Policy 319:** The County shall adhere to the provisions of the Alameda County Fire Protection Master Plan and Fire Hazard Mitigation Plan.
- **Policy 320:** The County shall consider, in reviewing development projects and subdivision of agricultural lands, the severity of natural fire hazards, potential damage from wildland and structural fires, the adequacy of fire protection services, road access, and the availability of an adequate water supply and pressure.
- **Policy 323:** The County shall refer development applications to the County Fire Patrol, or local fire district, for review and recommendation.
- **Policy 324:** The County shall require the use of fire resistant building materials, fire-resistant landscaping, and adequate clearance around structures in "high" and "very high" fire hazard areas.

General

Pacific Gas and Electric Company (PG&E) follows Federal Energy Regulatory Commission's Good Utility Practice and PG&E's Standard Construction Practices.

Cumulative Setting

CEC staff reviewed the potential for the construction and operation of the project combined with the existing baseline and expected new major energy projects in the project vicinity to result in impacts on the fire and emergency service capabilities of the ACFD (**Appendix A, Table A-1**). Of those projects, CEC staff identified six major projects additional to the project that could cause a cumulative impact to the ACFD.

These projects are:

- 1: Mulqueeney Ranch Wind Repowering Project
- 2: Griffith Energy Storage Project (Kola)
- 3: Jess Ranch Compost Project
- 4: Sand Hill Wind Repowering Project
- 5: PA-2400335 (A)
- 6: Viracocha Hills BESS (Reclaimed Wind)

4.4.2 Impacts

Workers at the proposed facility would operate equipment and handle hazardous materials and may face hazards that can result in accidents and serious injury. Protective measures are employed to eliminate or reduce these hazards or to minimize the risk through special training, protective equipment, and procedural controls.

The purpose of this analysis is to assess whether the worker safety and fire protection measures proposed by the applicant are adequate to:

- Be consistent with applicable safety LORS;
- protect the workers during construction, commissioning, and operation of the facility;
- protect against fire; and
- provide adequate emergency response procedures.

Worker Safety

Industrial environments are potentially dangerous during construction, commissioning, operation, and decommissioning of facilities. Workers at the proposed project would be exposed to loud noises, moving equipment, trenching/excavation accidents, electrical hazards, battery fires, and herbicides during and after applications. The workers could experience falls, trips, burns, lacerations, being struck by objects, and numerous other potential injuries. Well-defined policies and procedures, training, and hazard recognition and control at the facility are important to minimize such hazards and protect workers. Conformance with applicable LORS would help ensure workers would be adequately protected from health and safety hazards.

A Construction Health and Safety Program (Condition of Certification [COC] **WORKER SAFETY-1**) and an Operations and Maintenance Health and Safety Program (COC **WORKER SAFETY-2**) would be prepared by the applicant to minimize worker hazards during construction and operation. CEC staff uses the phrase "Health and Safety Program" to refer to the measures that would be taken to ensure compliance with the applicable LORS during the construction and operational phases of the project.

Construction Health and Safety Program

The project encompasses construction and operation of a BESS and ancillary equipment, as well as transmission and interconnection equipment to the point of interconnection (POI) within the Tesla Substation. Workers would be exposed to hazards including physical, chemical, biological and general construction hazards.

Construction Safety Orders applicable to project construction discussed above are promulgated by Cal OSHA and are published at CCR, title 8, sections 1502, et seq. The Construction Health and Safety Program would include the following major programs:

- Construction Injury and Illness Prevention Program (CCR, tit. 8, § 1509)
- Construction Heat Illness Prevention Plan (CCR, tit. 8, § 3395)
- Construction Fire Prevention Plan (CCR, tit. 8, § 1920)
- Personal Protective Equipment Program (CCR, tit. 8, § 1514 to 1522)
- Construction Emergency Action Plan (CCR, tit. 8, § 3220)

Additional programs under Construction Safety Programs (CCR, tit. 8, §§ 3200 to 6184), Electrical Safety Orders (CCR, tit. 8, §§ 2299 to 2974) include various safety and health programs.

The application adequately outlined the Construction Health and Safety Program for the project. However, outlining the appropriate elements of the plan does not ensure compliance with the program. Therefore, CEC staff proposes COC **WORKER SAFETY-1,** which would require the project owner to identify and provide the required elements and detailed plans of the Construction Health and Safety Program to the Compliance Project Manager (CPM) for approval and to the ACFD for review and comment prior to the start of construction of the project.

Operations and Maintenance Health and Safety Program

Prior to the start of commissioning and operations, the Operations and Maintenance Health and Safety Program would be prepared. This operational safety program would include the following major programs and plans:

- Injury and Illness Prevention Program (CCR, tit. 8, § 3203)
- Fire Protection and Prevention Program (CCR, tit. 8, § 3221)

- Fire Protection System Impairment Program (2020 National Fire Protection Association (NFPA) 850 Section 17.4.2 & Chapter 9 CFC Sections 901.7, 901.7.1-901.7.6)
- Personal Protective Equipment Program (CCR, tit. 8, §§ 3401 to 3411)
- Emergency Action Plan (CCR, tit. 8, § 3220)

The HMBP and Spill Prevention Control and Countermeasure (SPCC) Plan are required through COC **HAZ-1** in **Section 5.7, Hazards, Hazardous Materials/Waste, and Wildfire**. In addition, the requirements under General Industry Safety Orders (CCR, tit. 8, §§ 3200 to 6184) and Electrical Safety Orders (CCR, tit. 8, §§ 2299 to 2974) would be applicable to this project. In addition, the use of herbicides (if proposed) to control vegetation growth near the BESS would require adherence to 8 CCR § 5155 and other relevant sections regarding worker exposure to toxic substances.

The application also adequately outlined the Operations and Maintenance Health and Safety Program for the project. However, outlining the appropriate elements of the plan does not ensure compliance with the program. Therefore, CEC staff proposes COC **WORKER SAFETY-2** which would make it a requirement to identify and provide elements and detailed plans of the Operation and Maintenance Health and Safety Program to the CPM for approval and to the ACFD for review and comment prior to the start of commissioning of the project.

The measures in these plans would be derived from applicable sections of state and federal law. Both health and safety programs would comprise more specific programs and would require the major items detailed in the following paragraphs.

Injury and Illness Prevention Program. The Injury and Illness Prevention Program (IIPP) is a key worker safety and health program that identifies the person(s) with authority and responsibility for implementing the program, ensures that employees utilize safe and healthy work practices, identifies and evaluates workplace hazards and corrects them, and implements an employee training program. The IIPP shall also include a Construction Heat Illness Prevention Plan in accordance with Title 8 CCR, § 3395.

CEC staff proposes that the applicant submit a final IIPP to the CPM for review and approval to satisfy proposed COC **WORKER SAFETY-1** and COC **WORKER SAFETY-2**.

Fire Prevention Plan. CCR requires an Operations Fire Prevention Plan (CCR, tit. 8, § 3221). This regulation applies to all fire prevention plans required in the State of California and the requirements are detailed below:

(a) Scope and Application. This section applies to all fire prevention plans. The fire prevention plan shall be in writing, except as provided in the last sentence of subsection (d)(2) of this section.

(b) Elements. The following elements, at a minimum, shall be included in the fire prevention plan:

(1) Potential fire hazards and their proper handling and storage procedures, potential ignition sources (such as welding, smoking and others) and their control procedures, and the type of fire protection equipment or systems which can control a fire involving them;

(2) Names or regular job titles of those responsible for maintenance of equipment and systems installed to prevent or control ignitions or fires; and

(3) Names or regular job titles of those responsible for the control of accumulation of flammable or combustible waste materials.

(c) Housekeeping. The employer shall control accumulations of flammable and combustible waste materials and residues so that they do not contribute to a fire emergency. The housekeeping procedures shall be included in the written fire prevention plan.

(d) Training:

(1) The employer shall apprise employees of the fire hazards of the materials and processes to which they are exposed.

(2) The employer shall review with each employee upon initial assignment those parts of the fire prevention plan which the employee must know to protect the employee in the event of an emergency. The written plan shall be kept in the workplace and made available for employee review. For those employers with 10 or fewer employees, the plan may be communicated orally to employees and the employer need not maintain a written plan.

(e) Maintenance. The employer shall regularly and properly maintain, according to established procedures, equipment and systems installed in the workplace to prevent accidental ignition of combustible materials.

CEC staff proposes that the applicant submit a final Fire Prevention Plan to the CPM for review and approval and to the ACFD for review and comment to satisfy proposed COC **WORKER SAFETY-1** and COC **WORKER SAFETY-2**.

Fire Protection System Impairment Program. National Fire Protection Association (NFPA) 850 (Standard for Fire Protection for Electric Generating Plants and High-Voltage Direct Current [HVDC] Converter Stations) and the most current CFC lay out a prescriptive method that the project owner must follow when the facility's installed fire protection system is impaired. The plan would accomplish the following:

- supervise the safe shutdown of fire protection systems;
- provide notifications to the proper authorities and representatives;
- control potential fire hazards during the impairments through the use of fire watches and/or evacuation of the area effected;

- outline a repair strategy and timeline to get the fire protection system operational; and,
- restore the fire protection system to service as soon as possible.

A Fire Protection System Impairment Program would ensure that the project owner follows the prescriptive measures laid out in NFPA 850 and the CFC. Therefore, CEC staff proposes that the applicant submit a final Fire Protection System Impairment Program to the CPM for review and approval, and to the ACFD for review and comment, to satisfy proposed COC **WORKER SAFETY-2**.

Personal Protective Equipment Program. California regulations require Personal Protective Equipment (PPE) and first aid supplies whenever hazards are present that, due to process, environment, chemicals or mechanical irritants, can cause injury or impair bodily function as a result of absorption, inhalation, or physical contact (CCR, tit. 8, §§ 3380 to 3400).

All safety equipment must meet NIOSH or American National Standards Institute (ANSI) standards and would carry markings, numbers, or certificates of approval. Respirators must meet NIOSH and Cal OSHA standards. Each employee must be provided with the following information pertaining to, among other requirements, the use and maintenance of protective clothing, when to use the protective equipment, and when and how to replace the protective clothing and equipment.

The PPE Program ensures that employers comply with the applicable requirements for PPE and provides employees with the information and training necessary to protect them from potential workplace hazards.

CEC staff proposes that the applicant submit a final PPE Program to the CPM for review and approval to satisfy proposed COC **WORKER SAFETY-1** and COC **WORKER SAFETY-2**.

Emergency Action Plan. California regulations require an Emergency Action Plan (CCR, tit. 8, § 3220).

An Emergency Action Plan must be designed to accomplish the following:

- establish emergency escape procedures and emergency escape route for the facility;
- determine procedures to be followed by employees who remain to operate critical project operations before they evacuate;
- provide procedures to account for all employees and visitors after emergency evacuation of the project has been completed;
- specify rescue and medical duties for assigned employees;
- identify fire and emergency reporting procedures to regulatory agencies;
- develop alarm and communication system for the facility;

- establish a list of personnel to contact for information on the plan contents; and
- determine and establish training and instruction requirements and programs.

CEC staff proposes that the applicant submit a final Emergency Action Plan to the CPM for review and approval and to the ACFD for review and comment to satisfy proposed COC **WORKER SAFETY-1** and COC **WORKER SAFETY-2**.

Hazardous Materials Business Plan. The California Hazardous Materials Release Response Plan and Inventory Law requires businesses that store or use hazardous materials to prepare a HMBP and submit it to the CUPA. A HMBP includes details of a facility and business conducted at the site, an inventory of hazardous materials that are handled and stored on-site, an emergency response plan, and a safety and emergency response training program for new employees with an annual refresher course. Workers and first responders to any fire, rescue, or EMS emergency are thus aware of what hazardous materials are on the site and what precautions to take to avoid exposure. CEC staff proposes that the applicant implement the HMBP through COC **HAZ-1** in **Section 5.7, Hazards, Hazardous Materials/Waste, and Wildfire**.

Spill Prevention, Control and Countermeasure Plan (SPCC Plan). The aboveground petroleum storage act (ASPA) program requires tank facilities storing greater than 1,320 gallons of petroleum (crude oil, motor oil, diesel fuel, gasoline) to develop and implement the SPCC Plan requirements. A tank facility is any tank or tanks that are aboveground, including connected piping, that contain petroleum, has secondary containment, and it is used to hold petroleum products. The CUPA regulates businesses within its district. Workers and first responders to any fire, rescue, or EMS emergency are thus aware of what petroleum products are on the site and what precautions to take to avoid exposure due to the flammability, explosivity, and toxicity of these products. A SPPC Plan would limit the size of a spill and thus decrease risk to workers. CEC staff proposes that the applicant implement the SPCC Plan through COC **HAZ-1** in **Section 5.7, Hazards, Hazardous Materials/Waste, and Wildfire**.

Additional LORS called *safe work practices* apply to the project. The construction and operations safety programs would address safe work practices. The components of these programs include, but are not limited to, the programs found in the subsection "Construction Health and Safety Program".

Health & Safety Program Monitoring

Protecting construction workers from hazards is among the greatest challenges in occupational safety and health. These hazards increase in complexity in the multi-employer worksites typical of large, complex, industrial-type projects such as the placement and wiring of a large BESS. Safety concerns are further raised by the presence of BESS units that arrive with 30 percent or greater state of charge. The standard industry practice of hiring a Construction Safety Supervisor is used to ensure a safe environment for personnel. This industry standard practice has reduced and/or eliminated hazards evident in the audits staff conducted of projects under construction.

The federal OSHA has also entered into strategic alliances with several professional and trade organizations to promote and recognize safety professionals trained as Construction Safety Supervisors, Construction Health and Safety Officers, and other professional designations. The goal of these partnerships is to encourage construction subcontractors in four areas:

- to improve their health and safety performance;
- to assist them in striving for the elimination of the four hazards (falls, electrical, caught-in or-between, and struck-by hazards), which account for the majority of fatalities and injuries in this industry and have been the focus of targeted OSHA inspections;
- to prevent serious accidents in the construction industry through implementation of enhanced safety and health programs and increased employee training; and
- to recognize those subcontractors with exemplary safety and health programs.

To date, there are no OSHA or Cal OSHA requirements that an employer hire or provide for a Construction Safety Officer. OSHA and Cal OSHA regulations do, however, require that safety be provided by an employer and the term *Competent Person* is used in many OSHA and Cal OSHA standards, documents, and directives. A Competent Person is usually defined by OSHA as an individual who, by way of training and/or experience, is knowledgeable of standards, is capable of identifying workplace hazards relating to the specific operations, is designated by the employer, and has authority to take appropriate action. Therefore, to meet the intent of the OSHA standard to provide for a safe workplace during construction, CEC staff proposes COC **WORKER SAFETY-3**, which would require the project owner to designate and provide a site Construction Safety Supervisor (CSS).

Accidents, fires, and worker deaths are known to have occurred in the past due to the failure to recognize and control safety hazards and the inability to adequately supervise compliance with occupational safety and health regulations. Safety problems have been documented by CEC compliance staff in safety audits conducted at several projects under construction. Commonly documented findings include, but are not limited to, such safety oversights as:

- lack of posted confined space warning placards/signs;
- confusing and/or inadequate electrical and machinery lockout/tagout permitting and procedures;
- confusing and/or inappropriate procedures for handing over lockout/tagout and confined space permits from the construction team to commissioning team and then to operations;
- dangerous placement of hydraulic elevated platforms under each other;
- inappropriate placement of fire extinguishers near hot work;

- dangerous placement of numerous power cords in standing water on the site, thus increasing the risk of electrocution;
- inappropriate and unsecure placement of above-ground natural gas pipelines inside the facility, but too close to the perimeter fence; and
- lack of adequate employee- or contractor-written training programs addressing proper procedures to follow in the event of finding suspicious packages or objects either on or off site.

To reduce and/or eliminate these hazards, it is necessary for the CEC to have a professional Safety Monitor available to do on-site verification checks of ongoing compliance with Cal OSHA regulations and periodically audit safety compliance during construction, commissioning, and the hand-over to operational status. These requirements are outlined in COC **WORKER SAFETY-4**. A Safety Monitor, hired by the project owner, yet reporting to the Delegate Chief Building Official (DCBO) and CPM, would serve as an "extra set of eyes" to ensure that safety procedures and practices are fully implemented at all projects certified by the CEC.

Health Hazards

Valley Fever

Coccidioidomycosis or "Valley Fever" (VF) is caused by inhaling the spores of the fungus Coccidioides immitis, which are released from the soil during soil disturbance (e.g., during construction activities) or wind erosion. Since 2017, VF infections in Alameda County are relatively steady, with infection rates ranging from approximately 4 to 8 per 100,000 people (CDPH 2025). A high-risk county has VF infections greater than or equal to 20 per 100,000 people, and thus Alameda County is considered to have low risk. The disease usually affects the lungs and can have potentially severe consequences, especially in at-risk individuals. Construction workers are often the most exposed population due to ground disturbing activities like trenching or excavating at construction sites. Treatment usually includes rest and antifungal medications. No effective vaccine currently exists for VF.

Applicable regulations with regard to VF protection and exposure can be found in the CCR, title 8, sections:

- Section 342 (Reporting Work-Connected Fatalities and Serious Injuries)
- Section 3203 (Injury and Illness Prevention)
- Section 5141 (Control of Harmful Exposures)
- Section 5144 (Respiratory Protection)
- Section 14300 (Employer Records-Log 300)
- Section 6709 (California Labor Code)

Dust control measures found in proposed COC **AQ-SC3** in **Section 5.1, Air Quality**, would be sufficient to minimize potential exposure of workers and the public to VF during soil excavation and grading.

Fire Protection

During construction and operation of the project, there is the potential for both small fires and major structural fires. Electrical sparks and shorts, combustion of hydraulic fluid, mineral oil, insulating fluid, or flammable liquids and fuels, explosions, and over-heated equipment, could cause small fires or larger ones at the BESS location. The specific fire hazards for each project component are discussed in more detail below.

O&M Facilities

Fire detection and suppression elements for the Operations & Maintenance (O&M) buildings for operations, maintenance, and storage would be consistent with the applicable provisions of the CFC. According to the project application, three O&M buildings would be constructed (4,800 square feet each) therefore sprinkler systems would not be required per the CFC. These buildings would be equipped with portable fire extinguishers.

Fires and explosions of flammable welding gases or liquids are rare. Consistency with applicable LORS would be adequate to ensure protection from fire hazards related to the individual structures. The project owner plans to undertake fire prevention practices during construction and operations and prepare a project-specific Fire Prevention Plan. Access to the site for fire and other emergency vehicles shall be available at two separate locations via site personnel or locked gates. Emergency departments such as the ACFD, CAL FIRE, the Alameda County Sheriff, and the California Highway Patrol shall be given access to the locked gates via keys or any other means as described in both the construction and operations fire prevention plans described in COCs **WORKER SAFETY-1** and **WORKER SAFETY-2**.

BESS Facility

Energy Storage Technology Overview

The power generation industry is progressing to alternative energy resources such as photovoltaic power, wind power, and BESS, among other energy storage methods. BESS can provide fast and steady response, adaptability, controllability, and geographical independence. Battery technologies for energy storage have varying chemistries and energy densities which include lead-acid, lithium-ion, nickel-cadmium, nickel-metal hydride, sodium-sulfur and vanadium-redox. Lithium-ion batteries have one of the highest energy densities and are the primary battery chemistry used by manufacturers such as Tesla, LG, and CATL.

Lithium-ion batteries are the predominant chemistry used in utility scale BESS (defined as larger than 50 MW) and are anticipated to remain so for the next decade. Data shows that in the United States by the end of 2022 about 9 GW of energy storage has

been added to the U.S. grid since 2010 (DOE National Renewable Energy Laboratory 2023). Of the new storage capacity, more than 90 percent has a duration of 4 hours or less, and in the last few years, lithium-ion batteries have provided about 99 percent of new capacity (DOE National Renewable Energy Laboratory 2023). This demonstrates that for grid-scale BESS, lithium-ion batteries are the nearly exclusive stationary energy storage technology currently being deployed.

There are several types of lithium-ion chemistries but there are two types that are used extensively in BESS. The first one is lithium nickel manganese cobalt (NMC) and the second is lithium iron phosphate (LFP). Initially, the industry relied on the lithium NMC batteries for utility scale BESS. However, the industry has been shifting to the LFP batteries due to safety concerns and cost competitiveness. Lithium NMC batteries typically have higher energy density and smaller size units compared to LFP batteries, which means they can store more energy in a smaller package. Yet they also are not as thermally stable as LFP batteries thus leading to a greater risk of thermal runaway and battery fires.

LFP batteries appear to have greater safety and thermal stability due to their LiFePO4 chemical structure than NMC batteries (Brand, M., 2013; Evlithium 2025; Tran, M-K, 2021). They are less prone to thermal runaway and combustion, provide a significantly longer cycle life, considered more environmentally friendly due to their relatively non-toxic constituents, and readily available raw materials.

The Project BESS

The project applicant is still finalizing which battery supplier would be used, but has narrowed it down to two suppliers which both use LFP chemistry. The LFP battery cells are the energy-producing units and contain a metal (lithium iron phosphate) as the cathode, graphite as the anode, and an electrolyte (typically a solution of a lithium salt, like lithium hexafluorophosphate (LiPF6) dissolved in an organic solvent). For the MP2XL, cells are placed in trays and there are three trays per module. Many modules make up a unit (see **Figure 4.4-1** for an example of a BESS unit). For the SolBank 3.0, cells are placed in a pack (104 cells) and 4 packs make up a rack. Each unit contains 12 racks.

Both suppliers being considered by the project applicant utilize passive thermal runaway protection methods (i.e., insulation between cells/modules) and no active fire suppression systems are provided because the BESS units are non-walk-in enclosures. This analysis considers two BESS options: (1) Tesla Megapack 2XL (MP2XL) and (2) Canadian Solar Inc. (CSI) SolBank 3.0

Tesla MP2XL. The Tesla MP2XL includes an explosion control system to mitigate the risk of deflagration[1]. The system includes pressure-sensitive vents (overpressure vents)

1 Deflagration is a rapid, subsonic combustion (burning) where heat and flame spread through a fuel (gas, vapor, dust) at a speed slower than sound, transferring energy via heat conduction and turbulence.

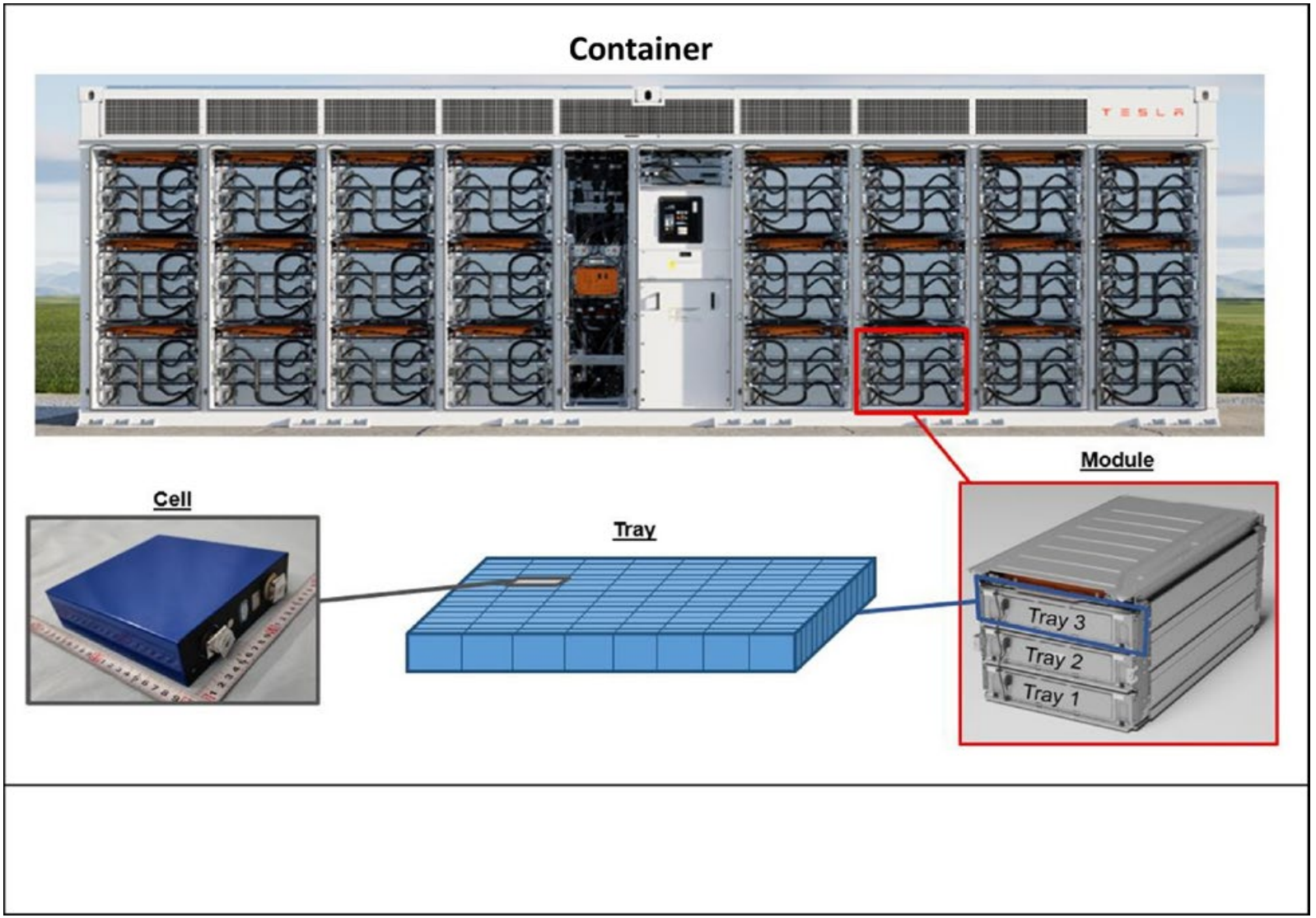
and sparkers installed throughout the battery module bay. The sparkers are designed to ignite flammable gases very early in a thermal runaway event before they accumulate within enclosure and become an explosion hazard. Sparkers are installed at a variety of locations and heights throughout the battery module bays to ensure the flammable gases released during thermal runaway quickly meet an ignition source and are sparked to neutralize the flammable gases before they can build up to a dangerous concentration.

The overpressure vents are installed in the roof of the sealed battery bay's ingress protection (IP) enclosure. Overpressure vents are designed to relieve the pressure inside the enclosure before the enclosure fails. They are passive vents that open at an internal cabinet pressure of 12 kPa. Once opened, the overpressure vents permit gases, products of combustion, and flames to safely exhaust through the roof of the BESS unit during a thermal event. The release of the overpressure vents does not create a projectile hazard since they are installed in between the battery module bays and thermal roof and are not exposed to the environment. By releasing the pressure through the roof, surrounding units are not damaged by the pressure release.

CSI SolBank 3.0. The SolBank 3.0 includes active ventilation systems within individual BESS units to mitigate the risk of deflagration. These systems include internal gas detectors in each battery cabinet for activation of the ventilation system (NFPA 69 compliant) to prevent the lower flammable limit (LFL) from going over 25 percent. The ventilation system is powered via a built-in uninterruptable power supply (UPS) with 24 hours backup for gas detection/fire alarms and 2 hours of active ventilation operation.

SolBank 3.0 also includes deflagration panels (NFPA 68 compliant) designed to open at a defined internal pressure threshold, allowing flammable gases, combustion products, and heat to be released in a controlled manner (through the roof) as a backup to the active ventilation system. The venting components are passive and activate automatically in response to pressure buildup within the battery compartment.

Figure 4.4-1 Cells and Battery Modules



Source: RCI 2024

Potential BESS Safety Hazards

The CEC staff's evaluation of the safety of lithium-ion batteries determined that large lithium-ion BESS installations may pose potential hazards. Because they store large amounts of energy, one of the principal hazards associated with a lithium-ion BESS is fire, which could occur if a charged battery cell was somehow damaged, for example by being opened, punctured, or crushed. A fire could also be caused if a battery cell is short-circuited, overheated, or experiences thermal runaway.

Thermal runaway is a process in which the lithium-ion cell enters an uncontrollable, self-heating state and can emit toxic gases such as hydrogen chloride, hydrogen fluoride, hydrogen cyanide, and benzene along with flammable/explosive gases including hydrogen, methane, propane, ethylene, carbon monoxide, and others. These flammable gases could potentially lead to an explosion within the BESS container. Due to the potential for fire and explosion, CEC staff concludes that the project's BESS would present a significant risk that should be mitigated.

Like most metal batteries, hydrogen and other flammable gas evolution occurs in lithium-ion batteries due to a parasitic reaction at the anode but the amount varies (even aqueous flow batteries emit small negligible amounts of hydrogen (~ 6 microliters per minute)). Some BESS enclosures feature a chimney effect convection cooling design that will automatically dissipate the small amount of hydrogen that could be outgassed. In addition, stacked enclosures can be fitted with a forced-air ventilation system if the natural convection air flow is insufficient for venting purposes. However, given the extreme range of hydrogen flammability, generation of hydrogen remains a safety issue, for any lithium-ion batteries, including the one proposed by the applicant for this project.

Confirmation of potential hazards posed by BESS installations has been provided through field experience. A notable event that led to a shift in the industry in terms of hazard mitigation at BESS installations occurred on April 19, 2019, at a BESS unit in Surprise, Arizona (a suburb northwest of Phoenix). The facility experienced a thermal runaway event, and the BESS was equipped with a suppression system but was not equipped with deflagration venting or explosion prevention systems. The failure report issued by Arizona Public Services (McMicken 2020) indicated that the suspected fire was an:

> "extensive cascading thermal runaway event initiated by an internal failure within one battery cell of the BESS. The BESS's internal fire suppression discharged a clean agent preventing the fire from spreading to surrounding battery racks. However, the compromised batteries emitted a mixture of combustible gases, which accumulated in the BESS enclosure. The fire department responded and took no immediate action due to a lack of information concerning the system and the event. When a HAZMAT team attempted to enter the BESS area to survey the scale of the event, an explosion occurred, seriously injuring four firefighters."

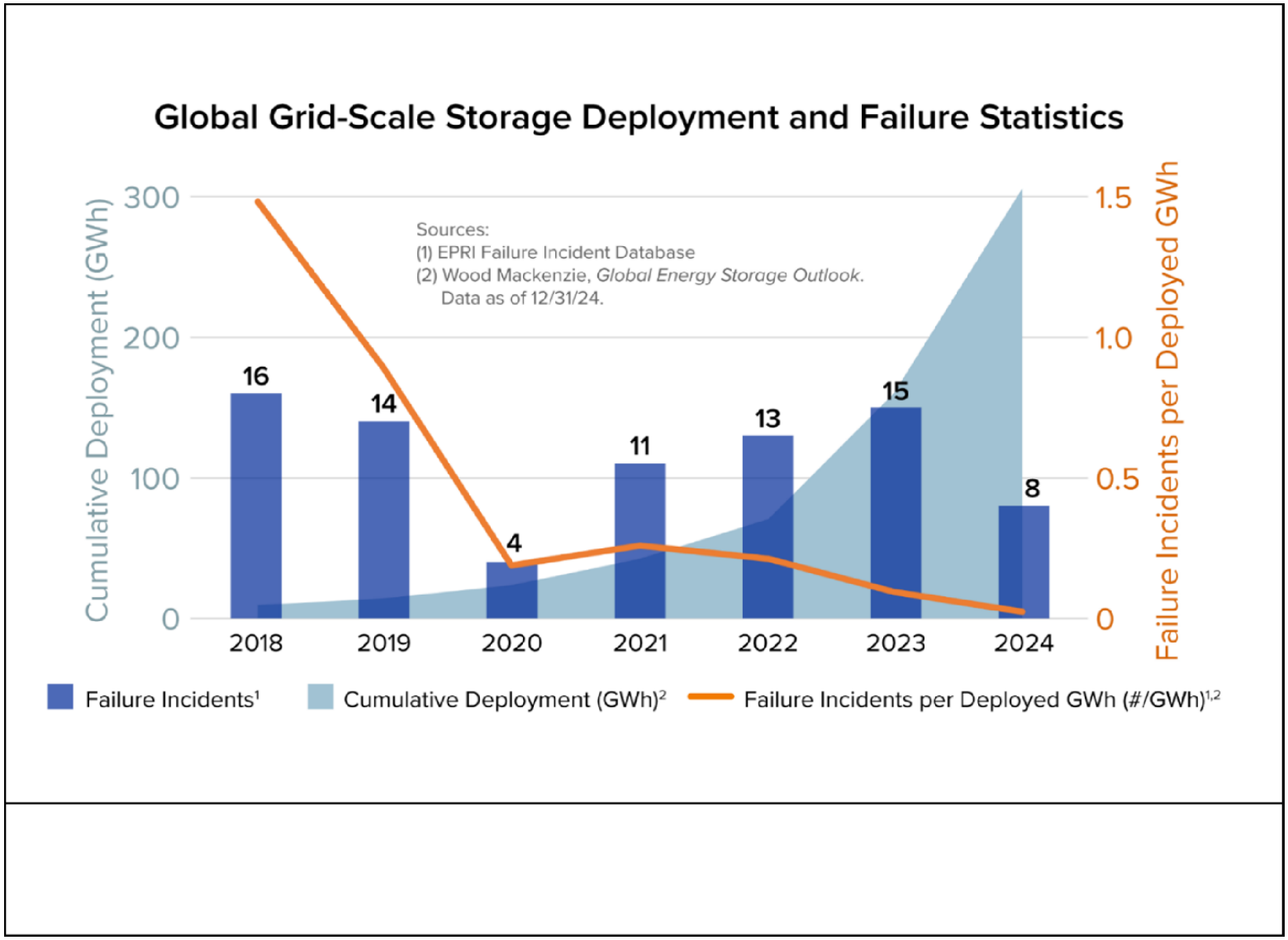
This event catalyzed further review and evaluation of the risks and hazards to workers, first responders, and the public posed by Li-ion grid-sized batteries. This failure spurred additional guidelines, recommendations, and additions to fire codes and industry standards including one important industry practice: placing the modules inside a container with no entrance possible rather than a building, which is the case for this project. While the Surprise, Arizona failure identified a battery cell internal failure, a comprehensive review of BESS incidents worldwide indicates that battery cell failures have not been the primary contributing cause to BESS failures.

Real-world use of these battery systems identifies the following failure modes (EPRI 2024a, 2024b):

- Design Failures: Flaws in the system's planned architecture, layout, or function that can arise from fundamental product flaws or a lack of safeguards.
- Manufacturing Defects: Flaws introduced during the production process, such as foreign materials in cells or incorrect physical tolerances.
- Integration, Assembly & Construction Issues: Errors during installation, component incompatibility, inadequate commissioning, or poor quality control, which can include faulty wiring, HVAC, and any internal fire suppression systems.
- Operational & Environmental Factors: Abusive operation (like overcharging, rapid charging/discharging), physical damage from impacts, or exposure to extreme environmental conditions.

The overall utility-scale BESS failure rate has sharply decreased while the global installed capacity has dramatically increased (see **Figure 4.4-2**). BESS failure incident data and transparency is limited because there is no publicly disclosed data that links failure incidents by cause of failure. Industry reticence to disclose failures and the prevalence of non-disclosure agreements hamper public release of such information. Electric Power Research Institute's (EPRI) 2024 White Paper recognizes the lack of data and has attempted to address the failure mode analysis gap by drawing from their own failure incident database consisting of 81 incidents between 2018 and 2024. Failures typically occur early in the project's lifecycle, but this could be due to the lack of older systems that exist at this point. Nevertheless, according to the research at least 72 percent of failure incidents, where the system's age is known, occur during construction, commissioning, or within the initial two years of operation. The most recent data from EPRI shows that the failure rate dropped by 98 percent from 2018 to 2024 as lessons learned from early failures have been incorporated into the latest designs and best practices (EPRI, 2024a).

Figure 4.4-2 Global Grid-Scale Deployment and Failure Statistics



Source: EPRI, 2024a

EPRI's analysis challenges the widespread assumption that the lithium-ion battery cell is the primary cause of failure. All phases across the BESS lifecycle contribute to failure incidents. Integration, assembly, and construction contribute the most to failure incidents (EPRI 2024a; EPRI 2024b), with the majority of cases involving controls (46 percent) and balance of system (BOS) components (43 percent) (EPRI 2024a; Kaliaperumal 2021; Menye 2025). These BOS components encompass DC and AC wiring, heating, ventilation and air conditioning (HVAC) subsystems, and safety features like fire suppression systems. Investigations into these incidents uncovered that many failures occurred when the state of charge (SOC) was greater than 90 percent. Design flaws, such as not considering all operating conditions, have also caused problems.

Controls related to the battery management system (BMS), HVAC, and other systems plus BOS components account for most failed components (89 percent). Only 11 percent of failure incidents were directly caused by the battery cells themselves (EPRI 2024a). However, many incidents labeled as "controls" failures stemmed from operational challenges tied to managing battery cell SOC, voltage, and current issues rooted in cell limitations. These were categorized as controls failures instead of cell/module issues because they could have been avoided by enforcing stricter operational limits.

EPRI's recommendations include enhanced site-specific hazard assessments, improved battery monitoring and analytics, better workforce training, and stricter quality controls during manufacturing and installation. EPRI's analysis shows that all stages of the product lifecycle play a critical role in BESS safety and require thorough engineering and testing. Greater industry transparency on failure incidents is vital for future causes of failure analysis, ongoing safety research, and the safe operation of future developments.

As indicated by EPRI, it can be hard to ascertain the exact cause of BESS fires because root cause analyses are not always shared with the regulator or fire department as they can be considered proprietary by battery manufacturers. Sharing this valuable information would help to educate stakeholders on what happened and what could be done to improve BESS safety. To help ensure that this information is disclosed if a BESS incident were to occur, CEC staff proposes COC **WORKER SAFETY-7** which would ensure that any root cause analysis is provided to the CEC and local fire department for review and comment.

BESS Incidents in California

CEC staff has attempted to learn and review incident reports for the more recent BESS safety incidents since 2022 in California. Several of these are discussed in detail below:

1. PG&E; Elkhorn Battery Energy Storage Facility, September 20, 2022
2. Terra-Gen; Valley Center Energy Storage Center, September 18, 2023
3. Convergent; Orange County Energy Storage 2, July 17, 2024

4. REV Renewables; Gateway Energy Storage Facility, May 15, 2024
5. SDG&E; Northeast Operations Center, Escondido, September 5, 2024
6. Vistra; Battery Energy Storage Facility, January 16, 2025
7. Arevon; California Flats Solar Project, August 30, 2025

2022 Elkhorn BESS Incident

CEC staff inspected the site of the Tesla Megapack fire that occurred on September 20, 2022, at the Elkhorn Battery Energy Storage Facility near Moss Landing, CA, where one out of a total of 256 Megapacks caught fire. The North County Fire Protection District (NCFPD) responded to the incident and proceeded to let the fire burn itself out per Tesla's emergency action plan for first responders. The fire department used onsite fire water monitors (water cannons) to cool adjacent modules to prevent them from overheating. The NCFPD also had access to a Command-and-Control (CNC) center outside of the BESS facility. The CNC gave firefighters access to the BESS telemetry that was relayed to Tesla along with feeds to the thermal infrared cameras that were placed around the site. This information allowed the incident commander to see what BESS enclosure was on fire based on the BESS telemetry and confirmed with the infrared cameras. It also allowed the incident commander to create an action plan to safely battle the fire and to monitor the situation in real time. CEC staff learned that during project commissioning, the project owner had provided training opportunities to the NCFPD for practicing how to deal with a fire at the facility.

2023 Valley Center Terra-Gen BESS Fire

The outdoor LG container battery storage unit in Valley Center northern San Diego County (140 MW/560 MWh) had its first BESS unit fire on April 5, 2022. It appears that some of these units contained a sensor system that experienced a fault which triggered the water-based protection systems and caused the fire. Faulty sprinkler systems have also been described as the cause of several other notable fires at large-scale battery storage projects. Another fire occurred on the evening of September 18, 2023 (Energy Storage News 2023). The Fire and Sheriff's departments were dispatched, roads were closed and out of an abundance of caution an evacuation order for the surrounding 0.25 mile was issued. Additionally, a shelter in place was issued for the 0.5 mile surrounding the site. Fire officials said the fire was put out in about 45 minutes and extinguished by the site's internal fire prevention system (San Diego Union-Tribune 2024). The evacuation and shelter in place orders were lifted after 4 hours. The facility's design kept the incident contained and San Diego County Hazardous Materials team monitored the air and water around the site during the incident and found no hazardous conditions. Although an official root cause report is not available, fire department officials thought the fire was likely caused by thermal runaway within a single lithium-ion battery.

2024 Orange County BESS Incident

On July 17, 2024, there was an incident at the Convergent Energy Storage Facility in Santa Ana, California which is composed of outdoor, containerized Li-Ion BESS. The fire resulted in extensive damage to one container and exposure damage to additional nearby containers. The industrial area was temporarily evacuated for approximately one hour due to concerns about toxic smoke emissions (Orange County Register, 2024). At the time of the incident the cause of the fire was undetermined according to Orange County Fire Authority (OCFA) incident reporting.

2024 Otay Mesa BESS Incident

On May 15, 2024, there was an incident at the 240-MW Gateway Energy Storage Facility (GESF) in Otay Mesa, California which is composed of five buildings that house the BESS. There was a thermal runaway event in one battery rack in building three (in the middle of the five-building unit row) which caused a fire at the GESF. GESF is a battery-in-a-building project, which CEC staff has found to be rare with only four located in the state, with fire barriers, a chemical suppression system, and a pre-action fire protection system. The chemical fire suppression activated but did not put out the fire. The pre-action system then activated allowing the flow of water to help contain the fire. The fire department appears to have made the decision to keep the pre-action sprinkler water flowing to keep the temperature down and to help protect the integrity of the roof to avoid collapsing. Additionally, the firefighters had to cut into the building to allow more water to be sprayed into it to help control the fire. The fire burned itself out by May 22, 2024. CEC staff visited the site on May 29, 2024, and found that structural integrity of the building was being assessed due to the incident. CEC staff's conclusion is that the BESS "failed safely." Equipment worked as planned, the fire department knew what it had to do, and there were no injuries to onsite staff, the firefighters, or the public. However, this incident illustrates the challenges of placing grid scale BESS into dedicated buildings when an incident occurs.

2024 Escondido BESS Fire

On September 5, 2024, a fire erupted at San Diego Gas & Electric's (SDG&E) 30 MW/120 MWh BESS facility in Escondido, California. The fire was confined to a single containerized unit out of the 24 on-site and lasted approximately 13 hours before burning out. The blaze broke out in one of the battery storage containers and quickly escalated. According to reports, the fire was first detected by the facility's monitoring systems, triggering an immediate response from SDG&E personnel and local emergency services. The internal unit's fire suppression system activated, but was unable to extinguish the fire due to the intense heat generated by the thermal runaway event. Firefighters arrived on the scene and implemented specialized containment strategies to prevent the fire from spreading to adjacent containers. The event was limited to one of 24 battery storage containers. There were no reported injuries (Energy Storage News, 2024). Along with the San Diego County Hazardous Materials Division, the San Diego County Health Department and the City of Escondido, SDG&E actively monitored air quality at the site of the fire and in the evacuation area throughout the incident.

Sampling locations and screening levels were identified under the guidance of the County and City Incident Coordinator, who have reviewed all results along with SDG&E and determined that the air quality did not pose a health risk for those on site or in the evacuation area (SDG&E 2024). Investigations into the root cause of the fire have not yet been released to the public, but preliminary reports suggest a possible electrical fault or manufacturing defect within one of the battery cells.

2025 Moss Landing BESS Incident

Another fire occurred on January 16, 2025, at the 300 MW Moss Landing Battery Energy Storage Facility (MLBESF) owned by Vistra Energy. This facility houses one of the world's largest indoor BESSs. Unlike the GESF though, the building was not purpose-built but rather was placed inside a repurposed turbine hall formerly used by the Moss Landing Power Plant. The fire spread from one rack to others and eventually engulfed most of the building. The blaze prompted the evacuation of approximately 1,200 to 1,700 residents from nearby communities and released plumes of black smoke, raising safety concerns. The cause of the incident is currently under investigation. This incident also demonstrates the challenges of placing grid scale BESS inside buildings.

2025 Arenal California Flats Solar Project

On August 30, 2025, a fire broke out at the California Flats Solar Project, located southeast of Parkfield in the far southeast corner of Monterey County, a sparsely populated area very close to the borders with Fresno, Kings, and San Louis Obispo Counties. The facility consists of 130 MW of solar photovoltaic generation with a 240 MWh BESS composed of 85 Tesla Megapack units. Cal Fire Station #41 in nearby Parkfield was the first to respond. Although CEC staff have not yet received the full incidence report, this much is known. The incident began in the late morning involving two Megapack battery containers and was originally reported as a vegetation or brush fire. Out of an abundance of caution, the Monterey County Sheriff's Office quickly issued an evacuation order for a two-mile radius, affecting five rural residences in the surrounding area. That order was lifted 3 hours later. Tesla's Field Response Team was dispatched to the site to evaluate the situation. After conducting a safety assessment, they determined that the fire had stabilized and posed no further danger to the public. Fire crews continued to monitor the scene through the night, using a containment approach that allowed the burning battery units to extinguish themselves under controlled conditions. No injuries or off-site damages were reported (KSBY, 2025).

CEC staff's review of BESS incident history demonstrates that siting a BESS facility outdoors in containers and not inside of a building minimizes the damage caused by thermal runaway fires and reduces the threat of fire propagation. BESS outdoor container fires are typically limited to a single container and can last anywhere from under an hour to 13 hours or more. Proper training for first responders with the appropriate fire water supply infrastructure and monitoring infrastructure can be critical for safely limiting fire damage and controlling the fire. There have been no deaths from a BESS fire at a utility scale facility in California or the United States (American Clean Power, 2023).

Transportation Safety Issues

In addition to the fire and explosion risks discussed above, there is also the possibility of fire during the transport of the Li-ion containers. The MP2XL batteries would be purchased from TESLA and shipped to the site. There have been several recent transportation accidents on highways involving Li-ion batteries falling off flatbed trucks resulting in fires and highway closures including two in California in 2024. On Friday July 26, 2024, an overturned semi-truck transporting lithium batteries caught fire, shutting down I-15 near Baker in San Bernardino County for 40 hours. The incident was cleared at approximately 3 a.m. on Sunday, July 28, and traffic was reopened on I-15 (Caltrans 2024). Another incident and fire occurred September 26, 2024 in San Pedro, CA, when a semi-truck carrying six large lithium-ion batteries overturned, sparking a fire and hazardous materials concerns while also forcing a closure of the 47 Freeway and the Vincent Thomas Bridge, causing major traffic backups in the area (ABC News 2024). Los Angeles Fire crews stated that attempting to put the fire out with water was not advisable due to the large amounts of water needed and the possible contamination from water run-off. There were no immediate reports of injuries, evacuations or widespread hazardous warnings.

CEC staff has reviewed this matter and found that the Pipeline and Hazardous Materials Safety Administration (PHMSA) issued a final rule that became effective on January 20, 2023, that required all Li-ion batteries transported by air to have a state of charge (SOC) of 30 percent or less. This regulation was issued to enhance the safety of transporting li-ion batteries in aircraft. The SOC limit has been shown to halt or minimize the propagation of thermal runaway within a package, decrease heat release values, and the SOC affects the flammability limits in an apparent parabolic matter, where the widest flammability limits are at or near 100 percent (PHMSA 2018). Therefore, reducing the SOC during transportation reduces the severity of the thermal runaway, slows or eliminates propagation of the thermal runaway, and reduces the volume of flammable gases vented during thermal runaway. Unfortunately, there is not a similar rule for ground transportation. Though some Li-ion batteries could be shipped via ground transport with a SOC of 30 percent, there is no guarantee that this would occur. Therefore, CEC staff proposes COC **WORKER SAFETY-7** which would require the project owner to ensure that any Li-ion batteries shipped to the project site would not have an SOC above 30 percent.

Methodology

Construction and Operations

CEC staff uses a variety of recent industrial standards (UL Solutions and NFPA), CPUC GO 167-C, and the latest edition of the CFC to guide its evaluation of BESS projects that seek a license to construct and operate. These codes and industrial standards include:

- California Fire Code, Chapter 12, contains fire safety requirements for stationary Lithium-ion battery energy storage systems;

- CPUC General Order (GO) 167-C Enforcement of Maintenance and Operation Standards for Electric Generating Facilities and Energy Storage Systems;
- NFPA 855: Standard for the Installation of Stationary Energy Storage Systems (Second Edition – 2023);
- UL 9540 (2023): Standard for Safety for Energy Storage Systems and Equipment; and
- ANSI/CAN/UL 9540A (2025), the Standard Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems.

California Fire Code (CFC)

The CFC was amended in August 2024, to include section 1207 et seq. pertaining the BESS facilities. Some of the many safety provisions include requiring the following:

- Large-scale fire testing
- A commissioning plan
- Ongoing Inspection and Testing
- Toxic gas exhaust systems
- A hazard mitigation analysis
- A decommissioning plan

The BESS would comply with the current CFC (regardless of the final battery supplier chosen for the project BESS), which governs the code requirements to minimize the risk of fire and life safety hazards specific to BESS used for load shedding, load sharing and other grid services (CFC, ch. 12 § 1206).

CPUC GO 167-C

In the most recent March 13, 2025, iteration of General Order 167 (GO 167-C), the CPUC affirmed its jurisdiction over the "maintenance and operation of electric generating facilities and power plants so as to maintain and protect the public health and safety of California residents and businesses, to ensure that electric generating facilities are effectively and appropriately maintained and efficiently operated, and to ensure electrical service reliability and adequacy." (CPUC 2025) GO 167-C adds new safety standards for the maintenance and operation BESS installations including:

- BESS owners must develop emergency response and emergency action plans, as required by SB 38.
- Technical updates to the standards to improve safety reliability, and effectiveness of operation and maintenance activities, such as establishing technical logbook standards for battery storage systems and expanding requirements for emergency plans that relate to all electric generating facilities.

CEC staff believes that GO 167-C will enhance the safety and reliability of the proposed BESS facility and the project owner is required to develop emergency response and emergency action plans and meet new technical standards specified in revisions to CPUC GO 167-C, regardless of the final battery supplier chosen for the project BESS.

NFPA 855

NFPA 855 is the Standard for the Installation of Stationary Energy Storage Systems. The project owner has stated that the BESS would be built to comply with NFPA 855. CEC staff concurs that NFPA 855 would improve the safety of the BESS. NFPA 855 (Second Edition - 2023) was incorporated into the CFC effective January 1, 2026, requiring project compliance. However, NFPA 855 (Third Edition – 2026) was just released on September 11, 2025, and will not be referenced as a standard in Chapter 80 of the California Building Standards Code and will not be enforceable. CEC staff has determined that due to the rapidly changing nature of the BESS industry it would be advisable to use the latest NFPA 855 standard since it now incorporates the latest safety practices. Therefore, CEC staff proposes COC **WORKER SAFETY-6** which require the project owner to follow the latest version of NFPA 855, for the construction, commissioning, and operation of the BESS, regardless of the final battery supplier for the project BESS.

UL 9540

UL 9540 lists requirements for BESSs supporting the local-area electric power systems or the electrical utility power grid. UL 9540 is the primary safety standard that certifies a BESS as an integrated whole, ensuring that all components (i.e., battery modules, power conversion system, battery management system, and thermal controls) operate safely together. Rather than testing parts in isolation, UL 9540 evaluates how these subsystems interact, covering electrical, mechanical, control, and fire safety performance. It verifies proper coordination between the BMS and inverter, system-level fault protection, safe shutdown behavior, and containment of thermal events (with UL 9540A used to assess fire propagation). In short, UL 9540 ensures that the entire assembled BESS functions safely and reliably as one integrated system. The project would be required to comply with UL 9540 as it is required by the CFC.

UL 9540A

UL 9540A is the American and Canadian national standard for addressing thermal runaway propagation for energy storage systems, which provides the standard test methodology for determining fire and explosion hazards presented by a given BESS design when undergoing an overheating failure, such as thermal runaway. As mentioned above, CEC staff relies on the UL 9540A standard testing protocol and report to assess the possibility of a thermal runaway reaction for BESS projects. This test method was developed by UL Solutions (formerly Underwriters Labs), a company that researches safety and development of standards addressing the risk from fires and electric shocks (UL Solutions 2025). OSHA and Cal OSHA both require that almost all electrical devices and cables in workplaces meet the relevant UL standards. Test results

on these types of batteries have demonstrated that under thermal runaway conditions, emissions can include flammable or explosive gases including hydrogen, methane, propane, and ethylene.

Tesla MP2XL. The Tesla MP2XL underwent cell testing in a laboratory where the cell was forced by an external heating method to go into thermal runaway. While in thermal runaway, it was found to emit flammable gases which were captured and analyzed. Having failed the test by going into the heat-induced thermal runaway, the test protocol required a second UL 9540A testing of a module. The MP2XL underwent module testing where again flammable gases were emitted and thermal runaway was not contained by the module design which then required UL 9540A unit level testing.

The unit level testing was not conducted on the MP2XL because it was conducted on the Tesla Mega Pack 2 (MP2). Tesla, the manufacturer, and the project owner contend that the two systems are similar enough that the test results can be considered similar. The chemistry (Lithium Iron Phosphate or LiFePO4), the cell composition, and the module compositions are the same between the MP2 and the MP2XL. Additionally, the only difference between the two BESS containers is that the MP2 has 19 racks of batteries while the MP2XL has 24 racks making the MP2XL longer than the MP2 to accommodate the extra 5 racks. Since the UL9540A test can't define an exact source of ignition, CEC staff makes the reasonable assumption that the ignition source could exist in many different locations in a battery unit; in fact, it has already happened in real-life situations. However, since the only difference between the MP2 and the MP2XL is that a few more racks exist in the MP2XL, the test results of the MP2 are sufficient to predict and be a proxy for the hazard risk of the MP2XL. Therefore, based on the results of the unit testing of the MP2, the MP2XL also has a risk of thermal runaway.

The UL9540A unit level fire testing of the MP2 demonstrated that an internal failure event causing thermal runaway will not propagate thermal runaway throughout the battery module. To meet this performance criteria, the unit must contain a battery failure without producing external flames, excessive heat on adjacent modules, or high temperatures on nearby exposures. The unit cannot create any explosion hazards such as deflagrations or projectiles and heat flux along the accessible egress path must remain below 1.3 kW/m². Because the MP2 met the UL9540A performance criteria described above for outdoor, ground-mounted BESS the UL9540A installation-level testing was not required.

CSI SolBank 3.0. The SolBank 3.0 underwent cell testing in a laboratory where the cell was forced by an external heating method to go into thermal runaway. While in thermal runaway, it was found to emit flammable gases that were captured and analyzed. Having failed the test by going into the heat-induced thermal runaway, the test protocol required a second UL 9540A testing of a module. The SolBank 3.0 underwent module testing where again flammable gases were emitted and thermal runaway was not contained by the module design which then required UL 9540A unit level testing.

The UL9540A unit level fire testing of the SolBank 3.0 demonstrated that an internal failure event causing thermal runaway will not propagate thermal runaway throughout the battery module. To meet this performance criteria, the unit must contain a battery failure without producing external flames, excessive heat on adjacent modules, or high temperatures on nearby exposures. The unit cannot create any explosion hazards such as deflagrations or projectiles and heat flux along the accessible egress path must remain below 1.3 kW/m². Because the SolBank 3.0 met the UL9540A performance criteria described above for outdoor, ground-mounted BESS the UL9540A installation-level testing was not required.

Project BESS Fire Prevention Design

The project owner is required to implement a fire detection system (either internal smoke detection or external radiant energy sensing detection), although it is currently undefined because it will depend upon the final battery supplier selected. Fire prevention design specific to the battery supplier, water supply, and site plan design are discussed below.

Tesla MP2XL. The Tesla MP2XL has several passive fire prevention features that make this battery different from the earlier Tesla battery units that have exploded or caught fire and burned in the past. Internal "sparkers" that detect flammable gases and initiate a "sparker" to burn the very small amounts of flammable gases (including hydrogen) present thus avoiding a build-up of flammable gases. However, even if there were a buildup of flammable gases, the BESS container has pressure release vents (deflagration panels) that would open on the roof of each module to direct an over-pressure or flame upwards instead of to the side, thus avoiding impacts on adjoining modules that could escalate or propagate thermal runaway. The container also has a battery thermal management system that cools the modules via a cooling system (activated by the BMS) that cools the outside of the cells and modules.

CSI SolBank 3.0. The SolBank 3.0 includes both active and passive fire prevention features. The active fire prevention feature is the ventilation system within the individual BESS unit. This mitigates the risk of deflagration through internal gas detection in each battery cabinet for activation of the ventilation system to prevent the LFL from going over 25 percent. The ventilation system is powered via a built-in UPS with 24 hours of backup for gas detection/fire alarms and 2 hours of active ventilation operation.

SolBank 3.0 also includes deflagration panels, a passive fire prevention feature, designed to open at a defined internal pressure threshold, allowing flammable gases, combustion products, and heat to be released in a controlled manner. The venting components are passive and activate automatically in response to pressure buildup within the battery compartment.

Water Supply. The project owner would provide two 30,000-gallon water tanks for emergency use that would be installed on the project site. The need for additional

water tanks for emergency use would be determined in accordance with CFC and be reviewed and approved by the CPM. The BESS enclosures are outdoors and are not "walk-in" cabinets; therefore, fire suppression is not required by the CFC. Water could be used for cooling adjacent units at the discretion of the first responders and incident commander, however, firefighters are advised to use water for cooling and not for extinguishing an LFP BESS fire. Adding water to an LFP BESS fire could combine water with toxic gases, most notably hydrogen fluoride, creating hydrofluoric acid (Massachusetts Department of Public Health, 2025). Also, extinguishing the BESS fire in BESS units that are still energized would increase the potential for a buildup of flammable gases (not being burned) creating an explosion potential. Industry standard is to allow the BESS fires to burn out while stopping the spread to adjacent units, with passive/active design features and/or water cooling of adjacent units (U.S. EPA, 2025). Furthermore, the Tesla *Industrial Lithium-Ion Battery Emergency Response Guide* recommends allowing an affected unit to consume itself and not to apply water to a burning unit (Tesla 2024). The e-STORAGE *SolBank 3.0 Safety Manual* does not advise on the means and methods of direct suppression of a BESS fire (e-STORAGE 2024).

Site Design. Regardless of the final battery supplier, the project owner has designed BESS to comply with the "Remote Outdoor Installation" definition, which is a minimum of 100-feet from lot lines, compared to the CFC minimum of 10 feet.

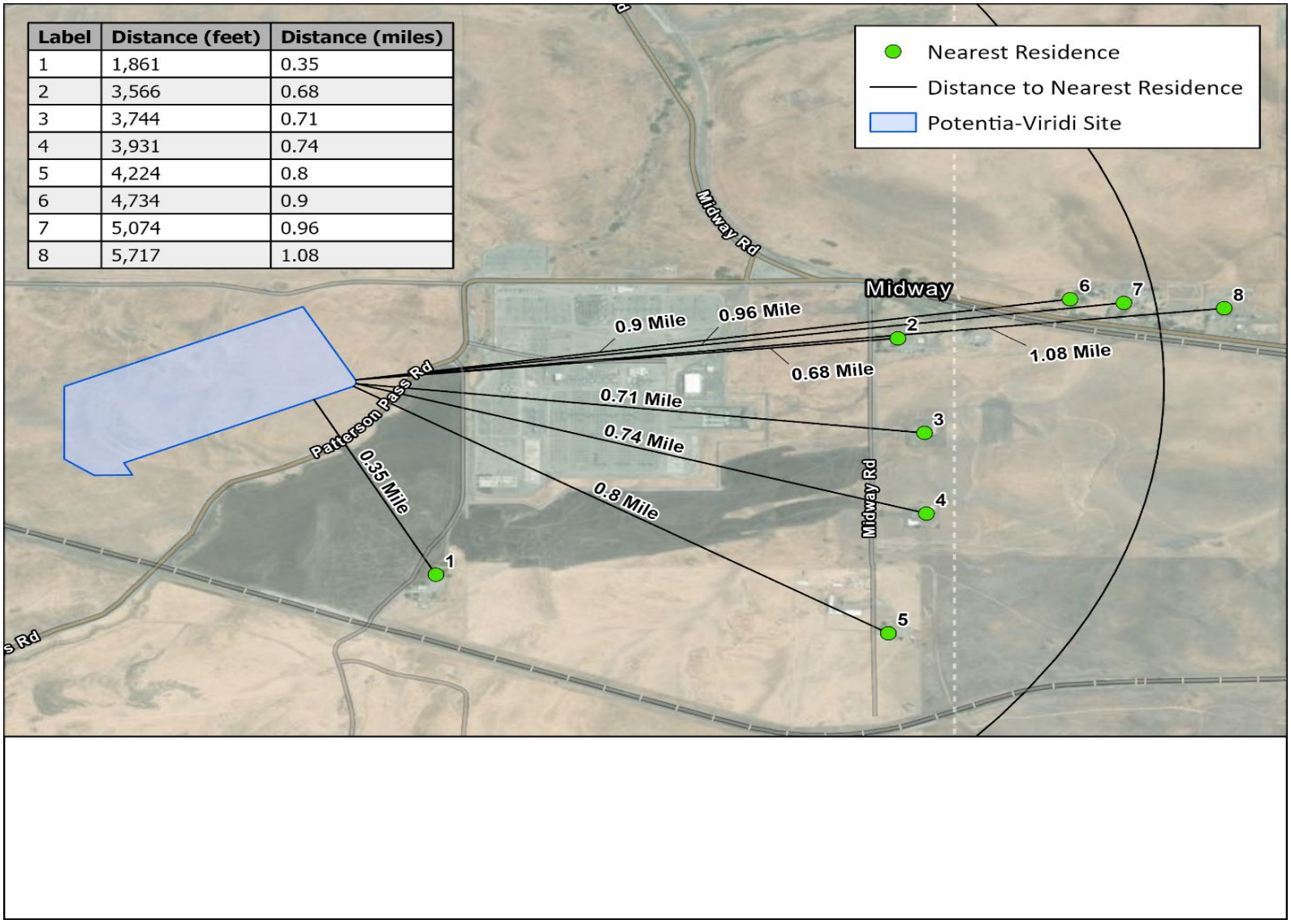
CEC staff concurs that these measures would help to mitigate the fire risk posed by the BESS. However, CEC staff has determined based on the above discussion that there are other measures that would help to mitigate the fire risk posed by the BESS. As the 2022 Elkhorn PG&E incident demonstrated, it is essential to have training provided by the project owner to the first responders to establish roles and responsibilities ahead of time. It is also advantageous to have a Command and Control (CNC) outside of the BESS facility so that an incident commander can safely assess the situation and determine a course of action to combat a fire. U.S. EPA released guidance suggesting setting an isolation zone at least 330 feet from large commercial BESS (U.S. EPA 2025). To ensure that these mitigations are adopted, CEC staff proposes COC **WORKER SAFETY-7** that would require administrative and engineering controls to prevent or respond to a fire from the BESS.

Risk Assessment

Based on CEC staff's review of BESS incident history, there have been no confirmed thermal runaways leading to a fire, explosion, or evolution of gases at BESS facilities using the MP2XL or SolBank 3.0 technology. Additionally, the project is in a remote location. Therefore, CEC staff determined that a qualitative approach is applicable to establishing the chances of an event occurring (in this case, a BESS thermal runaway leading to a fire).

The project location is remote and there are eight residential receptors within approximately one mile, the closest being approximately 0.35 miles from the project site (see **Figure 4.4-3**).

Figure 4.4-3 Distance of BESS from Nearest Sensitive Receptors



Source: CEC, 2025

Section 5.10, Public Health, addresses potential health risk impacts to sensitive receptors if a BESS fire occurs at the proposed project. Modeling analysis demonstrated that toxic air contaminant (TAC) concentrations assuming worst-case emission rates based on UL 9540A tests results for the proposed BESS suppliers would be below OEHHA and U.S. EPA health risk thresholds. Therefore, a potential BESS thermal runaway/fire event would not expose sensitive receptors to substantial pollutant concentrations.

There exists a need for energy sources and storage in locations of the state not previously used, known or considered. Given that energy production or storage has always posed some small non-zero risk to the community and the environment, it is important to note that in comparison to gas-fired power plants, the use of BESS (to store and redeploy electricity) has much less risk and lower impacts to both workers (some of which have died at gas-fired power plants due to fire, explosions, and high operating pressures) and the nearby offsite public. Compared to gas-fired power plants, the BESS has negligible operating air quality emissions.

The most recent data shows for all BESS types, the risk of thermal runaway is small, but not zero, and this small risk is heavily influenced by older (pre-2025) technology and designs. To date in the United States, only equipment has been damaged and no confirmed reports of injuries or deaths from BESS fires in the general public (but several fire fighters have been injured). In other countries, there have been facility personnel injured or killed.

The project has designed the BESS facility outdoors in containers and not inside of a building, which minimizes the damage caused by thermal runaway fires and reduces the threat of fire propagation. The project would also include a fire detection system (either internal smoke detection or external radiant energy sensing detection, depending upon the final battery supplier selected). The risk of fire is low and if an event were to occur over the project lifetime, it would most likely be limited to a single container based on recent BESS incident history in California. Both the MP2XL and SolBank 3.0 have several fire prevention features outlined previously (sparkers or active ventilation, deflagration panels, and battery thermal management system) and both would meet rigorous standards such as NFPA 855 and UL9540A testing. CEC staff proposes COC **WORKER SAFETY-7** that would require additional administrative and engineering controls to prevent or respond to a fire from the BESS that are based on CEC staff's review of similar projects.

Based on the discussion above and with the proposed COCs **WORKER SAFETY-1** through **WORKER SAFETY-8**, CEC staff concludes that the risks associated with a potential fire incident during construction and operation of the BESS is low and impacts would be less than significant.

Fire, Rescue, and Emergency Medical Services Response

Regarding emergency response from local fire departments, CEC staff has discussed fire management with several fire departments around the state. CEC staff has also reviewed independent studies, guidelines from battery manufacturers, and real-time fire department practice. CEC staff has concluded that the ability of first responders to have a supply of water may be necessary to stop propagation of a fire to other units or adjacent grasslands. Availability of fire-fighting water is also essential should the rescue of a worker or first responder be needed. Proposed BESS facilities in rural areas without a municipal water supply to deliver water via water mains, such as the BESS for this project, would require water tanks of sufficient number and capacity, determined by site-specific conditions and consultation with the local fire department. Two 30,000-gallon water tanks for emergency use would be installed on the project site. The need for additional water tanks for emergency use would be determined in accordance with CFC and be reviewed and approved by the CPM.

In the past, CEC staff conducted a statewide survey to determine the frequency of emergency medical services (EMS) response and offsite fire-fighter response for CEC projects in California. The purpose of the analysis was to determine what impact, if any, new CEC projects could have on local emergency services. CEC staff concludes that incidents at CEC projects that require fire, rescue, or EMS response are in the most part infrequent and represent an insignificant impact on the local fire departments, except for those instances where a rural fire department has a staff of mostly volunteer fire fighters or where the local fire department has less than the standard response times due to the lack of resources such as fire fighters, equipment, and stations for the area covered.

CEC staff reviewed the information provided by the applicant to determine if the available ACFD fire protection services and equipment would be adequate to protect workers, and to determine the project's impact on fire protection services in the area. The project would rely on both on-site fire protection systems and local fire protection services. The on-site fire protection systems provide the first line of defense for small fires. In the event of a major fire, fire support services, including trained firefighters and equipment for a sustained response, would be provided by the ACFD under all conditions. Information provided by the ACFD demonstrates that the project area of the County has the resources to respond to fire, rescue, and medical services emergencies to the existing towns and energy facilities in an appropriate time (CEC 2026a). Furthermore, the ACFD and South County Fire share an automatic aid agreement within the project area, which means South County Fire can automatically respond to an emergency at the project site with lights and sirens without having to get approval from ACFD.

CEC staff has also determined that the potential for both work-related and non-work-related heart attacks exists at CEC licensed projects. In fact, CEC staff's research on the frequency of EMS response to CEC projects shows that many of the responses for cardiac emergencies involved non-work-related incidents, including those involving

visitors. CEC staff finds that the quickest medical intervention for cardiac emergencies can only be achieved with the use of an on-site automatic external defibrillator (AED). Therefore, CEC staff concludes that it is appropriate for the project owner to maintain an AED on site in order to treat cardiac emergencies resulting from industrial accidents or other non-work-related causes. CEC staff proposes COC **WORKER SAFETY-5**, which would require that this portable AED be located on site, all employees on site during operations be trained in its use, and that supervisory workers on site during construction and commissioning also be trained in its use.

Project Components Outside of the CEC's Opt-In Certification

Components of the proposed project outside the CEC's Opt-In certification (Downstream Network Upgrades) include an approximately 1,300-foot segment of the gen-tie line, transmission tower structures and related lines and conductors, a substation bay dead-end transmission structure and expansion of a 500 kV breaker-and-a-half with a new circuit breaker, to be constructed and owned by PG&E.

These upgrades would be made by PG&E and are not within the CEC's licensing authority. Major utilities such as PG&E have extensive experience with the types of workplace activities involved with the proposed upgrades. PG&E is also experienced with regulations applicable to worker protection and has extensive worker safety plans and procedures to protect their employees from workplace hazards. CEC staff concludes that the proposed upgrades would, for the most part, not require significant levels of service from the local fire department and would not result in significant impacts on local fire protection services in the project area. These upgrades are adjacent to similar major components at the existing PG&E Tesla Substation. Standard occupational safety and health programs and fire protection measures would be followed and CEC staff does not propose mitigation for the operation and maintenance of these downstream network upgrades.

Cumulative Impacts

CEC staff discussed the six major projects listed above and the potential for a cumulatively considerable impact to the ACFD. Proposed COCs **WORKER SAFETY-1** through **WORKER SAFETY-8** would provide mitigation related to worker safety and fire protection. Information provided by the ACFD demonstrates that the project area of the County has the resources to respond to fire, rescue, and medical services emergencies to the existing towns and energy facilities in an appropriate time, and the ACFD is unaware of any other projects in their jurisdiction that could combine with the proposed project to cause a significant cumulative impact (CEC 2026a). Furthermore, the ACFD and South County Fire share an automatic aid agreement within the project area (and a mutual aid agreement for other parts of Alameda County), which means South County Fire can automatically respond to an emergency at the project site with lights and sirens without having to get approval from ACFD.

Therefore, CEC staff have concluded that the COCs are sufficient to reduce impacts, and the proposed project would not contribute to a cumulatively considerable impact related to worker safety and fire protection.

4.4.3 Project Conformance with Applicable LORS

Table 4.4-1 contains CEC staff's determination of conformance with applicable local, state and federal LORS, including any proposed COCs, where applicable, to ensure the project components within the CEC's Opt-In certification would conform with LORS. As shown in this table, CEC staff concludes that with implementation of specific COCs, the project would conform with all applicable LORS. The subsection at the end of this section, "Proposed Conditions of Certification," contains the full text of the referenced COCs.

TABLE 4.4-1 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis For Determination
Federal	
Title 29 Code of Federal Regulations section 651 et seq. (Occupational Safety and Health Act of 1970)	**Yes.** COCs **WORKER SAFETY-1** and **WORKER SAFETY-2** require that the project owner develop and implement occupational health and safety programs to prevent worker injuries during construction, commissioning, and operations. COCs **WORKER SAFETY-3** and **WORKER SAFETY-4** requires the project owner to implement an additional layer of worker safety during construction.
Title 29 CFR sections 1910.1 to 1910.1500 (Occupational Safety and Health Administration Safety and Health Regulations)	**Yes.** COCs **WORKER SAFETY-1** and **WORKER SAFETY-2** require that the project owner develop and implement occupational health and safety programs to prevent worker injuries during construction, commissioning, and operations. COCs **WORKER SAFETY-3** and **WORKER SAFETY-4** requires the project owner to implement an additional layer of worker safety during construction. COCs **WORKER SAFETY-5** and **WORKER SAFETY-6** requires the project owner to implement an additional layer of worker safety during construction, commissioning, and operations.
State	
California Code of Regulations, Title 8, all applicable sections (Cal OSHA regulations) including CCR: Subchapter 4: Construction Safety Orders. tit. 8, §§ 1920 – 1928 Fire Detection and Prevention;	**Yes.** CEC staff's assessment below recognizes and lists many of the most important Cal OSHA worker safety and health programs, and COCs **WORKER SAFETY-1, WORKER SAFETY-2, WORKER SAFETY-3, WORKER SAFETY-4, WORKER SAFETY-5, WORKER SAFETY-6, WORKER SAFETY-7,** and **WORKER SAFETY-8**, impose specific conditions to ensure compliance with Title

TABLE 4.4-1 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
Subchapter 5: Low and High Voltage Electrical Safety Orders; and specifically tit. 8, §§ Subchapter 7: General Industry Safety Orders; and specifically tit. 8, §§: 3203 – Injury and Illness Prevention Program; 3314 Control of Hazardous Energy Lockout/Tagout; 3395 & 3396 Heat Illness Prevention Programs; 5141.1 Protection from Wildfire Smoke 5184 Storage Battery Systems; 5185 6150-6154 Fire Protection Subchapter 5: Low and High Voltage Electrical Safety Orders; and specifically tit. 8, §§ Subchapter 7: General Industry Safety Orders; and specifically tit. 8, §§: 3203 – Injury and Illness Prevention Program; 3314 Control of Hazardous Energy Lockout/Tagout; 3395 & 3396 Heat Illness Prevention Programs; 5141.1 Protection from Wildfire Smoke 5184 Storage Battery Systems; 5185 6150-6154 Fire Protection	8, as well as Health & Safety Codes for Fire Protection as shown in COCs **WORKER SAFETY-1, WORKER SAFETY-2, WORKER SAFETY-6,** and **WORKER SAFETY-7**.
California Code, Health and Safety Code, § 13146.2 (a) Every city, county, or city and county fire department or district providing fire protection services required by Sections 13145 and 13146 to enforce building standards adopted by the State Fire Marshal and other regulations of the State Fire Marshal shall, annually, inspect all structures subject to subdivision (b) of Section 17921, except dwellings, for compliance with building standards and other regulations of the State Fire Marshal. California Fire Code Chapter 12 Chapter 12 governs the placement and fire prevention of battery energy storage systems. California Public Utilities Code 761.3 section (g) "SB 38" added safety requirements of battery storage projects. It requires every battery energy storage facility in California to have an emergency response and emergency action plan that cover the premises of the facility, consistent with emergency action plans in CCR, Title 8. The owner or operator of the facility must coordinate with local emergency management agencies, unified program agencies, and local first responders to develop the plan and must submit the plan to the county and, if applicable, the city where the facility is located.	**Yes.** CEC staff's assessment recognizes the need for additional fire protection for the BESS and worker EMS response as shown in COCs **WORKER SAFETY-6, WORKER SAFETY-7**, and **WORKER SAFETY-8**.

TABLE 4.4-1 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
CPUC GO 167-C establishes standards for electric generating facilities to ensure that they are effectively maintained and operated to ensure safe and reliable service. The project applicant is required to comply with CPUC GO 167-C, which would guarantee project consistency with the regulation.	
Local	
International Fire Code as adopted into the 2022 California Fire Code and Alameda County Code of Ordinances	**Yes.** The project is subject to the requirements of the CFC. COC **WORKER SAFETY-2** requires a Fire Protection System Impairment Program following the prescriptive measures in the CFC.
General	
National Fire Protection Association (NFPA) 855	**Yes.** COC **WORKER SAFETY-6** requires adherence to NFPA 855 industry standards.

4.4.4 Conclusions and Recommendations

As discussed above, with implementation of the COCs, including if the project owner provides a Project Construction Health and Safety Program and a Project Operations and Maintenance Health and Safety Program as required by COCs **WORKER SAFETY-1** and **WORKER SAFETY-2** and fulfills the requirements of COCs **WORKER SAFETY-3** through **WORKER SAFETY-8**, the project would incorporate adequate levels of industrial safety and comply with applicable LORS.

CEC staff have concluded that the COCs are sufficient to reduce impacts, and the proposed project would not contribute to a cumulatively considerable impact related to worker safety and fire protection. CEC staff recommend adopting the conditions of certification as detailed in subsection "4.4.5 Proposed Conditions of Certification" below.

Impacts associated with project components outside of the CEC's Opt-In Certification do not require mitigation to reduce impacts to less than significant.

4.4.5 Proposed Conditions of Certification

WORKER SAFETY-1 The project owner shall submit to the CPM a copy of the Project Construction Health and Safety Program containing the following:

- a Construction Injury and Illness Prevention Program;
- a Construction Heat Illness Prevention Plan;
- a Construction Fire Prevention Plan that includes methods of access for emergency responders through locked gates, preconstruction requirements (vegetation management), extreme fire day ignition avoidance, and fire ongoing fire patrols;
- a Construction Personal Protective Equipment Program; and

- a Construction Emergency Action Plan that fulfills the requirements of California Public Utilities Code 761.3 section (g);

The Personal Protective Equipment Program, the Injury and Illness Prevention Program, and Construction Heat Illness Prevention Plan shall be submitted to the CPM for review and approval concerning compliance of the program with all applicable safety orders. The Construction Emergency Action Plan and the Construction Fire Prevention Plan shall be submitted to the ACFD for review and comment prior to submittal to the CPM for review and approval.

Verification: At least 90 days prior to the start of construction, the project owner shall submit to the CPM for review and approval a copy of the Project Construction Health and Safety Program. The project owner shall provide to the CPM a copy of letters from the ACFD detailing resolved comments on the Construction Fire Prevention Plan and the Emergency Action Plan.

WORKER SAFETY-2 The project owner shall submit to the CPM a copy of the Project Operations and Maintenance Health and Safety Program containing the following items:

1. An Operation Injury and Illness Prevention Plan;
2. An Operations Emergency Action Plan that that fulfills the requirements of California Public Utilities Code 761.3 section (g);
3. A Fire Prevention Plan (Cal. Code Regs., tit. 8, § 3221) that includes methods of access for emergency responders through locked gates and operational vegetation management measures;
4. A Fire Protection System Impairment Program; and
5. A Personal Protective Equipment Program (Cal. Code Regs., tit.8, §§ 3401-3411).

The Operation Injury and Illness Prevention Plan, Emergency Action Plan, Fire Prevention Plan, Fire Protection System Impairment Program, and Personal Protective Equipment Program shall be submitted to the CPM for review and approval concerning compliance of the programs with all applicable safety orders. The Fire Prevention Plan, Fire Protection System Impairment Program, and the Emergency Action Plan shall also be submitted to the ACFD for review and comment.

Verification: At least 30 days prior to the start of commissioning, the project owner shall submit to the CPM for review and approval a copy of the Project Operations and Maintenance Health and Safety Program. The project owner shall provide a copy to the CPM of letters from the ACFD detailing the resolved comments on the Operations Fire Prevention Plan, Fire Protection System Impairment Program, and Emergency Action Plan to the CPM for review and approval.

WORKER SAFETY-3 The project owner shall provide a site Construction Safety Supervisor (CSS) who, by way of training and/or experience, is knowledgeable of BESS construction and relevant worker safety-related LORS. The CSS shall be capable of identifying workplace hazards relating to the construction activities; and has authority to take appropriate action to ensure compliance and mitigate hazards. The CSS shall:

- have overall authority for coordination and implementation of all occupational safety and health practices, policies, and programs;
- ensure that the safety program for the project complies with Cal OSHA and federal regulations related to industrial battery energy storage system projects;
- ensure that all construction and commissioning workers and supervisors receive adequate safety training;
- conduct accident and safety-related incident investigations and provide emergency response reports for injuries, and inform the CPM of safety-related incidents; and
- ensure that all the plans identified in COC **WORKER SAFETY-1** and **WORKER SAFETY-2** are implemented.

Verification: At least 30 days prior to the start of site mobilization, the project owner shall submit to the CPM the name and contact information for the CSS. The contact information of any replacement CSS shall be submitted to the CPM within one business day. The CSS shall submit in the Monthly Compliance Report (MCR) a monthly safety inspection report to include:

- a record of all employees trained for that month (all records shall be kept on site for the duration of the project);
- summary report of safety management actions and safety-related incidents that occurred during the month;
- report of any continuing or unresolved situations and incidents that may pose danger to life or health;
- report of any visits from Cal OSHA and/or any complaints from workers to Cal OSHA; and
- report of accidents, injuries, and near misses that occurred during the month.

WORKER SAFETY-4 The project owner shall make payments to the DCBO for the services of a Safety Monitor based upon a reasonable fee schedule to be negotiated between the project owner and the DCBO. Those services shall be in addition to other work performed by the DCBO. The Safety Monitor shall be selected from an independent company not affiliated with the DCBO and report directly to the DCBO and would be responsible for verifying that the CSS, as required in COC **WORKER SAFETY-3**, implements all appropriate Cal OSHA and

CEC safety requirements. The Safety Monitor shall conduct on-site (including linear facilities) safety inspections at intervals necessary to fulfill those responsibilities.

Verification: At least 60 days prior to the start of construction, the project owner shall provide proof of its agreement to fund the Safety Monitor services to the CPM for review and approval.

WORKER SAFETY-5 The project owner shall ensure that a portable AED is located on site during construction, commissioning, and operations and shall implement a program to ensure that workers are properly trained in its use and that the equipment is properly maintained and functional. During construction and commissioning the following persons shall be trained in its use and shall be on site whenever the workers that they supervise are on site: the Construction Project Manager or delegate, the CSS or delegate, and all shift foremen. During operations, all project employees on site shall be trained in its use. The training program shall be submitted to the CPM for review and approval.

Verification: At least 30 days prior to the start of site mobilization, the project owner shall submit to the CPM proof that a portable AED is available to be made available on site as soon as physically possible along with a copy of the training and maintenance program for review and approval.

WORKER SAFETY-6 The project owner shall adhere to all applicable provisions of the latest version of National Fire Protection Association (NFPA) 855: Standard for the Installation of Stationary Energy Storage Systems, as the minimum level of safety for the BESS. The project owner shall interpret and adhere to all applicable NFPA 855 recommended provisions and actions stating "should" as "shall", except when referring to fire departments. In any situations where both NFPA 855 and the state or local LORS have application, the more restrictive shall apply.

Verification: The project owner shall ensure that the project adheres to all applicable provisions of NFPA 855. At least 90 days prior to the start of construction of the BESS, the project owner shall provide all system specifications and design drawings to the ACFD for review and comment, to the CPM for review and approval, and to the DCBO for plan check approval and construction inspection.

WORKER SAFETY-7 The project owner shall do the following at the BESS facility:

a. Require that lithium-ion batteries be shipped from the factory to the project site at a maximum of 30 percent State of Charge (SOC);

b. Provide that fire lanes exist down the length and width of the BESS units wide enough to allow for fire engine access;

c. Design access roads (both perimeter and internal) to meet CFC requirements;

d. Provide emergency access on two sides of the BESS yard including Knox Box access for ACFD and South County Fire;

e. Install remote fire or heat sensors at sufficient locations to cover the entire BESS facility (e.g., thermal infrared);

f. Require that the selected BESS units include deflagration panels (overpressure vents);

g. Equip each BESS unit with a fire detection system including thermal imaging cameras, a hydrogen detection system, and a smoke detection system;

h. Install closed-circuit television (CCTV) cameras with Pan, Tilt, Zoom (PTZ), and low-light capability that cover the entire area of the BESS and which would have their own separate power supply, and which complies with NERC CIP-011-1;

i. Establish a Command and Control Protocol in accordance with the Emergency Response Plan for staff to perform emergency duties and responsibilities during the detection, initiation, and escalation of a BESS fire;

j. Establish a Command and Control Center located at a safe distance from the BESS facility (at least 330 feet) that includes monitors for BMS telemetry, remote fire or heat sensors, fire alarm monitoring and allows for first responders to contact the project owner immediately;

k. Establish remote telemetry and CCTV viewing in a Command and Control Center located at a safe distance from the BESS facility for an Incident Commander to use, and which complies with NERC CIP-011-1;

l. Prepare and submit a Root Cause analysis of any incident at the BESS facility (including but not limited to fire, malfunction, leak, or thermal runaway of any cell, module, or unit) to the CPM;

m. Consult with the ACFD in preparing the fire protection system specifications and drawings to ensure an adequate water supply (compliance with NFPA 1142 rural supply standards) for the fire suppression systems for the BESS facility as well as for occupied buildings; and

n. If the project owner decides to revise the choice of BESS manufacturer installed, all of the above requirements shall remain in effect for the new selection. The project owner shall provide any required new information required above plus the specific UL9540 certification and UL9540A third party test results for the new BESS manufacturer to the CPM for review and approval.

Verification: At least 60 days prior to the start of BESS construction, the project owner shall provide all the information required above (with the exception of l.) to the ACFD for review and comment, to the CPM for review and approval, and to the DCBO for plan check approval and construction inspection.

Within 10 days of an incident at the BESS facility (including but not limited to fire, malfunction, leak, or thermal runaway of any cell, module, or unit) the project owner shall notify the CPM that a Root Cause Analysis (RCA) is being prepared. The project owner shall work with the CPM to determine a submission date for the completed RCA. The RCA shall be submitted to the ACFD for review and comment, and to the CPM for review and approval.

In the event the project owner selects a new BESS manufacturer, the project owner shall provide any new information as soon as practicable but no later than 120 days before the start of BESS construction to the CPM for review and approval and to the DCBO for plan check approval and construction inspections.

WORKER SAFETY-8 The project owner shall provide training for the ACFD and establish and provide an annual joint training program with the ACFD that includes table-top exercises for a BESS fire or any other scenario agreed upon between the ACFD and project owner.

Verification: At least 30 days prior to the start of commissioning, the project owner shall provide a copy of the written fire department training program to the ACFD for review and comment and to the CPM for review and approval. Additionally, the project owner shall schedule the first joint training program with the ACFD and provide the date in writing to the CPM.

Thereafter, the project owner shall include a signed letter in the Annual Compliance Report stating when the annual training took place, the training location, the scenario practiced and confirmation that ACFD participated.

4.4.6 Recommended Mitigation Measures

No mitigation measures are required for the construction and operation of the project components under the oversight of the CPUC, outside the CEC's Opt-In certification.

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Section 5

Environmental Impact Assessment

Under the California Environmental Quality Act (CEQA), the environmental setting of a project is generally the physical environmental conditions in the vicinity of the project as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced (CEQA Guidelines, § 15125(a)(1)). The environmental setting described in an EIR by the lead agency will normally constitute the baseline physical conditions by which the lead agency determines whether an impact is significant (CEQA Guidelines, § 15125(a)).

5.1 Air Quality

The Potentia-Viridi Battery Energy Storage System (project) would be located at 17257 Patterson Pass Road in Alameda County, CA, southwest of interstate 580 and interstate 205. The project site is within the boundaries of the San Francisco Bay Area Air Basin (SFBAAB). Development of the BESS facility would occur on about 70 acres of APN 99B-7890-002-04, which currently consists of fallowed annual grasslands suitable for grazing. The gen-tie line would extend southeast from the project substation, crossing Patterson Pass Rd, and then proceed east to the Point of Interconnection (POI) at the Tesla Substation. Land uses in the immediate vicinity of the project include undeveloped rural agricultural lands, multiple high-voltage transmission lines and electrical substations, rural roads, and railroad lines.

The Air Quality section describes the environmental setting and regulatory background and discusses impacts specific to ambient air quality associated with the construction, and operation and maintenance of the proposed project. Components of the proposed Potentia-Viridi BESS facility that are within the California Energy Commission (CEC's) Opt-In certification include the containerized BESS, the power conversion system, medium voltage collection system, three operations and maintenance (O&M) buildings, a project substation/control building, approximately 1,600-feet of kV gen-tie line and transmission structure, as well as ancillary laydown yards, fencing, etc. Components of the proposed project outside the CEC's Opt-In certification include an approximately 1,300-foot segment of the gen-tie line and associated fiber line, two "H"-frame transmission tower structures and related conductors, a substation bay dead-end transmission structure, and expansion of a 500 kV breaker-and-a-half with a new circuit breaker, within the Tesla substation, to be constructed and owned by PG&E.

The air quality analysis focuses on criteria air pollutants, for which there are established ambient air quality standards for public health protection. Toxic air contaminants are addressed separately in **Section 5.10, Public Health**.

5.1.1 Environmental Setting

Existing Conditions

Criteria Air Pollutants

The U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) have established ambient air quality standards (AAQS) for several pollutants based on their adverse health effects. The U.S. EPA has set national ambient air quality standards (NAAQS) for ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter of 10 micrometers or less in diameter (PM10), particulate matter of 2.5 micrometers and smaller in diameter (PM2.5), sulfur dioxide (SO_2), and lead (Pb). Primary standards were set to protect public health; secondary standards were set to protect public welfare against visibility impairment, damage to animals, crops,

vegetation, and buildings. Sources of nitrogen oxides (NOx) and volatile organic compounds (VOC) or reactive organic gases (ROG) are also regulated as these pollutants are precursors to ozone formation through photochemical reactions in the ambient air. In addition, CARB has established California ambient air quality standards (CAAQS) for these pollutants, as well as for sulfates (SO_4), visibility reducing particles, hydrogen sulfide (H_2S), and vinyl chloride. CAAQS are generally stricter than NAAQS.

The ambient air quality standards currently in effect in California and nationally are shown in **Table 5.1-1**.

TABLE 5.1-1 NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards [a]	National Standards [b] (Primary)	National Standards [b] (Secondary)
Ozone (O_3)	1 hour	0.09 ppm (180 µg/m^3)	—	Same as Primary Standard
	8 hours	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)	
PM10	24 hours	50 µg/m^3	150 µg/m^3	Same as Primary Standard
	Annual Mean	20 µg/m^3	—	
PM2.5	24 hours	—	35 µg/m^3	Same as Primary Standard
	Annual Mean	12 µg/m^3	9.0 µg/m^3 [c]	15 µg/m^3
CO	1 hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	—
	8 hours	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	—
Nitrogen Dioxide (NO_2)	1 hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3) [c]	—
	Annual Mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary Standard
Sulfur Dioxide (SO_2) [e]	1 hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	—
	3 hours	—	—	0.5 ppm (1,300 µg/m^3)
	24 hours	0.04 ppm (105 µg/m^3)	0.14 ppm (for certain areas) [e]	
	Annual Mean		0.030 ppm (for certain areas) [e]	

Notes: ppm=parts per million; ppb = parts per billion; µg/m^3 = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter; "—" = no standard.
a California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded.
b National standards (other than O_3, PM, NO_2 [see note d below], and those based on annual arithmetic mean) are not to be exceeded more than once a year. The 8-hour 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. The 24-hour PM10 standard of 150 µg/m^3 is not to be exceeded more than once per year on average over a 3-year period. The 24-hour PM2.5 standard is attained when the 3-year average of 98th percentile concentration is less than or equal to 35 µg/m^3.

c On March 6, 2024, the U.S. EPA published a final rule to strengthen the annual PM2.5 NAAQS from 12.0 µg/m^3 to 9.0 µg/m^3 (U.S. EPA 2025b). See detailed discussion in the text.
d To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb.
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. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The previous SO_2 standards (24-hour and annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2) any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO_2 standards or is not meeting the requirements of a SIP call under the previous SO_2 standards (40 CFR 50.4(3)). A SIP call is a U.S. EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.
Sources: CARB 2025b, U.S. EPA 2025a, U.S. EPA 2025b

On March 6, 2024, the U.S. EPA published a final rule to lower the primary annual PM2.5 NAAQS from 12.0 µg/m^3 to 9.0 µg/m^3 (U.S. EPA 2025b). The final revisions to the primary annual PM2.5 NAAQS trigger a process under which States (and Tribes, if they choose) make recommendations to the Administrator regarding designations, identifying areas of the country that either meet or do not meet the new or revised PM NAAQS. Those areas that do not meet the revised PM NAAQS will need to develop plans that demonstrate how they will meet the standards. Until the U.S. EPA designates an area with respect to the proposed revised PM2.5 NAAQS, the New Source Review (NSR) provisions applicable under an area's designation for the 1997, 2006, and 2012 PM2.5 NAAQS would continue to apply (U.S. EPA 2025b). States and Tribal Authorities will submit initial recommendations of areas that do not attain this standard (i.e., nonattainment areas) to U.S. EPA by February 2025, and U.S. EPA is expected to finalize area designations by February 2026. In addition, according to the U.S. EPA implementation guide for the revised annual PM2.5 NAAQS, as of May 6, 2024, all applicants for permits to construct a new major source or major modification of an existing stationary source need to conduct an air quality analysis that considers the revised PM2.5 NAAQS. Because this project's permit application was deemed complete after the effective date of the final rule, staff's air quality analysis considers the revised PM2.5 NAAQS.

The air quality standards, shown in **Table 5.1-1**, are designed and established to be health protective. Air pollution can cause known health problems, especially for children, the elderly, and people with heart or lung problems. Healthy adults may experience symptoms during periods of intense exercise. Pollutants can also cause damage to vegetation, animals, and property. This analysis relies on the ambient air quality standards as health-based thresholds to help define what is considered a substantial pollutant concentration for the criteria air pollutants.

Attainment Status

The project is located within the boundaries of the San Francisco Bay Area Air Basin (SFBAAB). The SFBAAB encompasses all of Alameda, Contra Costa, Marin, Napa, San

Francisco, San Mateo, and Santa Clara Counties, and the southern portions of Solano and Sonoma Counties.

The SFBAAB currently is classified as nonattainment for the one-hour state ozone standard as well as for the federal and state eight-hour ozone standards. The SFBAAB is also designated as nonattainment for the federal and state annual arithmetic mean and federal 24-hour PM2.5 standards. Additionally, the SFBAAB is classified as nonattainment for the state 24-hour and annual arithmetic mean PM10 standards. The SFBAAB is unclassified or classified as attainment for all other pollutant standards.

Existing Ambient Air Quality

CARB, air districts, and other agencies monitor ambient air quality at approximately 250 air quality monitoring stations across the state. Bay Area Air District (BAAD), formerly the Bay Area Air Quality Management District, monitors local ambient air quality within the SFBAAB. The purpose of the monitoring stations is to measure ambient concentrations of pollutants and determine whether ambient air quality meets California and federal standards. The nearest monitoring station is the Livermore monitoring station, located at 793 Rincon Ave in Livermore, approximately 11 miles west of the project site. This monitoring station measures ozone, NO_2 and PM2.5. For PM10 and SO_2, data from the Concord monitoring station was used, which is located at 2956-A Treat Boulevard in Concord, approximately 29 miles northwest of the project site. For CO, the data was from the Pleasanton monitoring station at Owens Ct in Pleasanton, approximately 18 miles west of the project site.

Table 5.1-2 presents the air quality monitoring data from 2019 to 2023, the most recent years for which data are available. Data in this table that are marked in **bold** indicate that the most-stringent current standard was exceeded during that period.

The data are from the closest and most representative ambient air monitoring stations:

- O_3, NO_2 and PM2.5 from the Livermore monitoring station (about 11 miles west of the project boundary), and
- PM10 and SO_2 from the Concord monitoring station (about 29 miles northwest of the project boundary), and
- CO from the Pleasanton monitoring station (about 18 miles west of the project boundary).

TABLE 5.1-2 AMBIENT AIR QUALITY MONITORING DATA

Pollutant	Averaging Time	2020	2021	2022	2023	2024
O_3 (ppm)	1-hour	**0.095**	**0.113**	**0.101**	0.088	0.041
	8-hour	**0.077**	**0.086**	**0.077**	**0.075**	0.037
PM10 (µg/m^3)	24-hour	**167**	26	35.0	39.7	-
	Annual	9.7	6.4	6.5	6.7	-
PM2.5 (µg/m^3)	24-hour (98th percentile)	**122**	**43.5**	25.9	**43.2**	**15.8**
	Annual	**10.5**	7.9	7.5	6.4	-

TABLE 5.1-2 AMBIENT AIR QUALITY MONITORING DATA

Pollutant	Averaging Time	2020	2021	2022	2023	2024
NO_2 (ppm)	1-hour (maximum)	0.046	0.037	0.042	0.035	0.028
	1-hour (98th percentile)	0.039	0.033	0.034	0.030	0.028
	Annual	0.008	0.006	0.008	0.006	-
CO (ppm)	1-hour	3.6	1.3	1.2	16.5	1.1
	8-hour	2.1	1.1	0.8	3.7	0.8
SO_2 (ppb)	1-hour (maximum)	12.7	6.8	13.2	5.5	3.2
	1-hour (99th percentile)	7	6	6	5	4
	24-hour	2.7	1.4	1.7	1.7	0.7

Sources: U.S. EPA 2025d and CARB 2025a

The maximum concentration values listed in **Table 5.1-2** have not been screened to remove values that may be designated by U.S. EPA as exceptional events. Violations that are the result of exceptional events, such as wildfires, are normally excluded from consideration as AAQS violations. Exceptional events undoubtedly affected many of the maximum concentration values in recent years, especially with wildfires generally occurring between September to November. For a conservative analysis, staff uses the background ambient air quality concentrations from 2022 to 2024 to represent the baseline condition at the project site.

Health Effects of Criteria Pollutants

Below are descriptions of the health effects of criteria pollutants that are a concern in the regional study area. The California Health and Safety Code Section 39606 requires CARB to adopt ambient air quality standards at levels that adequately protect the health of the public, including infants and children, with an adequate margin of safety. Ambient air quality standards define clean air (CARB 2025b).

Ozone. Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and that can cause substantial damage to vegetation and other materials. Ozone is not emitted directly into the atmosphere but is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and NOx, including NO_2. Significant ozone production generally requires ozone precursors (ROG and NOx) to be present in a stable atmosphere with strong sunlight.

Ozone can cause the muscles in the airways to constrict, trapping air in the alveoli, potentially leading to wheezing and shortness of breath. Ozone can make it more difficult to breathe deeply and vigorously; cause shortness of breath and pain when taking a deep breath; cause coughing and sore or scratchy throat; inflame and damage the airways; aggravate lung diseases such as asthma, emphysema, and chronic bronchitis; increase the frequency of asthma attacks; make the lungs more susceptible to infection; continue to damage the lungs even when the symptoms have disappeared; and cause chronic obstructive pulmonary disease. Long-term exposure to ozone is linked to aggravation of asthma and may be one of many causes of asthma development. Long-term exposures to higher concentrations of ozone may also be

linked to permanent lung damage, such as abnormal lung development in children. The inhalation of ozone causes inflammation and irritation of the tissues lining human airways, causing and worsening a variety of symptoms, and exposure to ozone can reduce the volume of air that the lungs breathe in and cause shortness of breath.

People most at risk for adverse health effects from breathing air containing ozone include people with asthma, children, older adults, and people who are active outdoors, especially outdoor workers. Children are at greatest risk from exposure to ozone because their lungs are still developing and they are more likely to be active outdoors when ozone levels are high, which increases their exposure. Studies show that children are no more or less likely to suffer harmful effects than adults; however, children and teens may be more susceptible to ozone and other pollutants because they spend nearly twice as much time outdoors and engaged in vigorous activities compared to adults. Children breathe more rapidly than adults and inhale more pollution per pound of their body weight than adults and are less likely than adults to notice their own symptoms and avoid harmful exposures.

Particulate Matter. PM10 and PM2.5 represent size fractions of particulate matter that can be inhaled into air passages and the lungs and can cause adverse health effects. Very small particles of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain absorbed gases (e.g., chlorides or ammonium) that may be injurious to health. The health effects of particulate matter may include cardiovascular effects, such as cardiac arrhythmias and heart attacks, and respiratory effects, such as asthma attacks and bronchitis. Particulates can also reduce visibility.

Nitrogen Dioxide. Breathing air with a high concentration of NO_2 can irritate airways in the human respiratory system. Such exposures over short periods (as represented by the 1-hour standards) can aggravate respiratory diseases, particularly asthma, leading to respiratory symptoms (such as coughing, wheezing or difficulty breathing), hospital admissions and visits to emergency rooms. Longer exposures to elevated concentrations of NO_2 (as represented by the annual standards) may contribute to the development of asthma and potentially increase susceptibility to respiratory infections. People with asthma, as well as children and the elderly are generally at greater risk for the health effects of NO_2. Emissions of NOx, which includes NO_2 and NO, react with other chemicals in the air and sunlight to form both particulate matter and ozone.

Carbon Monoxide. CO is a pollutant that is a product of incomplete combustion and is mostly associated with motor vehicle traffic. High CO concentrations develop primarily during winter when periods of light winds combine with the formation of ground level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. 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.

Sulfur Dioxide. SO_2 is produced through the combustion of sulfur or sulfur-containing fuels such as coal. SO_2 is also a precursor to the formation of atmospheric sulfate and particulate matter (PM10 and PM2.5) and contributes to potential atmospheric sulfuric acid formation that could precipitate downwind as acid rain.

Lead. Lead has a range of adverse neurotoxin health effects and was predominately released into the atmosphere primarily via the combustion of leaded gasoline. The phase-out of leaded gasoline has resulted in decreasing levels of atmospheric lead.

Sensitive Receptors

Sensitive receptors are defined as groups of individuals that may be more susceptible to health risks due to chemical exposure. These individuals are typically children, the elderly, and those with preexisting serious health problems. Land uses where sensitive receptors are most likely to spend time include schools and schoolyards, parks and playgrounds, daycare centers and preschools, hospices, dormitories, prisons, nursing homes, hospitals, and residential communities (BAAD 2023, pg. 5-11).

Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods, with greater associated exposure to ambient air quality. Schools, hospitals, and convalescent homes are considered relatively sensitive to poor air quality because children, elderly people, and the infirmed are more susceptible to respiratory distress and sensitive receptors are located immediately adjacent to the project site. Discrete receptors were placed over residences and workplaces proximate to the project site.

Section 5.10, Public Health, includes a detailed description of the sensitive receptors near the project.

Regulatory

The federal, state, and local laws, ordinances, regulations, and standards (LORS) applicable to the control of criteria pollutant emissions and mitigation of air quality impacts appear in this section.

Federal

Federal Clean Air Act. The federal Clean Air Act (CAA) (42 U.S.C., § 7401 et seq.) establishes the statutory framework for regulation of air quality in the United States. Under the CAA, the U.S. EPA oversees the implementation of federal programs for permitting new and modified stationary sources, controlling toxic air contaminants, and reducing emissions from motor vehicles and other mobile sources.

Title I (Air Pollution Prevention and Control) of CAA requires establishment of NAAQS, air quality designations, and plan requirements for nonattainment areas. States are required to submit a State Implementation Plan (SIP) to the U.S. EPA for areas in nonattainment with NAAQS. The SIP must demonstrate how state and local regulatory agencies will institute rules, regulations, and other programs to attain NAAQS. Once

approved by the U.S. EPA and published in the Federal Register, the local air district rules contained in the SIP become federally enforceable. State law makes CARB the lead agency for all purposes related to the components that are included in the California SIP. For all local air districts in California, the SIP relies on the same core set of control strategies, including emission standards for cars and heavy trucks, fuel regulations and limits on emissions from consumer products (CARB 2024c).

Title 40 Code of Federal Regulations Subchapter C –Air Programs. Title 40 of the Code of Federal Regulations (CFR) Part 51, Requirements for Preparation, Adoption, and Submittal of Implementation Plans, establishes the requirements for Nonattainment New Source Review (NSR). The NSR program requires new and modified stationary sources to obtain air permits and requires Best Available Control Technology (BACT) and emissions offsets.

40 CFR Part 52, Approval and Promulgation of Implementation Plans, including 40 CFR Part 52.21, Prevention of Significant Deterioration (PSD) of air quality, requires major sources or major modifications to major sources to obtain permits for attainment pollutants. The purpose of the federal PSD program is to ensure that attainment areas remain in attainment of NAAQS based upon a proposed facility's annual emissions. The proposed project would be a new source that does not have a rule listed emission source thus the PSD trigger levels are 250 tons per year for NOx, VOC, SO_2, PM2.5 and CO. Because proposed project emissions would be less than prescribed amounts, the project would not be subject to PSD.

Title 40 Code of Federal Regulations Part 60 Standards of Performance for New Stationary Sources

The New Source Performance Standards (NSPS) Program. Spark ignition engines, including stationary engines fired on natural gas, landfill gas, gasoline, or propane, are subject to NSPS Subpart JJJJ, known as the ICE NSPS (40 C.F.R., § 60.4230, et al.). This rule includes emission standards applicable to manufacturers of spark ignition engines; owners of certified engines must maintain the engine and control device according to the manufacturer's emission-related written instructions and keep records of conducted maintenance to demonstrate compliance (40 C.F.R., § 60.4243). Emergency engines may be used primarily to provide power when the normal power source is interrupted. Operation of an emergency engine in non-emergency situations is limited to 100 hours for certain purposes, such as readiness testing and engine maintenance.

State

Generally, state law designates local air districts as having primary responsibility for the control of air pollution from all sources other than vehicular sources while the control of vehicular air sources is the responsibility of CARB. (Health and Saf. Code, § 39002) CARB is also responsible for the state's overall air quality management, including, among other things, establishing CAAQS for criteria pollutants, identifying toxic air contaminants of statewide concern, and adopting measures to reduce the emissions of

those toxics through airborne toxic control measures (ATCM), and regulating emissions of greenhouse gas emissions.

California Health and Safety Code

Section 40910 to 40930. These sections require air district permitting of stationary sources to be consistent with CARB approved Clean Air Plans or State Implementation Plans (SIPs).

Section 41700. This section 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 to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property."

California Clean Air Act

The California Clean Air Act (CCAA) was enacted by the California legislature in 1988. The CCAA requires that all air districts in the state endeavor to achieve and maintain California Ambient Air Quality Standards (CAAQS) for by the earliest practical date. **Table 5.1-1** above shows the CAAQS currently in effect for each of the criteria pollutants, as well as the other pollutants recognized by the state. As shown in **Table 5.1-1**, the CAAQS are generally more stringent than the corresponding federal standards.

The CCAA specifies that districts focus particular attention on reducing the emissions from transportation and area-wide emission sources (California Health and Safety Code § 40910), and the CCAA provides districts with authority to regulate indirect sources. The CARB and local air districts are responsible for achieving CAAQS, which are to be achieved through district-level Air Quality Management Plans (AQMPs) that would be incorporated into the SIP. In California, the U.S. EPA has delegated authority to prepare SIPs to CARB, which in turn, has delegated that authority to individual air districts. Each district plan is required to either 1) achieve a 5% annual reduction, averaged over consecutive 3-year periods, in districtwide emissions of each nonattainment pollutant or its precursors, or 2) provide for implementation of all feasible measures to reduce emissions. Any planning effort for air quality attainment would thus need to consider both state and federal planning requirements.

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

- Title 13, Div. 3: Motor Vehicles
- Title 17, Div. 3: Public Health
- 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

California Code of Regulations

Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines, Emergency Standby Diesel-Fueled Compression Ignition Engines. Statewide regulations govern the use of and emissions performance standards for emergency standby diesel-fueled engines, including those of the project. As defined in regulation (Cal. Code Regs., Tit. 17, § 93115.4(a)(29)), an emergency standby engine is, among other possible uses, one that provides electrical power during an emergency use and is not the source of primary power at the facility and is not operated to supply power to the electric grid. The corresponding ATCM (Cal. Code Regs., Tit. 17, § 93115.6) restricts each emergency standby engine to operate no more than 50 hours per year for maintenance and testing purposes. The ATCM establishes no limit on engine operation for emergency use or for emission testing to show compliance with the ATCM's standards.

U.S. EPA/CARB Off-Road Mobile Sources Emission Reduction Program. The California Clean Air Act mandates that CARB achieve the maximum degree of emission reductions from all off-road mobile sources to attain the state ambient air quality standards. Off-road mobile sources include construction equipment. The earliest (Tier 1) standards for large compression-ignition engines used in off-road mobile sources became effective in California in 1996. Since then, the Tier 3 standards for large compression-ignition engines used in off-road mobile sources went into effect in California for most engine classes in 2006, and Tier 4 or Tier 4 Interim (4i) standards apply to all off-road diesel engines model year 2012 or newer. The tiered engine exhaust standards and standards for fleets that are already in-use provide comprehensive regulation and control to reduce NOx and toxic diesel particulate matter (DPM) emissions from equipment throughout the State.

CARB In-Use Off-Road Diesel Fueled Fleets Regulation. The regulations for in-use off-road diesel equipment are designed to reduce NOx and DPM. Depending on the size of the fleet of equipment, the owner would need to ensure that the average emissions performance of the fleet meets certain state-wide standards (Cal. Code Regs., Tit. 13, § 2449.1). In lieu of improving the emissions performance of the fleet, electric systems can be installed to replace diesel equipment in the fleet average calculations. Presently, all equipment owners are subject to a five-minute idling restriction in the regulation (Cal. Code Regs., Tit. 13, § 2449).

Local

East County Area Plan (A Portion of the Alameda County General Plan). The County's East County Area Plan includes goals and policies that are designed to reduce the emissions of criteria air pollutants, in buildings, conservation, and other methods of efficiency. The goals and policies that are related directly and indirectly to air quality are as follows (County of Alameda 2000):

- **Goal:** To ensure that air pollution levels do not threaten public health and safety, economic development or future growth.
  - Policy 291. The County shall strive to meet federal and state air quality standards for local air pollutants of concern. If standards are exceeded, the County shall require appropriate mitigation measures on new development.
  - Policy 292. The County shall coordinate subregional air quality planning and mitigation among East County cities using the result of the biennial monitoring report.
  - Policy 293. The County shall support the BAAD in monitoring air pollutants of concern on a continuous basis.
  - Policy 294. The County shall require new development projects to include traffic and air pollutant reduction measures to help attain air quality standards. For non-residential projects, these measures could include Transportation Demand Management Programs such as ridesharing and transit promotion; for residential projects, these measures could include site plan features to reduce traffic trip generation such as mixed use development and transit-oriented development.
  - Policy 295. The County shall require major projects of commercial or industrial nature to include bicycle storage facilities for employees and customers, shower/locker areas, and other facilities identified in the East County Bicycle Plan for employees that commute using bicycles.
  - Policy 296. The County shall review the cumulative impact of proposed project for their potential effect on air quality conditions.
  - Policy 297. The County shall coordinate air quality planning efforts with other local, regional and state agencies.
  - Policy 298. The County shall address air quality as a factor in its regional element to assist cities in their environmental review procedures.
  - Policy 299. The County shall require projects that generate high levels of air pollutants, such as manufacturing facilities, hazardous waste handling operations, and drive-through restaurants and banks, to incorporate air quality mitigations in their designs.
  - Policy 300. The County shall review proposed projects for their potential to generate hazardous air pollutants.
  - Policy 301. The County shall only approve new air pollution point sources such as manufacturing and extraction facilities when they are located away from residential areas and sensitive receptors.
  - Policy 302. The County shall include buffer zones within new residential and sensitive receptor site plans to separate those uses from freeways, arterials, point sources and hazardous material locations.

- Policy 303. The County shall incorporate the provisions of the Metropolitan Transportation Commission (MTC), Association of Bay Area Government (ABAG), BAAD guidelines into project review procedures.
- Policy 304. The County shall notify cities and the BAAD of proposed projects which may significantly affect air quality.
- Policy 305. The County shall cooperate with the BAAD and CARB in their enforcement of the provisions of the Clean Air Act, state, regional policies and established standards for air quality.
- Policy COS-14.9. Significant Producers of Air Pollutants. Require projects that generate potentially significant levels of air pollutants and/or GHGs such as quarries, landfill operations, or large land development projects to incorporate renewable energy, and the best available control technologies and practices into the project design.

BAAD Rules and Regulations. The following BAAD rules are applicable to the project to limit the generation of air pollutants.

- Regulation 6, Rule 1 – General Requirements. This rule limits the quantity of particulate matter in the atmosphere through the establishment of limitations on emission rates, concentration, visible emissions, and opacity.
- Regulation 6, Rule 6 – Prohibition of Trackout. This rule addresses fugitive road dust emissions associated with trackout of solid materials onto paved public roads outside the boundaries of large bulk material sites, large construction sites, and large disturbed surface sites (sites of 1 acre or more).
- Regulation 8, Rule 1 – General Provisions. This rule limits the emission of organic compounds into the atmosphere.
- Regulation 8, Rule 3 – Architectural Coatings. This rule limits the quantity of ROGs in architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within the BAAD.
- Regulation 9, Rule 8 – Nitrogen Oxides And Carbon Monoxide From Stationary Internal Combustion Engines. This rule limits NOx and CO emissions from stationary internal combustion engines with an output rated by the manufacturer at more than 50 brake horsepower

Cumulative

The proposed project would be in the SFBAAB, which is classified as a national nonattainment area for ozone and PM2.5, and a California nonattainment area for ozone, PM10 and PM2.5. The criteria air pollutants of greatest concern are ozone, PM2.5 and PM10. The nonattainment status is the result of cumulative emissions from all sources of these air pollutants and their precursors within the SFBAAB. Past, present, and future development projects contribute to the region's adverse air quality conditions on a cumulative basis.

For an air quality cumulative analysis, a radius of six miles is normally used because based on staff's modeling experience, beyond six miles there is no statistically significant concentration overlap for nonreactive pollutant concentrations between two stationary emission sources. According to **Appendix A, Table A-1**, there are 33 existing, approved, pending and proposed projects of potential sources of criteria air pollutants within six miles of the project site. However, none of these projects are expected to include stationary emission sources that would result in significant overlapping criteria pollutant concentrations with the proposed project. The BAAD's Permit Application Received database was also reviewed to determine if any approved permits within the last two years were within a 6-mile radius of the project site. The review determined that there were no approved permits within a 6-mile radius of the project site. Therefore, no cumulative air quality modeling impact analysis is required.

Past, present, and reasonably foreseeable probable future air pollutant emissions could be attributable to each of the cumulative projects, especially those that involve construction activities or operation and maintenance (O&M) activities with substantial sources of air pollutants.

5.1.2 Environmental Impacts

AIR QUALITY Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:	**Significant and Unavoidable Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☒	☐	☐
b. 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?	☐	☒	☐	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, Air Quality

5.1.2.1 Methodology and Thresholds of Significance

In addition to the above environmental checklist, staff used the following methodology and thresholds of significance to evaluate the project.

Methodology

The applicant estimated air pollutant emissions for construction and operational activities using California Emissions Estimator Model (CalEEMod, version 2022.1.1). It is conservatively assumed that construction of the project would last approximately 18 months. The construction schedule has been developed based on available information provided by the applicant, typical construction practices, and CalEEMod default assumptions. The equipment mix assumptions were based on CalEEMod default assumptions based on proposed land use and is meant to represent a reasonably conservative estimate of construction activity.

Operation of the proposed project would generate criterial pollutants from area sources, energy sources, mobile sources, offroad and stationary sources. Emissions from these sources were estimated based on CalEEMod default assumptions for operations of the proposed project land uses. It was assumed that the project would be operational following the completion of construction, which would occur in 2028.

Thresholds of Significance

This air quality evaluation assesses the degree to which the project would potentially cause a significant impact according to the California Environmental Quality Act (CEQA) guidelines. BAAD is the local air district responsible for the attainment and maintenance of the federal and state AAQS and associated program requirements at the project location. The analysis is based upon the methodologies and related thresholds of significance in BAAD's 2022 CEQA Guidelines (BAAD 2023) to determine the significance of the potential air quality emissions and impacts. These methodologies include qualitative determinations and the quantification of whether project construction or operation would exceed numeric emissions and health risk thresholds (BAAD 2023).

BAAD CEQA Guidelines project-level thresholds of significance ("BAAD significance thresholds") for criteria pollutants and precursor pollutants and the health risks of toxic air contaminants (TACs) that apply during construction and operation are shown in **Table 5.1-3**. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the Bay Area region's existing air quality conditions. Staff evaluates project emissions against the BAAD significance thresholds under CEQA environmental checklist criterion "b."

For fugitive dust emissions during construction periods, the BAAD CEQA Guidelines do not have a significance threshold. Rather, BAAD recommends using a current Best Management Practices (BMPs) approach, which has been a pragmatic and effective approach to the control of fugitive dust emissions.

Staff also evaluates the project's potential to expose sensitive receptors to substantial pollutant concentrations under CEQA environmental checklist criterion "c." Staff addresses both the ambient air quality impacts of criteria pollutants, which have health-based standards in this Air Quality section, and **Section 5.10, Public Health**,

addresses the impacts of TACs, which are identified as potentially harmful even at low levels and have no established safe levels or health-based ambient air quality standards.

The analysis includes ambient air quality impact modeling for construction and operation. The AAQS, shown in **Table 5.1-1**, are health protective values, so staff uses these health-based regulatory standards to help define what is considered a substantial pollutant concentration for criteria pollutants.[1] Staff's analysis determines whether the project would be likely to exceed any AAQS or contribute substantially to an existing or projected air quality violation, and, if necessary, proposes mitigation to reduce or eliminate these pollutant exceedances or substantial contributions.

TABLE 5.1-3 BAAD THRESHOLDS OF SIGNIFICANCE

Pollutant	Construction	Operation	
	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (tpy)
ROG	54	54	10
NOx	54	54	10
PM10	82 (exhaust)	82	15
PM2.5	54 (exhaust)	54	10
PM10/ PM2.5 (fugitive dust)	Best Management Practices **	None	
Local CO	None	9.0 ppm (8-hour average), 20.0 ppm (1-hour average)	
Risk and Hazards for New Sources and Receptors (Individual Project)	Same as Operation Threshold	Increased cancer risk >10.0 in one million Increased non-cancer risk of > 1.0 Hazard Index (Chronic or Acute) Ambient PM2.5 increase: > 0.3 µg/m^3 annual average OR Compliance with Qualified Community Risk Reduction Plan	
Risk and Hazards for New Sources and Receptors (Cumulative Threshold)	Same as Operation Threshold	Cancer Risk: > 100 in one million (from all local sources) Non-cancer: > 10.0 Hazard Index (Chronic, from all local sources) PM2.5: > 0.8 µg/m^3 annual average (from all local sources) OR Compliance with Qualified Community Risk Reduction Plan	

Source: BAAD 2023, Table 5-1 and BAAD 2021a, pg. 2-5-7.
** PM10/PM2.5 (fugitive dust) is also recognized to impact local communities. The Air District strongly recommends implementing all feasible fugitive dust management practices especially when construction projects are located near sensitive communities, including schools, residential areas, or other sensitive land uses.

1 This approach provides a complete analysis that describes the foreseeable effects of the project in relation to all potential air quality related health impacts, including impacts of criteria pollutants to sensitive receptors; and therefore, addresses the California Supreme Court December 2018 *Sierra Club v. County of Fresno* opinion (https://www.courts.ca.gov/opinions/archive/S219783A.PDF).

Significance criteria also include Significant Impact Levels (SILs) for the particulate matter portions of the analysis. Regulatory agencies have traditionally applied SILs as a de minimis value, which represents the off-site concentration predicted to result from a source's emissions that does not warrant additional analysis or mitigation. If a source's modeled impacts at any off-site location do not exceed relevant SILs, the source owner would typically not need to assess multi-source or cumulative air quality to determine whether or not that source's emissions would cause or contribute to a violation of the relevant NAAQS or CAAQS. The SFBAAB is classified as nonattainment for PM10 and PM2.5 NAAQS/CAAQS. Staff compares the project's contribution to local criteria pollutant concentrations to SILs to determine whether the project's emissions would contribute significantly to those regional exceedances.

BAAD does not have significance criteria in terms of PM10 concentrations or 24-hour concentrations of PM2.5. To determine if the project could contribute substantially to the existing PM10 exceedances, this analysis relies on the United States Environmental Protection Agency (U.S. EPA) PM10 SILs established in federal regulations for non-attainment areas (40 CFR 51.165(b)(2)) for 24-hour impacts (5 $\mu g/m^3$) and for annual impacts (1 $\mu g/m^3$). The same federal regulation (40 CFR 51.165(b)(2)) also established the U.S. EPA PM2.5 SILs concentrations for 24-hour impacts (1.2 $\mu g/m^3$).

The BAAD significance threshold for a project-level increase in annual PM2.5 concentrations is 0.3 micrograms per cubic meter ($\mu g/m^3$), as shown in **Table 5.1-3**. However, with the revised 2024 annual PM2.5 NAAQS of 9.0 $\mu g/m^3$, the U.S. EPA issued a recommendation to set the PM2.5 SIL value for annual impacts at 0.13 $\mu g/m^3$ (effective May 6, 2024). It should be noted that the U.S. EPA SILs values are all based on the forms of the applicable NAAQS. For example, the 24-hour PM2.5 SILs of 1.2 $\mu g/m^3$ is based on the 98^{th} percentile 24-hour concentrations averaged over three years. The annual PM2.5 SILs of 0.13 $\mu g/m^3$ is based on a three-year average of annual average concentrations. For this analysis, staff uses the U.S. EPA SILs as well as the BAAD CEQA Guidelines significance threshold to determine project impact significance of PM2.5 concentrations.

5.1.2.2 Direct and Indirect Impacts

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

This section considers the project's consistency with the applicable air quality management plan. This is a qualitative determination that considers the combined effects of project construction and operation.

Construction and Operation

Less Than Significant with Mitigation Incorporated. The BAAD is the local agency responsible for improving and maintaining air quality in the SFBAAB and develops regulations that must be consistent with or more stringent than federal and state air quality laws and regulations. As of December 2025, the most current air quality plan (AQP) is the 2017 Bay Area Clean Air Plan, adopted on April 19, 2017. This plan serves as a comprehensive strategy to protect public health by working toward state and federal air quality standards and reducing health disparities from air pollution exposure. Key elements of this plan include regulations to limit particulate matter (PM) emissions, a wood burning regulation, the Spare the Air program, and control measures to reduce PM and other pollutants.

A project would be consistent with the AQP if that project (BAAD 2023, pp. 5-2 and 5-3):

1. Supports the primary goals of the AQP.

   The determination for this criterion, can be met through consistency with the BAAD significance thresholds. As explained in the discussions under environmental checklist criteria "b" and "c" of this air quality analysis, the project, including components within and outside the CEC's Opt-In certification, would have less than significant impacts related to the BAAD significance thresholds, with the implementation of COCs **AQ-SC1** through **AQ-SC5** and recommended **MM AQ-1**. Since the project emissions comply with the significance thresholds with COCs, the project would have a less than significant impact related to the primary goals of the AQP.

2. Includes applicable control measures from the AQP.

   The 2017 Clean Air Plan contains 85 control measures aimed at reducing air pollution in the Bay Area. The project site is designated Large Parcel Acreage (LPA) in the Alameda County East County Plan Area. The zone classification is Agriculture-Combining B District (A-BE). The proposed battery energy storage project would be allowed within the County's conditional uses for these zoning and land use designations. Furthermore, the proposed project would undergo decommissioning at the end of its useful life and the project site would be returned to its current state. The project would result in the development of uses and growth that are consistent with the City General Plan and zoning designations. The implementation of COCs **AQ-SC1** through **AQ-SC5** and recommended **MM AQ-1** would be consistent with the control measures from the AQP. Furthermore, because the project would comply with all applicable BAAD rules and would meet or exceed state and federal standards and/or local building codes, the project would not conflict with any applicable control measures from the 2017 Clean Air Plan.

3. Does not disrupt or hinder implementation of any AQP control measures.

   Examples of how a project may cause the disruption or delay of control measures include a project that precludes an extension of a transit line or bike path or

proposes excessive parking beyond parking requirements. The project would not create any barriers or impediments to planned or future improvements to transit or bicycle facilities in the area, nor would it include excessive parking. Therefore, the project would not hinder implementation of 2017 Clean Air Plan control measures.

b. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

This section quantifies the project's criteria pollutant emissions rates and focuses on whether project-related emissions of nonattainment criteria pollutants would exceed any of the applicable local air district significance thresholds.

Construction

Less Than Significant with Mitigation Incorporated. Construction of the proposed project would result in temporary emissions caused by onsite construction equipment, soil disturbance, vehicle emissions, and asphalt pavement application. Offsite construction emissions would be derived primarily from vendor and haul truck trips, and worker vehicle trips. Construction emissions can vary substantially day to day, depending on the level of activity, the specific type of operation, and for dust, the prevailing weather conditions.

Criteria air pollutant emissions associated with construction activities were quantified using CalEEMod. Default values provided by the program were used where detailed proposed project information was not available.

Table 5.1-4 summarizes the estimated maximum unmitigated daily construction emissions associated with the conceptual construction years of the project, including project components both within and outside the CEC's Opt-In certification. Emissions represent maximum of summer and winter conditions. "Summer" emissions are representative of the conditions that may occur during the O_3 season (May 1 to October 31), and "winter" emissions are representative of the conditions that may occur during the balance of the year (November 1 to April 30). Staff is using the thresholds as shown above in **Table 5.1-3** to compare against to make significance determinations.

TABLE 5.1-4 ESTIMATED MAXIMUM DAILY CONSTRUCTION CRITERIAL POLLUTANT EMISSIONS (LBS/DAY)-UNMITIGATED

Year	ROG	NOx	CO	SOx	PM10	PM2.5
2027	3.17	30.16	36.83	0.10	4.44	1.71
2028	1.24	10.88	15.25	0.03	0.37	0.31
2050	0.67	4.04	6.54	0.02	0.78	0.44
Maximum	**3.17**	**30.16**	**36.83**	**0.10**	**4.44**	**1.71**
BAAD Thresholds of Significance	54	54	NA	NA	82	54
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Note: The values shown are the maximum summer and winter daily emissions results from CalEEMod.
Source: LA2025g and staff analysis.

The maximum daily emissions shown in **Table 5.1-4** indicate that construction emissions would be lower than the applicable thresholds of significance for all criteria pollutants. The BAAD's numerical thresholds for PM10 and PM2.5 construction-phase emissions apply to exhaust emissions only. There is no numerical threshold for fugitive dust generated during construction. The BAAD CEQA Guidelines recommend control of fugitive dust through BMPs in order to conclude that impacts from fugitive dust emissions are less than significant (BAAD 2023). The applicant proposed measures, PDF AQ-1, which incorporates the BAAD's recommended construction BMPs for fugitive dust. In addition, as discussed in more detail under criterion "c" of the CEQA environmental checklist below, the applicant proposed mitigation measure, MM-AQ-1, to require use of Tier 4 off-road equipment during construction (Dudek 2025g). Staff reviewed the measures and finds them sufficient to address impacts from construction emissions. Staff has incorporated the applicant proposed measures in staff recommended COCs **AQ-SC1** through **AQ-SC5**, which would require implementation of fugitive dust and combustion emissions control measures to ensure that PM10 and PM2.5 emissions are reduced to a level that would not result in a considerable increase of these pollutants. This impact would be reduced to less than significant with the implementation of COCs **AQ-SC1** through **AQ-SC5**. For the components outside the CEC's Opt-In jurisdiction, staff recommends **MM AQ-1**, which includes PG&E Construction Measures for air quality, to further reduce fugitive dust and combustion emissions during construction of these components.

Operation

Less Than Significant Impact. Operation of the proposed project would generate ROG, NOx, CO, SOx, PM10, and PM2.5 emissions from mobile sources (vehicle trips), area sources, energy sources, off-road equipment, and stationary sources. The emissions accounted for project components both within and outside the CEC's Opt-In certification. Emissions from these sources were estimated based on CalEEMod default assumptions for operations of the proposed project land uses. It was assumed that the project would be operational following the completion of construction, which would occur in 2028.

Area. The area source category calculates direct sources of air pollutant emissions located at the project site, including consumer product use and landscape maintenance equipment. CalEEMod defaults were used to estimate emissions from area sources during operation of the project.

Consumer products are various solvents used in non-industrial applications which emit ROGs during their product use, including detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products. Consumer product ROG emissions are estimated in CalEEMod based on the floor area of buildings

and on the default factor of pounds of ROG per building square foot per day. The CalEEMod default utilization rates and emission factors were assumed.

Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chainsaws, and hedge trimmers, as well as air compressors, generators, and pumps. The emissions associated from landscape equipment use were estimated using CalEEMod. The emission factors are multiplied by the number of summer days that represent the number of operational days.

Energy. As represented in CalEEMod, energy sources include emissions associated with building electricity and natural gas usage. Electricity use would contribute indirectly to criteria air pollutant emissions; however, the emissions from electricity use are only quantified for GHGs in CalEEMod, since criteria pollutant emissions occur at the site of the power plant, which is typically off site. The project does not include the use of natural gas during operation. Therefore, no emissions associated with energy sources were quantified for the air quality analysis. The estimated annual electricity consumption from the project was provided by the applicant and assumed to be 17,520 megawatt-hours per year.

Mobile Sources. Following the completion of construction activities, the project would generate criteria pollutant emissions from mobile sources (vehicular traffic) as a result of the periodic maintenance of the project. The project was assumed to require up to 20 employees visiting the BESS facility sites 7 days a week for operation and maintenance activities. The estimated trip lengths and trip modes were based on CalEEMod default data. CalEEMod was used to estimate emissions from proposed vehicular sources. CalEEMod default data, including temperature, trip characteristics, variable start information, and emissions factors, were conservatively used for the model inputs. Project-related traffic was assumed to include a mixture of vehicles in accordance with the associated use, as modeled within CalEEMod, which is based on the CARB EMFAC2021 model. Emission factors representing the vehicle mix and emissions for 2028 were used to estimate emissions associated with vehicular sources.

Off-Road Sources. During irregular maintenance, the project may require the movement or replacement of battery enclosures during the lifetime of the project. As such, the use of 1 crane and 1 forklift were assumed to assist the lifting and movement of the BESS containers. CalEEMod was used to estimate criteria air pollutant emissions of the crane and forklift assuming 4 hours of operation on two days during a maintenance year.

Stationary Sources. The project will install two emergency diesel generators (4,360 horsepower) for emergency safety systems during a power outage that lasts longer than 24-48 hours. This 24-hour window would provide operations personnel enough time to safely de-energize and isolate equipment during operation. CalEEMod was used to estimate criteria air pollutant emissions of the generator assuming 2 hour per day

and 400 hours per year for maintenance and testing and emergency operations per BAAD guidance.

Table 5.1-5 presents the maximum daily and annual emissions associated with the operation of the Project in 2028 after all phases of construction have been completed, including project components both within and outside the CEC's Opt-In certification.

TABLE 5.1-5 ESTIMATED MAXIMUM DAILY AND ANNUAL OPERATIONAL CRITERIAL POLLUTANT EMISSIONS

Sources	ROG	NOx	CO	SOx	PM10	PM2.5
	DAILY (LBS/DAY)					
Mobile	0.12	0.13	1.14	<0.01	0.35	0.09
Area	0.37	<0.01	0.02	<0.01	<0.01	<0.01
Off-Road	0.02	0.20	0.30	<0.01	<0.01	<0.01
Stationary	21.5	1.05	54.8	0.10	0.42	0.42
Total	22.0	1.39	56.2	0.11	0.78	0.52
BAAD Thresholds of Significance	54	54	NA	NA	82	54
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**
	ANNUAL (TONS/YEAR)					
Mobile	0.02	0.02	0.21	<0.01	0.06	0.02
Area	0.07	<0.01	<0.01	<0.01	<0.01	<0.01
Off-Road	<0.01	0.04	0.06	<0.01	<0.01	<0.01
Stationary	3.92	0.19	10.00	0.02	0.08	0.08
Total	4.01	0.25	10.3	0.02	0.14	0.09
BAAD Thresholds of Significance	10	10	NA	NA	15	10
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Source: LA 2025g and staff analysis.

As shown in **Table 5.1-5**, daily and annual operational emissions for the project would not exceed BAAD's significance thresholds for any criteria air pollutant. Therefore, the project would result in a less-than-significant impact related to emissions of criteria air pollutant emissions during operation.

c. Would the project expose sensitive receptors to substantial pollutant concentrations?

This section describes the effect of proposed project emissions on the ambient air pollutant concentrations and identifies sensitive receptors potentially impacted by project construction and operations.

Staff considers any new AAQS exceedance or a substantial contribution to any existing AAQS exceedance caused by the project's emissions to be substantial evidence of potentially significant impacts that would require the evaluation of potential mitigation measures.

This section discusses criteria pollutant impacts from construction and operation. **Section 5.10, Public Health**, discusses the results of toxic air contaminants for both construction and operation.

Construction

Less Than Significant with Mitigation Incorporated. Construction emissions of criteria pollutants, including NO_2, CO, SO_2, PM10, and PM2.5, have been evaluated under criterion "b" of the CEQA environmental checklist above. Emissions during project construction, including components both within and outside the CEC's Opt-In certification, would not exceed significance thresholds for construction activities, as established in the BAAD CEQA Guidelines. With the staff recommendation to implement COCs **AQ-SC1** through **AQ-SC5** and **MM AQ-1** to control fugitive dust and combustion emissions, construction emissions would not exceed the BAAD significance thresholds. Although project construction emissions would fall below the emissions thresholds, this section of the staff analysis explores the ambient air quality impacts of criteria pollutant emissions during construction to evaluate whether the project would expose sensitive receptors to substantial pollutant concentrations.

The applicant provided an air dispersion modeling analysis for NO_2, CO, SO_2, PM10, and PM2.5 impacts during construction. The applicant conducted the air dispersion modeling using the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD [Version 23132]). The four-year meteorological data (2013-2016) for the Livermore Station were obtained from BAAD as the recommended meteorological station and input to AERMOD. Air dispersion modeling of emissions from construction equipment was conducted using emissions estimated using CalEEMod, assuming emissions would occur eight hours per day, five days per week. Vendor and hauling trips were modified to account only for emissions occurring within 0.25 miles of the project site. The proposed project area was modeled as a series of adjacent line-volume sources.

The applicant's analysis shows that the project's construction emissions, if unmitigated, could cause exceedance of for the 1-hour NO_2 NAAQS, annual NO_2 CAAQS, and 24-hour PM2.5 NAAQS. Therefore, the applicant proposed mitigation measure to require use of Tier 4 off-road equipment during construction (Dudek 2025g). Staff incorporated this mitigation measure in COC **AQ-SC5**.

Table 5.1-6 shows the results of dispersion modeling to reflect the mitigated emissions with the use of Tier 4 off-road equipment during construction, as specified in COC **AQ-SC5**. The project impact column shows the worst-case impacts of the project from modeling. The background column shows the highest concentrations from the prior three years (2022-2024), from **Table 5.1-2**. The total impact column shows the sum of the existing background condition plus the maximum modeled impact predicted by the modeling analysis. The limiting standard column shows the applicable limiting AAQS.

TABLE 5.1-6 MAXIMUM AMBIENT AIR QUALITY IMPACTS DURING CONSTRUCTION-MITIGATED (µg/m³)

Pollutant	Averaging Time	Project Impact	Background	Total Impact	Limiting Standard	Percent of Standard
PM10	24-hour	1.15	39.7	40.85	50	82
	Annual	0.54	6.7	7.24	20	36
PM2.5	24-hour	0.85	**43.2**	**44.05**	35	**126**
	Annual	0.40	7.5	7.9	9	88
CO	1-hour	457.77	18,902	19,360	23,000	84
	8-hour	262.04	4,239	4,501	10,000	45
NO_2 [a]	State 1-hour	90.94	79.03	169.97	339	50
	Federal 1-hour	90.94	63.99	154.93	188	82
	Annual	19.55	15.05	34.6	57	61
SO_2 [a]	State 1-hour	0.67	34.61	35.28	655	5
	Federal 1-hour	0.67	15.73	16.40	196	8
	24-hour	7	4.46	11.46	105	11

Notes: Concentrations in **bold** type are those that exceed the limiting ambient air quality standard.
a The state 1-hour NO_2 and SO_2 total impacts include the maximum modeled project impact combined with maximum NO_2 and SO_2 background value. The federal 1-hour NO_2 and SO_2 total impacts include the maximum modeled project impact combined with 98th and 99th percentiles of daily maximum 1-hour background NO_2 and SO_2 concentrations.
Source: LA 2025g with staff analysis.

Table 5.1-6 shows that the impacts from project construction would be below the limiting standards for CO, NO_2, and SO_2. Even though the PM10 and annual PM2.5 background for the last three years of available data were lower than the applicable AAQS, the SFBAAB is still classified as nonattainment for PM10 and PM2.5. The project would therefore contribute to existing regional exceedances of the PM standards. However, the maximum modeled PM10 impacts of 1.15 µg/m^3 and 0.54 µg/m^3 would be lower than the U.S. EPA SILs of 5 µg/m^3 for 24-hour impacts and 1 µg/m^3 for annual impacts respectively. The modeled 24-hour PM2.5 concentration of 0.85 µg/m^3 from project construction would not exceed the U.S. EPA PM2.5 SILs of 1.2 µg/m^3 for 24-hour impacts. The annual average PM2.5 impact of 0.4 µg/m^3 during construction would exceed the BAAD significance threshold of 0.3 µg/m^3 and the annual PM2.5 SILs of 0.13 µg/m^3. However, the maximum modeled annual PM2.5 impact would occur at the east fence line. The impacts would decrease rapidly with distance from the fence line. The maximum annual PM2.5 impacts at the nearest sensitive receptors would be lower than the U.S. EPA annual PM2.5 SILs of 0.13 µg/m^3. In addition, construction is considered short-term and the impacts during construction would be reduced with the implementation of staff proposed COCs **AQ-SC3** through **AQ-SC5** and recommended **MM AQ-1**. With mitigation, the PM2.5 impacts of the project during construction would be less than significant.

With the implementation of COCs, project construction would not expose sensitive receptors to substantial criteria pollutant concentrations, and this impact would be less than significant.

Operation

Less Than Significant Impact. The AQIA for project operation includes emissions from mobile sources (vehicle trips), area sources, energy sources, off-road equipment, and stationary sources. The applicant's AQIA compares worst-case ground-level impacts resulting from the project operation with established state and federal AAQS, including components both within and outside the CEC's Opt-In certification. Staff reviewed the applicant's dispersion modeling files, and staff agrees with the inputs used by the applicant and the outputs from the model for the AQIA.

TABLE 5.1-7 MAXIMUM AMBIENT AIR QUALITY IMPACTS DURING OPERATION (µg/m³)

Pollutant	Averaging Time	Project Impact	Background	Total Impact	Limiting Standard	Percent of Standard
PM10	24-hour	0.11	39.7	39.81	50	80
	Annual	0.01	6.7	6.71	20	34
PM2.5	24-hour	0.10	**43.2**	**43.3**	35	**124**
	Annual	0.01	7.5	7.51	9	83
CO	1-hour	57.42	18,902	18959	23,000	82
	8-hour	28.15	4,239	4267	10,000	43
NO_2 [a]	State 1-hour	4.69	79.03	83.72	339	25
	Federal 1-hour	4.69	63.99	68.68	188	37
	Annual	0.12	15.05	15.17	57	27
SO_2 [a]	State 1-hour	0.11	34.61	34.72	655	5
	Federal 1-hour	0.11	15.73	15.84	196	8
	24-hour	0.02	4.46	4.48	105	4

Notes: Concentrations in **bold** type are those that exceed the limiting ambient air quality standard.
a The state 1-hour NO_2 and SO_2 total impacts include the maximum modeled project impact combined with maximum NO_2 and SO_2 background value. The federal 1-hour NO_2 and SO_2 total impacts include the maximum modeled project impact combined with 98th and 99th percentiles of daily maximum 1-hour background NO_2 and SO_2 concentrations.
Source: LA 2025g with staff analysis.

As shown in **Table 5.1-7**, the proposed project would not exceed the CAAQS or NAAQS after accounting for background concentrations for CO, NO_2, and SO_2. Even though the PM10 and annual PM2.5 background for the last three years of available data were lower than the applicable AAQS, the SFBAAB is still classified as nonattainment for PM10 and PM2.5. The project would therefore contribute to existing regional exceedances of the PM standards. However, the maximum modeled PM10 and PM2.5 impacts during project operation would not exceed the applicable U.S. EPA SILs or the BAAD significance threshold of 0.3 µg/m^3 for annual PM2.5.

BESS Thermal Runaway and Fire Impacts

Section 4.4, **Worker Safety and Fire Protection**, provides a detailed discussion regarding potential BESS safety hazards and concludes that the risk of BESS thermal runaway is small and is heavily influenced by older (pre-2025) technology. The overall utility-scale BESS failure rate has sharply decreased while the global installed capacity has dramatically increased. The most recent data from EPRI shows that the failure rate dropped by 98 percent from 2018 to 2024 as lessons learned from early failures have

been incorporated into the latest designs and best practices. See more detailed discussion in **Section 4.4, Worker Safety and Fire Protection**.

Section 5.10, Public Health, provides a detailed discussion regarding potential air quality and public health impacts during a BESS thermal runaway and fire event. Based on the review of the monitoring data for past BESS incidents, applicant's modeling analysis for this project, and the infrequent, irregular, and unplanned nature of the BESS thermal runaway/fire events, staff concludes that potential BESS thermal runaway/fire events would not expose sensitive receptors to substantial pollutant concentrations. In addition, staff recommended COCs in **Section 4.4, Worker Safety and Fire Protection**, and **Section 5.7, Hazards, Hazardous Materials, and Wildfire**, would further reduce any impacts to public health. COC **WORKER SAFETY-6** would ensure that the proposed BESS would comply with the latest versions of National Fire Protection Association (NFPA) 855 for BESS safety. COC **WORKER SAFETY-7** would require administrative and engineering controls to prevent or respond to a fire from the BESS. COC **WORKER SAFETY-8** and COC **WORKER SAFETY-10** would ensure additional fire protection and worker EMS response. COC **HAZ-9** would also require real-time measurements of air quality to provide timely feedback to any workers or people potentially affected. The adoption of these COCs would further reduce the risk and impacts of any BESS thermal runway/fire events. See more detailed discussion in **Section 5.10, Public Health**.

Therefore, project operation would not expose sensitive receptors to substantial pollutant concentrations, and this impact would be less than significant.

d. Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

This section considers impacts that may arise from emissions other than criteria air pollutants, such as emissions that may lead to odors. Toxic air contaminants are addressed separately in **Section 5.10, Public Health**.

Construction

Less Than Significant with Mitigation Incorporated. Construction activities, including components both within and outside the CEC's Opt-In certification, could temporarily result in emissions that lead to odors. For example, diesel exhaust and VOCs would be emitted from diesel engines used for project construction. However, there will be a limited number of diesel engines used during project construction and the construction duration will not exceed 18 months. Odors from construction activities within the site would be temporary in nature and dissipate as a function of distance. Accordingly, project construction is not expected to involve sources of emissions that may lead to odor impacts or impacts of emissions other than those pollutants identified elsewhere in this analysis.

Fugitive dust emissions can also create a nuisance that can cause adverse effects. To ensure that fugitive dust emissions would not occur at levels that could adversely affect

a substantial number of people, the project would implement fugitive dust control measures as specified in COC **AQ-SC3** and **AQ-SC4**, which incorporates the BAAD construction fugitive dust control BMPs, and staff recommended **MM AQ-1**. Therefore, the project would not have substantial fugitive dust emissions during construction that could adversely affect a substantial number of people.

Therefore, the construction of the project would not result in other emissions, such as those leading to odors, that could adversely affect a substantial number of people and construction activities would have a less than significant impact.

Operation

Less Than Significant Impact. Potential odor sources from project operation, including components both within and outside the CEC's Opt-In certification, would include diesel exhaust from readiness testing and maintenance of the emergency backup engines and from vehicle trips. Once built and operating, the project would have no notable emissions other than those from mobile sources and diesel emergency backup engines identified elsewhere in this analysis. Nuisance impacts would not be likely to occur during project operation. Therefore, during operation, the project would not result in odors or other emissions that could adversely affect a substantial number of people and would have a less than significant impact.

5.1.2.3 Cumulative Impacts

Based on the analysis below, the project would not result in a cumulatively considerable net increase of any criteria air pollutant, and the project's potential to contribute to the cumulative impact of criteria pollutant concentrations would be less than significant with mitigation incorporated.

Construction and Operation

Less Than Significant with Mitigation Incorporated. The conclusion for cumulative impacts to criteria air pollutant concentrations relies on the quantified emissions and the modeled concentrations presented above. Each of the projects in the cumulative project scenario could result in some level of contribution to the region's adverse air quality conditions, although the individual contribution of each project would be minimized if each project is consistent with air quality management planning efforts and in compliance with applicable local air district rules and regulations, as described with the regulatory setting.

Under environmental checklist criterion "b," staff concludes that the project's criteria pollutant emissions, including components both within and outside the CEC's Opt-In certification, would not occur at rates that could be cumulatively significant. The project's emissions of criteria pollutants and precursors during construction and operation would not exceed any threshold of significance. With the implementation of COCs **AQ-SC1** through **AQ-SC5** and **MM AQ-1**, the project construction would not result in a cumulatively significant impact.

Under environmental checklist criterion "c," staff presents the results of air quality impact analysis for all criteria pollutants during construction and operation. The total air quality impacts include background concentrations as a means of capturing the effects of existing sources in the cumulative conditions.

The current nonattainment of PM10 and PM2.5 standards in the area is due to the combined effects of existing, background stationary and mobile sources. With the implementation of COC **AQ-SC5**, the proposed project's individual impact would be below the thresholds of the PM10 and PM2.5 SILs for all sensitive receptor locations. The project's incremental contribution to the cumulative impact would not be cumulatively considerable.

5.1.3 Project Conformance with Applicable LORS

Table 5.1-9 includes CEC staff's determination of conformance with applicable local, state and federal LORS, including any proposed COCs, where applicable, to ensure the project components within the CEC's Opt-In certification would conform with LORS. As shown in this table, CEC staff concludes that with implementation of specific COCs, the proposed project would conform with all applicable LORS. The subsection below, "5.1.5 Proposed Conditions of Certification," contains the full text of the referenced COCs.

TABLE 5.1-9 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis For Determination
Federal	
Clean Air Act	
40 Code of Federal Regulations (CFR) Part 51, Nonattainment NSR Program	**Yes.** New source review requirements are implemented through BAAD rules and regulations. COCs for the emergency engines **AQ-1** through **AQ-13** would ensure BAAD rules and regulations are satisfied.
40 CFR Part 60, NSPS Subpart IIII	**Yes.** Applies to proposed project's diesel-fueled stationary emergency generator engines. Project owner would purchase certified engines and operate them according to manufacturer's instructions. See COCs **AQ-1** through **AQ-13**.
State	
California Health and Safety Code	
Section 41700, Nuisance Provisions	**Yes.** Applies to all of the proposed project's emitting activities and sources. To avoid the potential for injury, detriment, nuisance, or annoyance this analysis includes COCs **AQ-SC1** to **AQ-SC4** for minimizing visible dust during construction.
U.S. EPA/CARB Off-Road Mobile Sources Emission Reduction Program	**Yes.** Mandates that CARB achieve the maximum degree of emission reductions from all off-road mobile sources to attain the state ambient air quality standards. Off-road mobile sources include construction equipment. COC **AQ-SC5** would ensure construction equipment meets the latest tier.

TABLE 5.1-9 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
CARB In-Use Off-Road Diesel Fueled Fleets Regulation	**Yes.** The regulations for in-use off-road diesel equipment are designed to reduce NOx and DPM. COC **AQ-SC5** would ensure construction equipment meets state-wide standards.
Local	
The Alameda County East County Area Plan	
Air Quality Element: Policy 291 through 305	**Yes.** The County's East County Area Plan includes goals and policies that are designed to reduce the emissions of criteria air pollutants, in buildings, conservation, and other methods of efficiency. This analysis includes COCs **AQ-SC1** to **AQ-SC5, AQ-1** to **AQ-13** and **MM AQ-1** to reduce air quality impacts to less than significant.
Bay Area Air District	
Regulation 6, Rule 1 – General Requirements.	This rule limits the quantity of particulate matter in the atmosphere through the establishment of limitations on emission rates, concentration, visible emissions, and opacity. COC **AQ-9** would ensure the compliance with this rule.
Regulation 6, Rule 6 – Prohibition of Trackout.	This rule addresses fugitive road dust emissions associated with trackout of solid materials onto paved public roads outside the boundaries of large bulk material sites, large construction sites, and large disturbed surface sites (sites of 1 acre or more). COC **AQ-SC3** would ensure the compliance with this rule.
Regulation 8, Rule 1 – General Provisions.	This rule limits the emission of organic compounds into the atmosphere. COC **AQ-9** would ensure the compliance with this rule.
Regulation 8, Rule 3 – Architectural Coatings.	This rule limits the quantity of ROGs in architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within the BAAD. COC **AQ-9** would ensure the compliance with this rule.
Regulation 9, Rule 8: Nitrogen Oxides And Carbon Monoxide From Stationary Internal Combustion Engines.	This rule limits NOx and CO emissions from stationary internal combustion engines with an output rated by the manufacturer at more than 50 brake horsepower, including the project's standby diesel-fueled engines. COC **AQ-9** would ensure the compliance with this rule.

5.1.4 Conclusions and Recommendations

As discussed above, with implementation of COCs, the project would have a less than significant impact related to air quality and would conform with applicable LORS. CEC staff recommends adopting the COCs as detailed in subsection "5.1.5 Proposed Conditions of Certification" below. The COCs below are enforceable as part of the CEC's certificate for the project.

Impacts associated with the project components outside the CEC's Opt-In certification to be considered for permitting by CPUC would be further reduced with the inclusion of MMs as detailed in subsection "5.1.6 Recommended Mitigation Measures" below.

5.1.5 Proposed Conditions of Certification

AQ-SC1 Air Quality Construction Mitigation Manager (AQCMM). The project owner shall designate and retain an on-site AQCMM who shall be responsible for directing and documenting compliance with Conditions of Certification **AQ-SC3, AQ-SC4** and **AQ-SC5** for the entire project site and linear facility construction. The on-site AQCMM may delegate responsibilities to one or more AQCMM Delegates. The AQCMM and AQCMM Delegates shall have full access to all areas of construction on the project site and linear facilities and shall have the authority to stop any or all construction activities as warranted by applicable construction mitigation conditions. The AQCMM and AQCMM Delegates may have other responsibilities in addition to those described in this condition. The AQCMM shall not be terminated without written consent of the Compliance Project Manager (CPM).

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall submit to the CPM for approval, the name, resume, qualifications, and contact information for the on-site AQCMM and all AQCMM Delegates.

AQ-SC2 Air Quality Construction Mitigation Plan (AQCMP). The project owner shall provide an AQCMP, for approval, which details the steps that will be taken and the reporting requirements necessary to ensure compliance with Conditions of Certification **AQ-SC3, AQ-SC4** and **AQ-SC5**.

Verification: At least 30 days prior to the start of any ground disturbance, the project owner shall submit the AQCMP to the CPM for approval. The AQCMP shall include effectiveness and environmental data for the proposed soil stabilizer. The CPM will notify the project owner of any necessary modifications to the plan within 15 days from the date of receipt.

AQ-SC3 Construction Fugitive Dust Control. The AQCMM shall submit documentation to the CPM in each Monthly Compliance Report (MCR) that demonstrates compliance with the AQCMP mitigation measures for the purposes of minimizing fugitive dust emission creation from construction activities and preventing all fugitive dust plumes that would not comply with the performance standards identified in **AQ-SC4** from leaving the project site. Any deviation from the AQCMP mitigation measures shall require prior CPM notification and approval and shall require demonstration that such deviation will not result in a new or increased significant environmental impact.

Report monthly on the following fugitive dust mitigation measures that shall be included in the AQCMP required by **AQ-SC2**:

a. The main access roads through the facility will be either paved or stabilized using soil binders, or equivalent methods, to provide a stabilized surface that is similar for the purposes of dust control to paving, that may or may not include a crushed rock (gravel or similar material with fines removed) top layer, prior to initiating construction, and delivery areas for operations materials (chemicals, replacement parts, etc.) will be paved or treated prior to taking initial deliveries.

b. All unpaved construction roads and unpaved operation and maintenance site roads, as they are being constructed, shall be stabilized with a non-toxic soil stabilizer or soil weighting agent that can be determined to be as efficient as or more efficient for fugitive dust control than CARB approved soil stabilizers, and that shall not increase any other environmental impacts, including loss of vegetation to areas beyond where the soil stabilizers are being applied for dust control. All other disturbed areas in the project and linear construction sites shall be watered as frequently as necessary during grading; and after active construction activities shall be stabilized with a non-toxic soil stabilizer or soil weighting agent, or alternative approved soil stabilizing methods, to comply with the dust mitigation objectives of COC **AQ-SC4**. The frequency of watering can be reduced or eliminated during periods of precipitation.

c. No vehicle shall exceed 15 miles per hour on unpaved areas within the construction site, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.

d. Visible speed limit signs shall be posted at the construction site entrances.

e. All construction equipment vehicle tires shall be inspected and washed as necessary to be cleaned free of dirt prior to entering paved roadways.

f. Gravel ramps of at least 20 feet in length must be provided at the tire washing/cleaning station.

g. All unpaved exits from the construction site shall be graveled or treated to prevent track-out to public roadways.

h. All construction vehicles shall enter the construction site through the treated entrance roadways, unless an alternative route has been submitted to and approved by the CPM.

i. Construction areas adjacent to any paved roadway below the grade of the surrounding construction area or otherwise directly impacted by sediment from site drainage shall be provided with sandbags or other equivalently effective measures to prevent run-off to roadways, or other similar run-off control measures as specified in the Storm Water Pollution Prevention Plan (SWPPP), only when such SWPPP measures are necessary so that this condition does not conflict with the requirements of the SWPPP.

j. All paved roads within the construction site shall be swept daily or as needed (less during periods of precipitation) on days when construction activity occurs to prevent the accumulation of dirt and debris.

k. At least the first 500 feet of any paved public roadway exiting the construction site or exiting other unpaved roads en route from the construction site or construction staging areas shall be swept as needed (less during periods of precipitation) on days when construction activity occurs or on any other day when dirt or runoff resulting from the construction site activities is visible on the public paved roadways.

l. All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered or shall be treated with appropriate dust suppressant compounds.

m. All vehicles that are used to transport solid bulk material on public roadways and that have potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least two feet of freeboard.

n. Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) shall be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this condition shall remain in place until the soil is stabilized or permanently covered with vegetation.

Verification: The AQCMM shall provide the CPM a MCR to include the following to demonstrate control of fugitive dust emissions:

A. A summary of all actions taken to maintain compliance with this condition;

B. Copies of any complaints filed with the District in relation to project construction; and

C. Any other documentation deemed necessary by the CPM and AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

AQ-SC4 Dust Plume Response Requirement. The AQCMM or an AQCMM Delegate shall monitor all construction activities for visible dust plumes. Observations of visible dust plumes that have the potential to be transported (A) off the project site and within 400 feet upwind of any regularly occupied structures not owned by the project owner or (B) 200 feet beyond the centerline of the construction of linear facilities indicate that existing mitigation measures are not resulting in effective mitigation. The AQCMP shall include a section detailing the additional mitigation measures described in the verification below and how they will be implemented to meet these fugitive dust control performance standards.

The AQCMM or Delegate shall implement the following procedures for additional mitigation measures if visible dust plumes as defined above are observed:

- Step 1: The AQCMM or Delegate shall direct more intensive application of the existing mitigation methods within 15 minutes of making such a determination.
- Step 2: The AQCMM or Delegate shall direct implementation of additional methods of dust suppression if Step 1, specified above, fails to result in adequate mitigation within 30 minutes of the original determination.
- Step 3: The AQCMM or Delegate shall direct a temporary shutdown of the activity causing the emissions if Step 2, specified above, fails to result in effective mitigation within one hour of the original determination. The activity shall not restart until the AQCMM or Delegate is satisfied that appropriate additional mitigation or other site conditions have changed so that visual dust plumes will not result upon restarting the shutdown source. The project owner may appeal to the CPM any directive from the AQCMM or Delegate to shut down an activity, if the shutdown shall go into effect within one hour of the original determination, unless overruled by the CPM before that time.

Verification: The AQCMM shall provide the CPM a MCR to include:

A. A summary of all actions taken to maintain compliance with this condition;

B. Copies of any complaints filed with the District in relation to project construction; and

C. Any other documentation deemed necessary by the CPM and AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

AQ-SC5 Diesel-Fueled Engine Control. The AQCMM shall submit to the CPM, in the MCR, a construction mitigation report that demonstrates compliance with the AQCMP mitigation measures for purposes of controlling diesel construction-related emissions. Any deviation from the AQCMP mitigation measures shall require prior and CPM notification and approval and shall require demonstration that such deviation will not result in a new or increased significant environmental impact.

The following off-road diesel construction equipment mitigation measures shall be included in the AQCMP required by **AQ-SC2**:

a. All diesel-fueled engines used in the construction of the facility shall have clearly visible tags issued by the on-site AQCMM showing that the engine meets the conditions set forth herein.

b. All construction diesel engines with a rating of 25 hp or higher shall meet, at a minimum, the Tier 4 Final California Emission Standards for Off-Road Compression-Ignition Engines, as specified in California Code of Regulations,

Title 13, section 2423(b)(1), unless a good faith effort to the satisfaction of the CPM that is certified by the on-site AQCMM demonstrates that such engine is not available for a particular item of equipment. In the event that a Tier 4 Final engine is not available for any off-road equipment larger than 25 hp, a Tier 4 Interim or Tier 3 engine shall be used or that equipment shall be equipped with retrofit controls to reduce exhaust emissions of nitrogen oxides (NOx) and diesel particulate matter (DPM) to no more than Tier 3 levels unless certified by engine manufacturers or the on-site AQCMM that the use of such devices is not practical for specific engine types. For purposes of this condition, the use of such devices is "not practical" for the following, as well as other, reasons.

1. There is no available retrofit control device that has been verified by either the California Air Resources Board or U.S. Environmental Protection Agency to control the engine in question; or
2. The construction equipment is intended to be on site for 10 days or less; or
3. The CPM may grant relief from this requirement if the AQCMM can demonstrate a good faith effort to comply with this requirement and that compliance is not practical. Before a relief may be granted, the AQCMM shall: (i) demonstrate that at least two construction fleet owners/operators in the County of Alameda were contacted and that those owners/operators confirmed Tier 4 Final equipment could not be located within the County of Alameda during the desired construction schedule; and (ii) the proposed replacement equipment has been evaluated using California Emissions Estimator Model (CalEEMod) or other industry standard emission estimation method and documentation provided to the County of Alameda to confirm that necessary project-generated emissions reductions are achieved.

c. The use of a retrofit control device may be terminated immediately, provided that the CPM is informed within 10 working days of the termination and that a replacement for the equipment item in question meeting the controls required in item "b" occurs within 10 days of termination of the use, if the equipment would be needed to continue working at this site for more than 15 days after the use of the retrofit control device is terminated, if one of the following conditions exists:

1. The use of the retrofit control device is excessively reducing the normal availability of the construction equipment due to increased down time for maintenance, and/or reduced power output due to an excessive increase in back pressure.
2. The retrofit control device is causing or is reasonably expected to cause engine damage.

3. The retrofit control device is causing or is reasonably expected to cause a substantial risk to workers or the public.
4. Any other seriously detrimental cause which has the approval of the CPM prior to implementation of the termination.

d. All heavy earth-moving equipment and heavy-duty construction-related trucks with engines meeting the requirements of (b) above shall be properly maintained and the engines tuned to the engine manufacturer's specifications.

e. All diesel heavy construction equipment shall not idle for more than two minutes. Vehicles that need to idle as part of their normal operation (such as concrete trucks) are exempted from this requirement.

f. Minimize idling time for all engines by shutting engines when not in use or limiting idling time to a maximum of five minutes. Provide clear signage for construction workers at all access points.

g. Use California Air Resources Board–approved renewable diesel fuel in off-road construction equipment and on-road trucks when feasible.

h. Construction equipment will employ zero-emission or hybrid powertrains and electric motors when feasible.

Verification: The AQCMM shall include in the MCR the following to demonstrate control of diesel construction-related emissions:

A. A summary of all actions taken to control diesel construction related emissions;

B. A list of all heavy equipment used on site during that month, including the owner of that equipment and a letter from each owner indicating that equipment has been properly maintained; and

C. Any other documentation deemed necessary by the CPM, and the AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

COCs APPLICABLE TO EACH OF THE TWO 4,360 HORSEPOWER EMERGENCY DIESEL GENERATORS

AQ-1 The project owner shall operate each emergency standby engine only for the following purposes: to mitigate emergency conditions, for emission testing to demonstrate compliance with a District, state or Federal emission limit, or for reliability-related activities (maintenance and other testing, but excluding emission testing). Operating while mitigating emergency conditions or while emission testing to show compliance with District, state or Federal emission limits is not limited.

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation reports.

AQ-2 The project owner shall operate each emergency standby engine only when a nonresettable totalizing meter (with a minimum display capability of 9,999 hours) that measures the hours of operation for the engine is installed, operated and properly maintained.

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation reports.

AQ-3 Records: The project owner shall maintain the following monthly records in a CPM approved log for at least 36 months from the date of entry. Log entries shall be retained on-site, either at a central location or at the engine's location, and made immediately available to the CPM upon request.

a. Hours of operation for reliability-related activities (maintenance and testing). b. Hours of operation for emission testing to show compliance with emission limits.

c. Hours of operation (emergency).

d. For each emergency, the nature of the emergency condition.

e. Fuel usage for each engine(s).

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation reports.

AQ-4 The project owner shall not exceed the following limits per year per engine for reliability related activities:

- 50 Hours of Diesel fuel (Diesel fuel)

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation reports.

AQ-5 The project owner shall ensure each engine is abated at all times of operation by an approved Selective Catalytic Reduction (SCR) System and Diesel Particulate Filter (DPF) equipped with a backpressure monitor or other approved Diesel Exhaust Particulate Matter Abatement System. The engine, SCR System, and DPF with backpressure monitor, or other approved system shall be installed, maintained, and operated in accordance with the manufacturer specifications and/or best modern practices.

Verification: The project owner shall make the site available for inspection by representatives of the District, CARB, U.S. EPA and the CEC.

AQ-6 The project owner shall take all corrective actions recommended by the manufacturer in response to backpressure monitor notifications.

Verification: The project owner shall make the site available for inspection by representatives of the District, CARB, U.S. EPA and the CEC.

AQ-7 The project owner shall ensure urea injection commences as soon as the SCR catalyst bed reaches the minimum operating temperature as specified by the manufacturer.

Verification: The project owner shall make the site available for inspection by representatives of the District, CARB, U.S. EPA and the CEC.

AQ-8 The project owner shall ensure engine emissions do not exceed an ammonia (NH_3) slip of 10 ppmv, dry @ 15% O_2 from the SCR system. If deemed necessary to demonstrate compliance with Regulation 2, Rule 5, the Air District may require a source test to determine compliance with this emission limit.

Verification: The project owner shall submit the emergency engine specifications and certification to the CPM at least 30 days prior to purchasing the engine for review and approval.

AQ-9 The project owner shall ensure engine emissions do not exceed the following limits:

NOx: 0.50 g/bhp-hour
CO: 2.60 g/bhp-hour
POC: 0.14 g/bhp-hour
PM: 0.02 g/bhp-hour

Verification: The project owner shall submit the emergency engine specifications and certification to the CPM at least 30 days prior to purchasing the engine for review and approval.

AQ-10 The project owner shall conduct an initial Air District-approved source test on the engine within 60 days of startup and once every three years thereafter at the normal or expected load during emergency operation using Air District approved source test methods. The project owner shall document urea usage (gallons per minute) and average kW during all tests, preferably as digital records. The project owner shall submit the source test results to the CPM no later than 60 days after source test completion.

Verification: The project owner shall submit the source test results to the CPM no later than 60 days after source test completion.

AQ-11 The project owner shall comply with all applicable testing, sampling port location and safe access requirements as specified in Volume IV of the Air

District's Manual of Procedures. The project owner shall notify the CPM, in writing, of the source test protocols, sampling port locations, layout, access and projected test dates at least 30 days prior to testing. The following test methods shall be used for each pollutant:

NOx: EPA Method 7E or Air District-approved equivalent
CO: EPA Method 10 or Air District-approved equivalent
POC: EPA Method 25A and EPA Method 18 or Air District-approved equivalent
PM (filterable): EPA Method 5 or Air District-approved equivalent

Verification: The project owner shall notify the CPM, in writing, of the source test protocols, sampling port locations, layout, access and projected test dates at least 30 days prior to testing.

AQ-12 The project owner shall maintain the following records in an CPM approved log and shall make these records available to CPM upon request. All records shall be retained for at least 36 months from the date of entry. These recordkeeping requirements shall not replace the recordkeeping requirements contained in any applicable Air District or state regulations.

a. Source Test Notifications.
b. All source test reports.
c. Engine serial number and source number for each source test.
d. Engine load percentage.
e. Engine, SCR, and DPF maintenance records.
f. SCR system owner's manual or manufacturer's specifications.
g. DPF owner's manual or manufacturer's specifications.
h. All backpressure monitor notifications and corrective actions.
i. SCR urea injection rate (gpm).

Verification: The project owner shall make the site available for inspection by representatives of the District, CARB, U.S. EPA and the CEC.

AQ-13 Any replacement of either emergency standby engine, including replacement with an identical unit, shall be subject to a new air quality impact analysis, including a Best Available Control Technology (BACT) analysis, and shall require approval by the CPM.

Verification: Prior to purchasing the engine, the project owner shall submit a petition to the CPM requesting review and approval of the proposed replacement.

5.1.6 Recommended Mitigation Measures

For the project components outside the CEC's Opt-In certification, the following mitigation measures (MMs) can and should be adopted by the agency with permitting authority over those components consistent with California Code of Regulations title 14, section 15091(a)(2). The measures are necessary to control fugitive dust during construction.

MM AQ-1 Vehicle Idling A vehicle operator is prohibited from idling an on-road diesel-fueled vehicle with a Gross Vehicle Weight of ≥10,001 lbs., or an off-road diesel-fueled vehicle with a primary engine ≥25 hp for >5 minutes unless conducting one or more of the following activities.

- Doing work for which the vehicle was intended;
- Powering equipment necessary to perform a job function;
- Operating lights or signals to direct traffic at a PG&E job site;
- Service, testing or maintenance on the vehicle;
- Regenerating an exhaust filter;
- Idling for safety reasons, including providing light when working after dark, defrosting windows, keeping the cabin warm to avoid a health hazard, and providing air conditioning to avoid heat illness;
- Idling due to traffic conditions beyond the vehicle operator's control;
- Warming an engine up to operating temperatures, as specified by the equipment manufacturer;
- Queuing, such as when a line of off-road trucks forms to receive materials from an excavator. Queuing does not include a vehicle waiting for another vehicle to perform a task. Idling while queuing is not allowed <100 feet of a residence.

Fugitive Dust-General Field crews must limit fugitive dust from PG&E project work at all times. The following measures will be implemented to minimize the potential for fugitive dust.

- Doing work for which the vehicle was intended;
- Powering equipment necessary to perform a job function;
- Operating lights or signals to direct traffic at a PG&E job site;
- Service, testing or maintenance on the vehicle;
- Regenerating an exhaust filter;
- Idling for safety reasons, including providing light when working after dark, defrosting windows, keeping the cabin warm to avoid a health hazard, and providing air conditioning to avoid heat illness;

- Idling due to traffic conditions beyond the vehicle operator's control;
- Warming an engine up to operating temperatures, as specified by the equipment manufacturer;
- Queuing, such as when a line of off-road trucks forms to receive materials from an excavator. Queuing does not include a vehicle waiting for another vehicle to perform a task. Idling while queuing is not allowed <100 feet of a residence.

Portable Equipment Registration Program (PERP) PG&E requires that portable engines be registered into the Statewide Portable Equipment Registration Program (PERP) administered by the California Air Resources Board (CARB), if:

- The engine is portable (mounted on a truck, trailer, skids, or wheels);
- The engine is >50 brake horsepower (bhp), and;
- The engine does not provide motive force for a vehicle.

Auxiliary engines mounted on vehicles need to be registered if they are >50 bhp. For PG&E-owned units, PG&E Environmental Management Air Program is responsible for maintaining valid PERP registration with support from Transportation Services. For rental units, the rental vendor is responsible for the PERP registration and to provide PG&E with a copy of the current registration, permit, and placard before use.

5.1.7 References

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CARB 2024c – California Air Resources Board (CARB). California State Implementation Plans. Accessed November 2025. Available online at: https://ww2.arb.ca.gov/our-work/programs/california-state-implementation-plans/about

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U.S. EPA 2025d – United States Environmental Protection Agency (U.S. EPA). Air Data: Air Quality Data Collected at Outdoor Monitors Across the US. Accessed November 2025. Available online at: https://www.epa.gov/outdoor-air-quality-data

5.2 Biological Resources

This section analyzes the project components within CEC's Opt-In Certification and project components outside of CEC's Opt-In Certification. The project components within CEC's Opt-In Certification include the construction and operation of the battery energy storage system (BESS), the power conversion system, medium voltage collection system, three operations and maintenance buildings constructed a minimum of 20 feet apart within the primary laydown yard, and a project substation/control building. The project components outside of CEC's Opt-In Certification include the construction and operation of the gen-tie line, transmission tower structure and expansion of a 500 kilo-volt (kV) breaker-and-a-half with a new circuit breaker, to be constructed and owned by Pacific Gas and Electric Company (PG&E). See **Section 2, Introduction**, for a complete description of the project components within the California Energy Commission's (CEC's) Opt-In certification and project components outside the CEC's Opt-In certification.

5.2.1 Environmental Setting

Existing Conditions

This section describes the environmental setting and baseline conditions for biological resources associated with the project. These conditions constitute the environmental baseline for purposes of analysis under the California Environmental Quality Act (CEQA), consistent with CEQA Guidelines section 15125(a), and reflect the existing physical environmental conditions at the time of the application submittal.

Vegetation communities within the approximately 70-acre BESS site and gen-tie alignment corridor (herein collectively defined as the project site) are described to characterize botanical resources and wildlife habitat values. In addition, this section identifies and describes the habitat types that may support special-status plant and wildlife species.

Regional Setting

The project is located within the northeastern portion of Alameda County, California. Regionally, the project is located near the base of the Altamont Pass near the San Joaquin Valley.

This region is characterized by a Mediterranean climate, which includes dry, hot summers and cool, wet winters. The region within which the proposed project occurs receives an average of about 12 inches of precipitation annually. Annual temperatures range from 38.3 degrees Fahrenheit (°F) to 92.6 °F, with the coolest temperatures in January and warmest temperatures in July (WRCC 2025).

Vegetation in the project site is defined as wild oats and annual brome grassland. This vegetation community is characterized by an herbaceous layer dominated by non-native

grass species including wild oats (*Avena* spp.), bromes (*Bromus* spp.), and barleys (*Hordeum* spp.) (CNPS 2025).

The project site occurs within the Lower Old River Watershed (hydrologic unit code (HUC) 1804000030605) (DWR 2025). According to the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI), there are several freshwater ponds, freshwater wetlands, and riverine aquatic features in the vicinity of the project site (USFWS 2025f). These features are depicted in **Figure 5.2-1** (Dudek 2025dd).

Local Setting

The project site is located on privately owned lands approximately 2.5 miles west of the city of Tracy, and south of Interstate 580 (see **Figure 3-2** in **Section 3, Project Description**). The site is within the 7.5-minute Midway U.S. Geological Survey (USGS) topographic quadrangle. The project area can be broadly defined as all areas surrounding the project site that would not be subject to development but would include adjacent habitat outside the site boundaries. The project vicinity includes all areas within 10 miles of the proposed project site and beyond. Primary access to the project site occurs from a gravel access road on the northern boundary off Patterson Pass Road. The project site consists of fallowed annual grasslands with historical use as rangeland for cattle grazing. Grazing within the project footprint, including the PG&E Tesla Substation parcel, is currently suspended due to active construction of the adjacent Mulqueeney Ranch Wind Project. Normal grazing operations are projected to resume pending the completion of construction activities and necessary fencing is installed. A small overlap occurs with the Mulqueeney project's temporary laydown yard and substation site southeast of Patterson Pass Road; construction here commenced in April 2025 and is scheduled for completion in late 2026. A review of recent satellite imagery (Google Earth 2025) identified evidence of a recent fire in this southeastern area, which partially affected vegetation along Patterson Run creek.

Elevation in the project area increases from approximately 383 to 523 feet above mean sea level featuring a gentle slope surrounded by a relatively flat terrain. According to the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service, three soil types are present: Linne clay loam, 3 percent to 15 percent slopes (65.65 acres); Linne clay loam, 15 percent to 30 percent slopes, MLRA 15 (2.80 acres); and Rincon clay loam, 0 percent to 3 percent slopes (19.75 acres) (USDA 2025). The Linne series consists of moderately deep, well drained soils that formed in material from soft shale and sandstone. The Rincon series consists of deep, well drained soils that formed in alluvium from sedimentary rock. None of the three soil types mapped on site are included on the USDA list of hydric soils commonly associated with wetlands or other waters.

The Alameda County General Plan – East County Area Plan designates the project site primarily as Large Parcel Agriculture (LPA). This area is also within the Altamont Pass Wind Resource Area (APWRA) (Alameda 1994). Land uses in the immediate vicinity include undeveloped rural agricultural lands, multiple high-voltage transmission lines and electrical substations, rural roads and railroad lines.

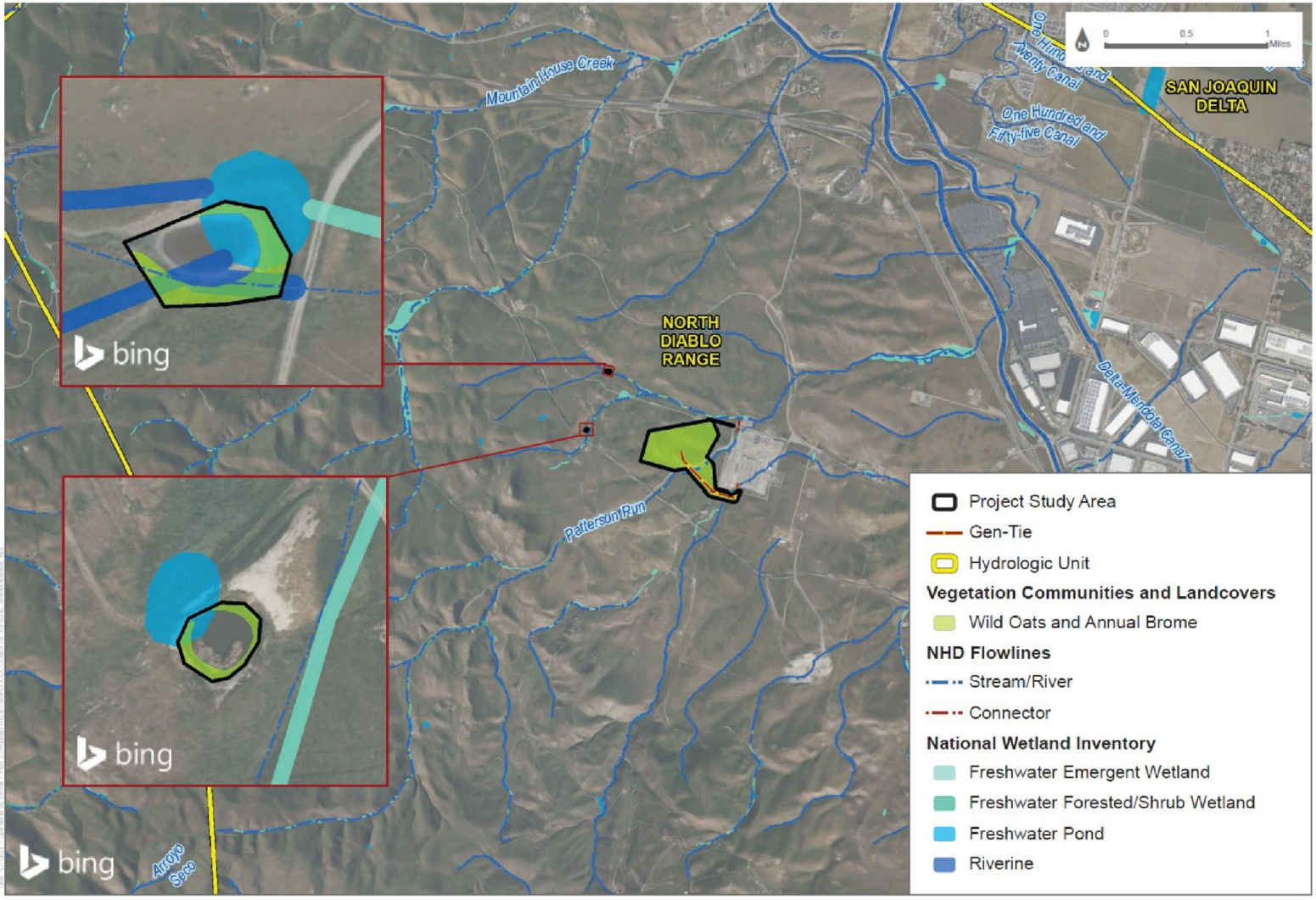


Figure 5.2-1
Biological Setting

Sources: Dudek 2025dd, Bing Maps 2024, Open Street Map 2019, USFWS 2019, USGS 2019

Vegetation Communities

This section describes the methods utilized by the applicant to identify and define the vegetation communities and habitats that occur within the project site. Generally, the project site is characterized as a transition zone between the Diablo Range foothills and the agricultural lands of the San Joaquin Valley. The area is dominated by annual grasslands and undeveloped lands.

Vegetation communities would typically be categorized to the alliance level, when applicable, consistent with A Manual of California Vegetation, 2nd Edition (MCV) (Sawyer et al. 2009) and updated in the current online edition (CNPS 2025). Descriptions of the vegetation communities identified by the applicant are presented below for the project and are mapped in both **Figure 5.2-2** below, as well as in the application as Figure 3 in Chapter 2.5 of the Temporary Impact Revegetation and Habitat Restoration Plan (Dudek 2025vv).

Wild Oats and Annual Brome Grassland (*Avena* spp. - *Bromus* spp. Herbaceous Semi-Natural Alliance). Wild Oats and Annual Brome Grassland was the dominant vegetation community with a total of approximately 98.1 acres and is the only vegetation community mapped in the project site. This community is often referred to as California annual grassland, is characterized by an herbaceous layer dominated by non-native grass species including wild oats (Avena spp.), bromes (*Bromus* spp.), and barleys (*Hordeum* spp.). The herbaceous layer is less than 3.9 feet in height and cover is open to continuous.

Disturbed / Developed. The remaining 3.4 acres of the project site consists of developed and disturbed/barren ground, primarily altered by human activity. These areas include maintained dirt/gravel roads and similar sites, Patterson Pass Road, the railroad, and portions of the PG&E Tesla substation. These lack the potential to support native species.

Non-Native Invasive / Noxious Weeds

Non-native invasive or noxious weeds are plants that can directly or indirectly cause problems for natural resources, wildlife, agriculture, recreation, navigation, public health, or the environment. The California Department of Food and Agriculture (CDFA) and the California Invasive Plant Council (Cal-IPC) have rated invasive or noxious weeds in California based on the threat these species pose to the natural landscape (Cal-IPC 2025).

The applicant identified several non-native invasive plant species within the project site during surveys conducted in 2023 and 2024. **Table 5.2-1** provides a list of the non-native invasive species documented by the applicant.

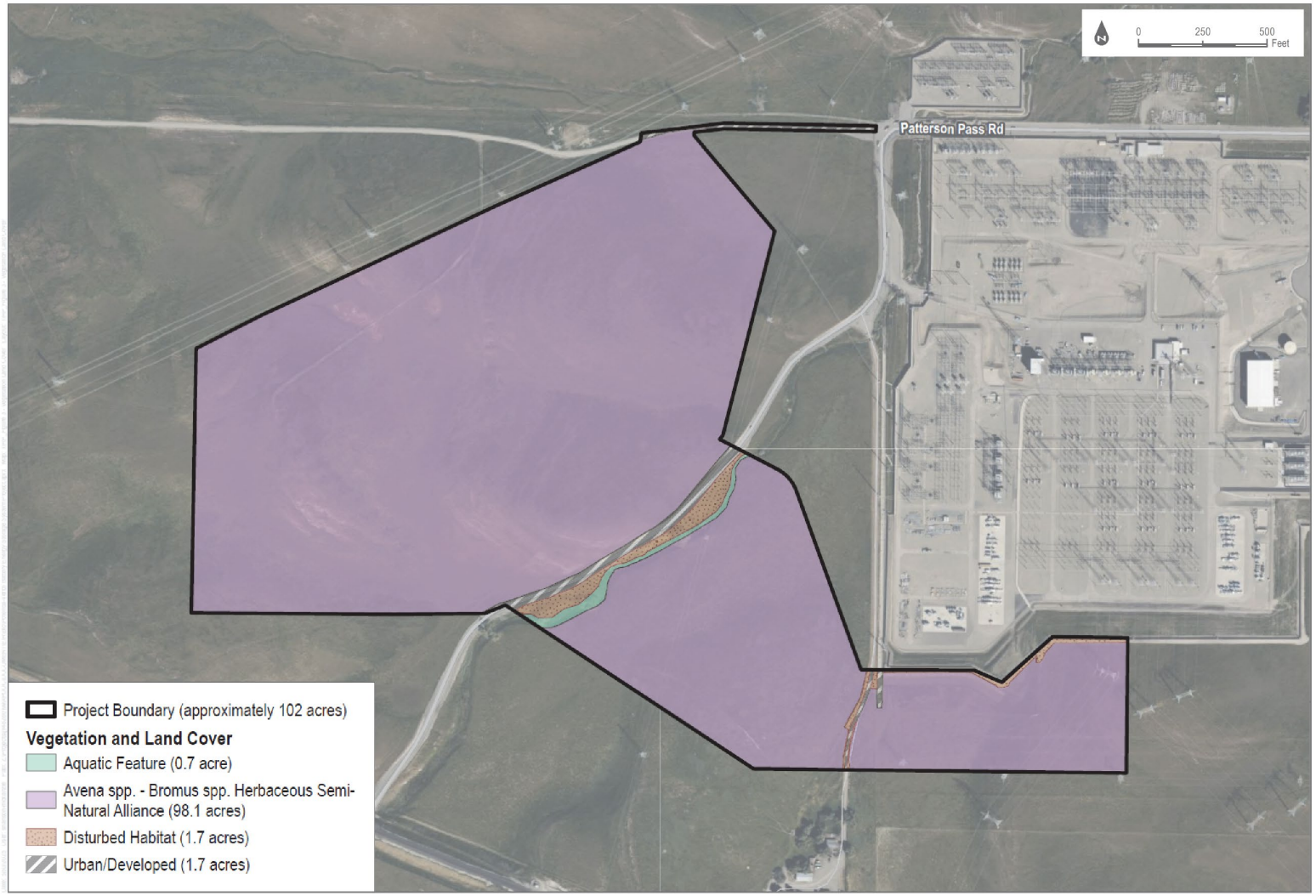


Figure 5.2-2
Vegetation and Land Cover

Sources: Dudek 2025kkk, Bing Maps 2023

TABLE 5.2-1 NON-NATIVE INVASIVE WEEDS IDENTIFIED IN THE PROJECT SITE

Common Name *Scientific Name*	Rating		Comments
	CDFA[1]	Cal-IPC[2]	
Italian thistle *Carduus pycnocephalus*	C*	Moderate	Winter annual forb native to the Mediterranean region. Widely distributed in disturbed open sites, roadsides, pastures, annual grasslands, and waste areas across California. It can facilitate fire spread and frequency by providing fuel in some habitats and creates monocultures that reduce native seedling recruitment and survival. It is a host species for the introduced weevil which also attacks native thistles.
Purple starthistle *Centaurea calcitrapa*	-*	Moderate	Grows as an annual, biennial or perennial in fields, roadsides, disturbed open sites, grasslands, overgrazed rangelands, and logged areas in the northern and central coast ranges of California. It is native to Europe. Highly competitive with other plants, often displacing desired vegetation.
Yellow starthistle *Centaurea solstitialis*	-*	High	Bushy winter annual from the Mediterranean region that has invaded over 12 million acres in California. Inhabits open hills, grasslands, open woodlands, fields, roadsides, and rangelands. It is considered one of the most serious rangeland weeds in the state.
Artichoke thistle; cardoon; wild artichoke *Cynara cardunculus*	-*	Moderate	Large perennial thistle from the Mediterranean region found below 500 m elevations throughout California, except in the Great Basin and Desert Regions. Prefers disturbed open sites, including grassland, chaparral, coastal scrub, and riparian areas. Closely related to cultivated artichokes, and the two species hybridize frequently.
Blessed milk thistle *Silybum marianum*	None	Limited	A winter annual or biennial with prickly leaves. Widely spread in California in overgrazed pastures and along fencelines and other disturbed areas. Produces tall, dense stands that outcompete native species.
Black mustard *Brassica nigra*	None	Moderate	A winter annual herb/forb. Like other mustards, black mustard grows profusely and produces allelopathic chemicals that prevent germination of native plants. The spread can increase the frequency of fires in chaparral and coastal sage scrub, changing these habitats to annual grassland.
Prickly Russian thistle *Salsola tragus*	C*	Limited	A large bushy summer annual. It can be found throughout California, including in agricultural areas, desert, roadsides and other disturbed areas. Russian-thistle can impede traffic, create fire hazards, and is a host of the beet leafhopper, an agricultural insect pest.
Redstem stork's bill *Erodium cicutarium*	None	Limited	An aggressive annual/biannual that is very widespread throughout California and is commonly found along roadsides, grasslands, fields, and semi-desert areas. It often carpets large areas, out competing native grasses and forbs.
Horehound *Marrubium vulgare*	None	Limited	A perennial shrub/forb/herb. This plant is found heavily populating disturbed places throughout California in grasslands, scrub, and riparian areas. It has mostly minor impact on native species.
Curly dock *Rumex crispus*	None	Limited	A perennial forb/herb found throughout California. It can grow in many habitats, including grassy places, waste ground, roadsides and nearby sand dunes but is primarily found in flood plains and in agricultural areas.

TABLE 5.2-1 NON-NATIVE INVASIVE WEEDS IDENTIFIED IN THE PROJECT SITE

Common Name *Scientific Name*	Rating		Comments
	CDFA[1]	Cal-IPC[2]	
Wild oats *Avena fatua*	None	Moderate	A winter annual grass that is a common agricultural weed. It grows in most grassland sites within California, particularly in sandy/poor soils, often on the road verges. It is one of the annual grasses that was introduced as a forage species and has replaced the native perennial grasses.
Ripgut brome *Bromus diandrus*	None	Moderate	An annual grass found throughout California and other western states. Ripgut brome becomes very dry and flammable during the dry season, increasing wildfire frequency which leads to conversion of shrubland and woodland to grassland.
Red brome *Bromus madritensis ssp. rubens*	None	High	A cool-season annual grass found throughout California, especially in the southern part of the state. Red brome invades disturbed areas, roadsides, agricultural fields, rangelands, and forestry sites, in addition to native communities. Increases fire frequency and converts habitat to annual grassland.
Perennial rye grass *Festuca perennis*	None	Moderate	An annual or biennial grass found throughout California except in the Great Basin and deserts. Introduced to many areas for erosion control, pasture forage, and turf. In California and numerous other regions, it has expanded beyond roadsides, fields, orchards, and vineyards where it has been planted and become invasive, outcompeting native vegetation, especially in grasslands with fertile and/or clay soils.
Mouse barley *Hordeum murinum*	None	Moderate	An annual grass that is native to the Mediterranean. It is common throughout California in disturbed areas and can persist even with frequent mowing by growing nearly flat. It can outcompete native perennials by growing into bare areas and prohibiting their establishment, is salt tolerant, and may increase fire risk by adding fine fuels.
Annual rabbitsfoot grass *Polypogon monspeliensis*	None	Limited	A winter or summer annual grass. Widely distributed across California and typically restricted to moist areas where it can form dense stands and outcompete native vegetation.

[1] CDFA Ratings:
A = A pest of known economic or environmental detriment and is either not known to be established in California or it is present in a limited distribution that allows for the possibility of eradication or successful containment.
B = A pest of known economic or environmental detriment and, if present in California, it is of limited distribution.
C = A pest of known economic or environmental detriment, if present in California, it is usually widespread.
D = An organism known to be of little or no economic or environmental detriment, to have an extremely low likelihood of weediness, or is known to be a parasite or predator.
Q = An organism or disorder suspected to be of economic or environmental detriment, but whose status is uncertain

[2] Cal-IPC Ratings:
High = These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.
Moderate = These species have substantial and apparent, but generally not severe, ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.
Limited = These species are invasive, but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

TABLE 5.2-1 NON-NATIVE INVASIVE WEEDS IDENTIFIED IN THE PROJECT SITE			
Common Name *Scientific Name*	**Rating**		**Comments**
	CDFA[1]	**Cal-IPC[2]**	
because of incomplete identification or inadequate information. * = An asterisk next to the rating indicates that a plant is included in the CCR Section 4500 list of California State Noxious Weeds.			Alert = An Alert is listed on species with High or Moderate impacts that have limited distribution in California, but may have the potential to spread much farther. Watch = These species have been assessed as posing a high risk of becoming invasive in the future in California.

Aquatic Resources

The applicant conducted a preliminary wetland assessment during reconnaissance surveys on August 2, 2023. A formal jurisdictional delineation, following both federal and state protocols and guidelines, was completed on January 18, 2024. The applicant visited wetlands to determine their seasonal status and hydroperiod concurrently with additional surveys conducted in March, May, and August 2023 and February 2024 (Dudek 2024).

Patterson Run is an ephemeral stream system that runs parallel to Patterson Pass Road within the project site. This channel flows in a northerly direction and eventually terminates approximately 2.3 miles northeast in agricultural land north of the Delta-Mendota Canal. This feature is depicted in **Figure 5.2-3** below (Dudek 2025lll). Patterson Run is classified in the NWI as a freshwater emergent wetland. A second drainage shown on the National Hydrography Dataset is classified by the NWI as freshwater emergent wetland. However, there was no physical evidence of this second drainage within the project site during aerial imagery review or field surveys conducted by the applicant. Patterson Run had moderate flow during the March 2023 and February 2024 surveys but was dry during the May and August 2023 surveys. One swale-like area was surveyed along the proposed gen-tie alignment at the southwest corner of the PG&E substation. This feature exhibited cracked clay and sandy wash-type soils during the August 2023 survey, with patchy grassland habitat along the margins and herbaceous plants such as dove weed (*Croton setiger*), curly dock (*Rumex crispus*), and big tarplant (*Blepharizonia plumosa*). However, the applicant's survey determined that this feature did not contain hydric soils, vegetation, or hydrology and therefore is not considered a jurisdictional aquatic resource.

Patterson Run is considered waters of the United States and waters of the state and would be subject to federal regulations under Clean Water Act Sections 401 and 404 and to state regulation under the Porter-Cologne Water Quality Control Act. In addition, project impacts to Patterson Run would typically require a notification to the California Department of Fish and Wildlife (CDFW) pursuant to California Fish and Game Code section 1602 et seq., therefore these impacts would be subject to the California Energy Commission's (CEC's) in-lieu permitting authority.

The project is within the jurisdiction of the Central Valley Region of the Regional Water Quality Control Board (RWQCB) (Region 5) and the United States Army Corps of Engineers (USACE) San Francisco District.

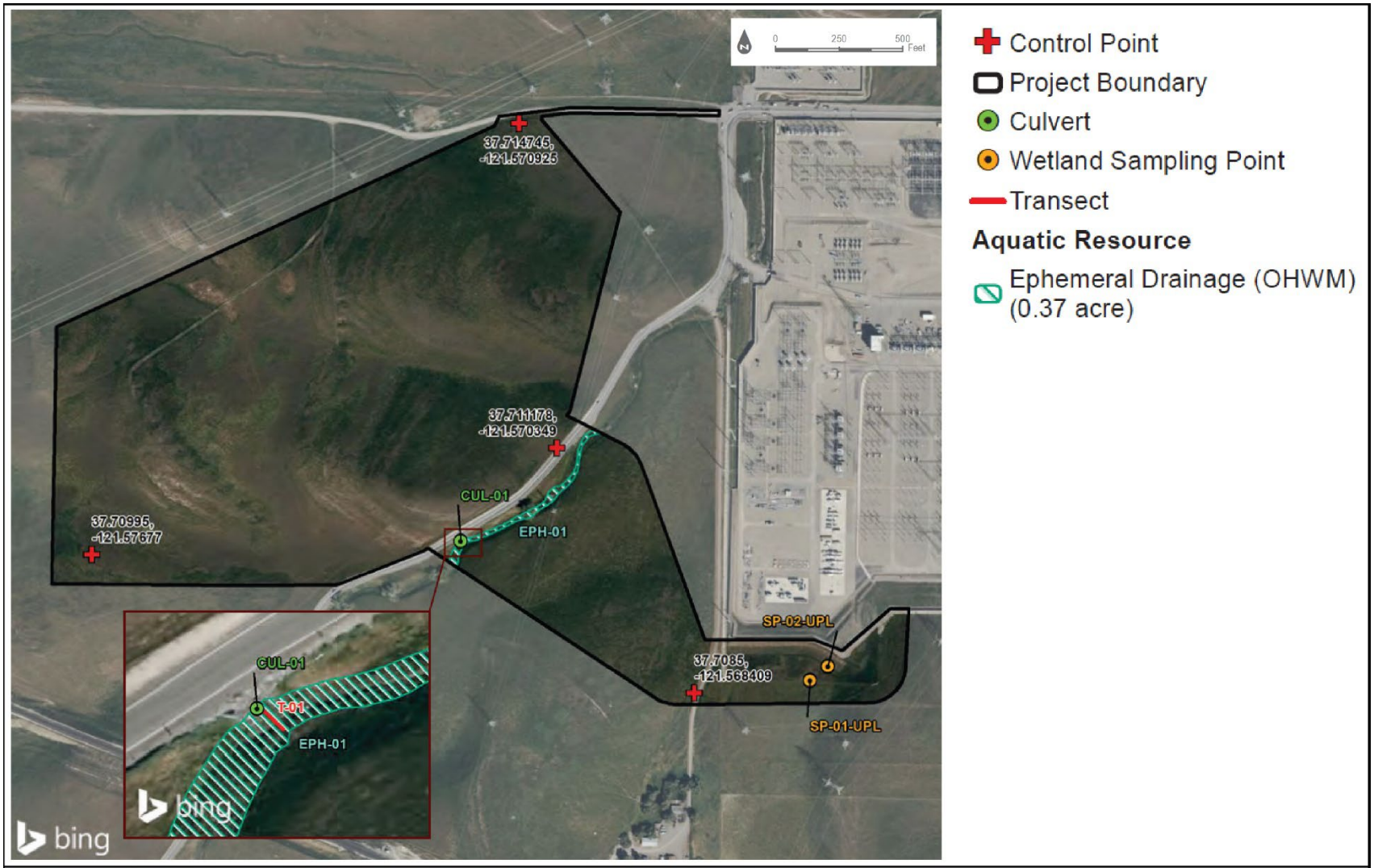


Figure Figure 5.2-3
Aquatic Resources Delineation

Sources: Dudek 2025lll, Bing Maps (accessed 2024), Open Streets Map 2019

Critical Habitat and Special Habitat Designations

The federal Endangered Species Act (ESA) defines critical habitat as specific geographic areas that contain features essential to the conservation of an endangered or threatened species that may require special management and protection. Critical habitat may also include areas that are not currently occupied by the species but will be needed for its recovery. The USFWS and National Marine Fisheries Service (NMFS) publish proposals to designate critical habitat in the Federal Register, a daily publication of the federal government.

The project site overlaps with designated critical habitat for the California red-legged frog (*Rana draytonii*), which extends into northern and southwestern adjacent areas characterized by undeveloped and agricultural land uses. The USFWS identifies four Primary Constituent Elements (PCEs) essential for the species' life history. Specifically, PCEs 3 (upland habitat) and 4 (dispersal habitat) are located within the project site. PCEs 1 (aquatic breeding habitat) and 2 (aquatic non-breeding habitat) are found within a 1-mile dispersal radius of the project site.

Wildlife Corridors, Special Linkages, and Important Bird Areas

Movement and dispersal corridors that connect large blocks of habitat are essential to the long-term viability of plant and wildlife populations. The California Essential Habitat Connectivity Project (Connectivity Project) was commissioned by the California Department of Transportation (Caltrans) and CDFW to create a statewide assessment of essential habitat connectivity to be used for conservation and infrastructure planning (Spencer et al., 2010). One of its goals was to create the Essential Connectivity Map, which depicts large, relatively natural habitat blocks that support native biodiversity (Natural Landscape Blocks) and areas essential for ecological connectivity between them (Essential Connectivity Areas). These maps do not reflect the needs of particular species but are based on overall biological connectivity and ecological integrity.

The project site does not overlap with any California Essential Connectivity Areas but is considered part of the large contiguous Natural Landscape Block that extends from Alameda County south through the Diablo Range and Southern Coastal Ranges, terminating north of the Transverse Ranges (CDFW 2025b). The project site consists of primarily annual grasslands, which can provide opportunities for undisturbed localized wildlife movement. Regional connectivity is highly limited by Patterson Pass Road, I-580 and I-5 to the north and east, and the railroad south of the project site.

The East Alameda County Conservation Strategy (EACCS) indicates this area likely supports connectivity through the Altamont Hills for San Joaquin kit fox (*Vulpes macrotis mutica*) but connectivity across I-580 has been compromised by infrastructure development (EACCS 2010).

Important Bird Areas. The Audubon Society has identified Important Bird Areas (IBAs) throughout the western hemisphere that provide essential habitat for birds (Audubon 2025). Although IBAs are non-regulatory designations, they provide

important contextual information in determining the types of birds that are occurring in regions within and around the IBA along with the way in which habitats within those regions are being utilized by avian species. These IBAs include sites for breeding, wintering, and migrating birds and can range from only a few acres to thousands of acres in size.

The Mount Hamilton IBA encompasses the eastern slopes of the Coast Range separating the east San Francisco Bay Area and the Central Valley. According to the Audubon Society, the patches of grassland within the IBA near Livermore and the eastern base, still support breeding populations of Northern harrier (*Circus hudsonius*), white-tailed kite (*Elanus luecurus*), burrowing owl (*Athene cunicularia*), loggerhead shrike (*Lanius ludovicianus*), grasshopper sparrow (*Ammodramus savannarum*), tricolored blackbird (*Agelaius tricolor*) and in winter, good numbers of ferruginous hawk (*Buteo regalis*). About 20 pair of prairie falcon (*Falco mexicanus*) are believed to breed in the Diablo Range, mainly in the east, and a pair of bald eagles (*Haliaeetus leucocephalus*) breeds at Del Valle Reservoir just west of Mines Road in Alameda County approximately 10-miles south of the project site (APWRA 2014).

Protected Areas. To identify sensitive biological resources, a review of the California Protected Areas Database (CPAD) and the California Conservation Easement Database (CCED) was conducted. CPAD is a database comprising lands, ranging from national parks to small urban open spaces, owned and protected by more than 1,000 agencies and non-profits for conservation purposes (CPAD 2025). This review confirmed the presence of several protected areas or conservation easements within a 5-mile radius of the project site (CCED 2025). Descriptions of those areas within a 10-mile radius of the project site are provided below and are depicted in Figure 11 located in Appendix A of the Biological Resources Assessment Report (Dudek 2025ppq):

- Mendoza Ranch: The nearest protected area is the Contra Costa Water District's Mendoza Ranch (Unit ID 49792), located approximately 1-mile northwest of the project site.
- Haera Mitigation Bank: The nearest mapped conservation easement is the Wildlife Heritage Foundation Haera Mitigation Bank (CCED ID 2073), located adjacent to and north of the project site.
- Two Sisters Conservation Area: The second nearest conservation easement is the Two Sisters Conservation Area (CCED ID 12132) directly south of the project site.
- Data Basin – East Bay Botanical Priority Protection Areas: The project site is located within the East Bay Chapter Area, an area recognized for its unique ecological conditions and significant native plant populations. Due to pressures from economic growth, the East Bay Chapter of the California Native Plant Society (CNPS) developed the Botanical Priority Protection Areas Project (BPPA) to identify and protect key botanical areas through intra-chapter collaboration. The project site is specifically included within the East Bay Botanical Priority Protection Area S (Data Basin 2025).

Sensitive Biological Resources

This section provides an overview of sensitive biological resources associated with the project site. It also provides methods utilized to determine the sensitive vegetation communities and special-status plants and wildlife species observed within or near the project site or with the potential to be present. The specific habitat requirements and the locations of known occurrences of each special-status species were the principal criteria used for inclusion in the lists of special-status species potentially occurring within or near the project site.

Literature Review. As part of developing the baseline conditions for biological resources within the project area, the applicant performed a comprehensive literature and database search. The focus of the review was to identify biological resources that could potentially occur within the project site and a 10-mile buffer. Sources utilized during this review included species records from wildlife studies completed at or near the project site, published literature, databases, coordination with CDFW and USFWS, and the professional judgement of biologists representing the applicant.

In addition to the applicants' review described above, CEC staff conducted an independent and thorough literature review that included an evaluation of applicant reports and documents, coordination with the applicable resources agencies, and an updated database assessment. The following list includes the resources considered in the review conducted by both the applicant and staff:

- 2024 Biological Technical Report for the Potentia-Viridi Battery Energy Storage System Project (Dudek 2024)
- Summary of Golden Eagle Surveys on Contra Costa Water District Lands, California (USGS 2023).
- Golden Eagle Population Surveys in the Vicinity of the Altamont Pass Wind Resource Area, California, Wiens and Kolar 2014-21 (USGS 2021).
- East Alameda County Conservation Strategy, October 2010 (EACCS 2010)
- USFWS Information for Planning and Conservation (IPaC) Program (USFWS 2025e)
- CDFW California Natural Diversity Database, Rarefind Version 5 (CDFW 2025a)
- California Native Plant Society Inventory of Rare and Endangered Plants of California (CNPS 2025b)
- California Wildlife Habitat Relationships Maps and Data (Data Basin 2025)
- Calflora Information on California plants web application (Calflora 2025)
- Soil Survey Geographic Database for California (USDA 2025)
- Manual of California Vegetation Online (Sawyer et al. 2009)
- CDFW Vegetation Maps and Data (CDFW 2025d)
- California Natural Community List (BIOS 2025t)

- CDFW Special Animals List, July 2025 (CDFW 2025c)
- eBird citizen-based observation network (eBird 2025)
- iNaturalist citizen-based observations (iNaturalist 2025)

The California Natural Diversity Database (CNDDB) and CNPS databases were queried for nine U.S. Geological Survey (USGS) 7.5-minute quadrangles containing and immediately surrounding the site (Byron Hot Springs, Clifton Court Forebay, Union Island, Altamont, Midway, Tracy, Mendenhall Springs, Cedar Mountain and Lone Tree Creek) (Dudek 2024). CEC staff also conducted a preliminary site assessment using recent aerial imagery accessed via Google Earth (Google Earth 2024) to identify potential sensitive biological resources prior to conducting a field visit on December 4, 2024.

The applicant conducted a series of focused and protocol-level surveys for the proposed project. Each of these studies are referenced below and were included in the staff literature review. Survey information provided by the applicant was also considered by staff during the analysis of potential impacts to biological resources (Dudek 2024; Dudek 2025uu; Stantec 2025a; Stantec 2025b).

Reconnaissance Surveys. The applicant conducted a series of reconnaissance-level surveys for the battery energy storage system and gen-tie alignment to characterize existing conditions and assess potential impacts from development of the project. The initial survey, conducted on March 31, 2023, included both windshield and pedestrian surveys by qualified biologists. The surveyors identified existing vegetation communities and assessed the project site and vicinity for potential suitable habitat for special-status plant and wildlife species.

Follow-up pedestrian surveys were conducted by the applicant on August 2, 2023, and January 18, 2024. These surveys were conducted concurrently with focused surveys for rare plants and wildlife burrows and encompassed the project boundaries to document vegetation communities. A wetland assessment was also completed to determine if any potential jurisdictional waters were present on the site that would require further protocol jurisdictional delineations.

Sensitive Natural Communities

Sensitive natural communities have been previously defined by CDFW as "communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects". CDFW uses the NatureServe conservation status ranking system to assess the rarity and vulnerability of natural communities (NatureServe 2025). Ranks range from S1 to S5, where "S" stands for State-level status. More recently, CDFW has stated that sensitive natural communities with state ranks of S1 (Critically Imperiled), S2 (Imperiled), or S3 (Vulnerable) should be addressed in the environmental review process of CEQA and its equivalents (CDFW 2025e). Additionally, vegetation associations that do not have a state ranking are considered sensitive by CDFW.

The project site is primarily characterized as annual grasslands. No vegetation communities with state rank S1 through S3 or otherwise designated as high priority or potentially rare in the current list, are present on or adjacent to the project site. There is one sensitive community: Valley Sink Scrub (S1.1) documented in the CNDDB as occurring within 2.5 miles of the project site. No sensitive natural communities were identified within or near the project site by the applicant. This finding was confirmed by CEC staff during a site visit on December 4, 2024.

Special-Status Plants

For the purposes of this staff assessment, special-status plants include:

- Listed, proposed for listing, or candidates for listing as threatened or endangered species (including designated or proposed critical habitat) under the federal ESA
- Listed, or candidates for listing as threatened or endangered under the California Endangered Species Act (CESA)
- Plants assigned a California Rare Plant Rank (CRPR) by the California Native Plant Society (CNPS), including CRPR 1A, 1B, 2, 3, and 4[1]
- Plants listed as rare under the California Native Plant Protection Act
- Plants that meet the definition of rare or endangered under the California Environmental Quality Act (CEQA) section 15380 (b) and (d)

Rare Plant Survey and Vegetation Mapping. The applicant conducted protocol-level rare plant surveys on May 16 and August 2, 2023, and January 18, April 12, and June 17, 2024, to identify special-status rare plant species within the project site boundaries. The biologists surveyed the entire project site on foot in approximately 20-meter parallel transects to ensure comprehensive visual coverage. Rare plant surveys were conducted in accordance with the Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants (USFWS 2000), the Protocol for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Sensitive Natural Communities (CDFW 2018), and the CNPS Botanical Survey Guidelines (CNPS 2001). Rare plant occurrences were mapped using ArcGIS Field Maps (ESRI).

Survey Results and Potential to Occur. Several special-status plant species have been recorded within a 10-mile radius or within the nine quadrangles surrounding the project site during the literature review (Dudek 2024; **Table 5.2-2**). However, most of these species were considered not likely to occur based on a lack of suitable habitat within or adjacent to the project site, the project site occurring outside of the known

1 CRPR 3 or 4 species may or may not be considered under CEQA. If a CRPR 3 or 4 species is locally rare, or the population is at an extreme end of the species range, it would be considered for impacts under CEQA.

geographic or elevation ranges, and/or an absence of known occurrences within 10 miles of the project site.

Several special-status plants were determined to have a moderate or high potential to occur. However, only one species, big tarplant (*Blepharizonia plumosa*) was observed during focused rare plant surveys (Dudek 2024). No other special status plants were observed during the 2023 or 2024 surveys. All surveys were conducted during the appropriate blooming period when target special-status plant species would be detectable. See **Figure 5.2-4** for locations of big tarplant detected during surveys.

Numerous additional special-status plant species that typically inhabit valley and foothill grasslands, often in alkaline or clay soils were determined to have at least some potential to occur within the project site (see **Table 5.2-2**). Three of these species are currently listed or proposed for listing under ESA or CESA: large-flowered fiddleneck (*Amsinckia grandiflora*), Palmate-bracted bird's-beak (*Chloropyron palmatum*), and Livermore tarplant (*Deinandra bacigalupii*). Several species identified during the literature review were determined to have no potential to occur based on the project site being located outside of known geographic or elevation ranges for these species, a lack of suitable habitat, the absence of recent records or documentation, coordination with the applicable resource agencies, and/or staff's professional judgement. Please refer to **Table 5.2-2** for a complete list of these species and the potential to occur within the project area. Plant species with no potential to occur are not discussed further in this document.

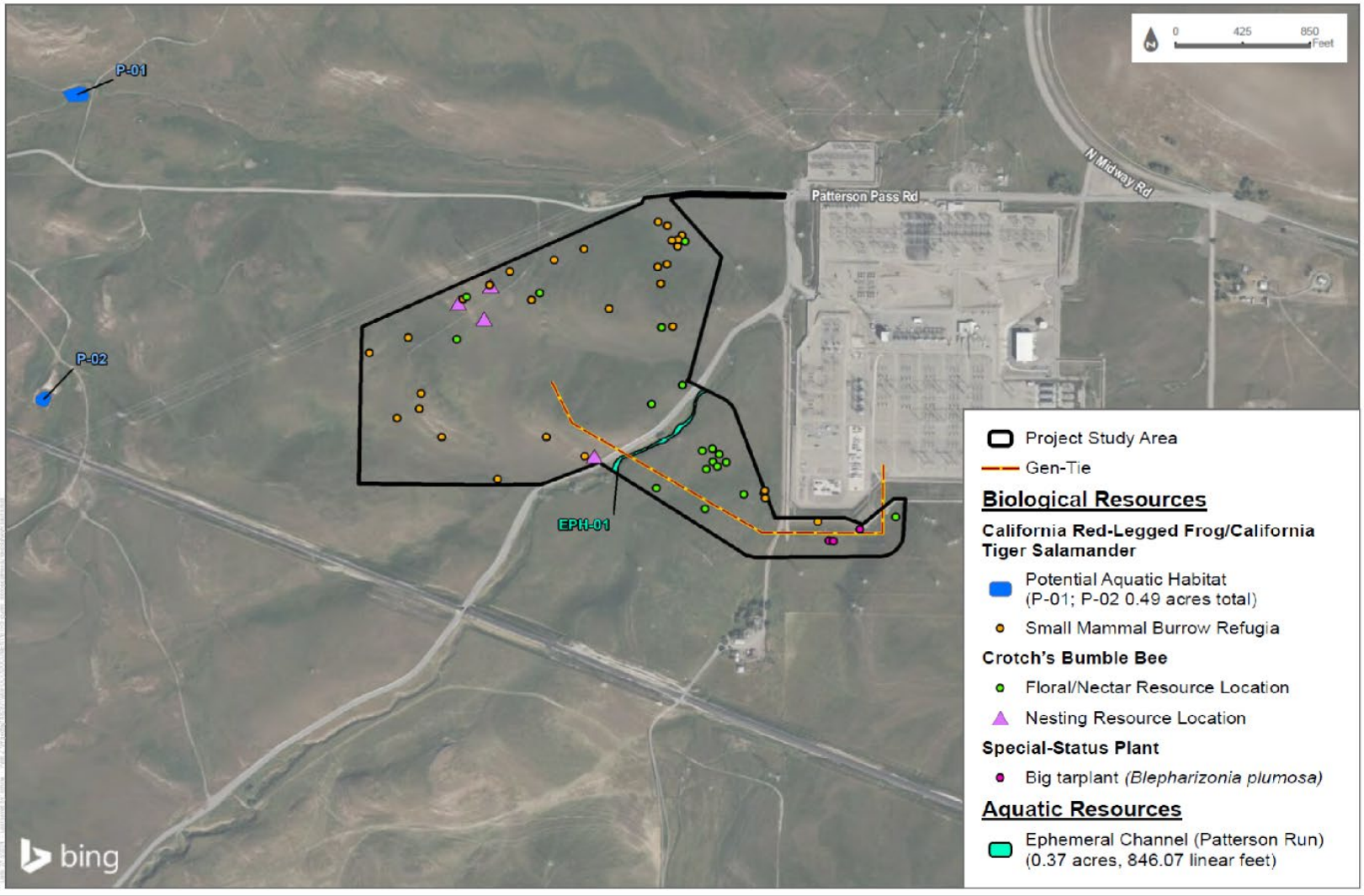


Figure 5.2-4
Biological Resources Survey Results

Sources: Dudek 2025lll, Bing Maps 2022, Open Street Map 2019, USGS 2022

TABLE 5.2-2 KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL-STATUS PLANTS WITHIN THE PROJECT AREA

Common Name *Scientific Name*	**Status[1]**	**Range, Habitat, and Blooming Period**	**Potential to Occur[2] and Comments**
Sharsmith's onion (*Allium sharsmithiae*)	CNPS: 1B.3 Global Rank: G2 State Rank: S2	Known from the Mount Hamilton Range in chaparral and cismontane woodland on rocky serpentine, growing at elevations from 1310-3935 feet. Blooming period is from May-March.	**Not Likely to Occur.** Project site is outside of the known elevation range. Not observed during focused plant surveys. Nearest known occurrence is approximately 9 miles south of the project site.
Large-flowered fiddleneck (*Amsinckia grandiflora*)	Federal List: FE State List: SE CNPS: 1B.1 Global Rank: G1 State Rank: S1	Occurs within Cismontane woodland, and Valley and foothill grassland, growing at elevations from 885-1805 feet. Blooming period is March-May.	**Not Likely to Occur.** Project site is outside of the known elevation range. Not observed during focused plant surveys. Nearest known occurrence is approximately 4 miles south of the project site.
Contra Costa manzanita (*Arctostaphylos manzanita* ssp. *laevigata*)	CNPS:1B.2 Global Rank: G5T2 State Rank: S2	Occurs in central California, primarily in the North Coast, the North Coast Range and SF Bay regions. It tends to grow in slopes and rocky places, at elevations from 0-4900 feet.	**Not Likely to Occur.** Project site is outside of the known elevation range. Not observed during focused plant surveys. Nearest known occurrence is approximately 12 miles northwest of the project site.
Alkali milk-vetch (*Astragalus tener* var. *tener*)	CNPS: 1B.2 Global Rank: G2T1 State Rank: S1	Occurs within Playas, Valley and foothill grassland (adobe clay), and Vernal pools, growing at elevations from 5-195 feet. Blooming period is March-June.	**Moderate.** Suitable valley and foothill grassland with clay soils are present. Not observed during focused plant surveys. Nearest known occurrence is approximately 6 miles west of the project site. Species not observed during rare plant surveys.
Heartscale (*Atriplex cordulata* var. *cordulata*)	CNPS: 1B.2 Global Rank: G3T2 State Rank: S2	Occurs within Chenopod scrub, Meadows and seeps, and Valley and foothill grassland (sandy), growing at elevations from 0-785 feet. Blooming period is April-October.	**Low.** Valley and foothill grassland are present but generally lacks sandy soils. Not observed during focused plant surveys. Nearest known occurrence is approximately 6 miles northwest of the project site. Species not observed during rare plant surveys.
Brittlescale (*Atriplex depressa*)	CNPS: 1B.2 Global Rank: G2 State Rank: S2	Occurs within Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland, and Vernal pools, growing at elevations from 5-1050 feet. Blooming period is April-October.	**Moderate.** Suitable valley and foothill grassland with clay soils are present. Not observed during focused plant surveys. Nearest known occurrence is approximately 4 miles northwest of the project site. Species not observed during rare plant surveys.

TABLE 5.2-2 KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL-STATUS PLANTS WITHIN THE PROJECT AREA

Common Name *Scientific Name*	**Status[1]**	**Range, Habitat, and Blooming Period**	**Potential to Occur[2] and Comments**
Lesser saltscale (*Atriplex minuscula*)	CNPS: 1B.2 Global Rank: G2 State Rank: S2	Occurs within Chenopod scrub, playas, and valley and foothill grassland, growing at elevations from 50-160 feet. Blooming period is May-October.	**Low.** Valley and foothill grassland are present but generally lacks sandy soils. Not observed during focused plant surveys. Nearest known occurrence is approximately 5 miles west of the project site. Species not observed during focused plant surveys.
Big-scale balsamroot (*Balsamorhiza macrolepis*)	CNPS: 1B.2 Global Rank: G2 State Rank: S2	Occurs within Chaparral, Cismontane woodland, and Valley and foothill grassland, growing at elevations from 150-5100 feet. Blooming period is March-June.	**Low.** Valley and foothill grassland are present. Not observed during focused plant surveys. Nearest known occurrence is approximately 6 miles away. Species not observed during rare plant surveys.
Big tarplant (*Blepharizonia plumosa*)	CNPS: 1B.1 Global Rank: G4 State Rank: S1S2	Occurs within Valley and foothill grassland, growing at elevations from 100-1655 feet. Blooming period is July- October.	**Present.** Three individuals were found during the August 2023 plant surveys near the southwest corner of the PG&E substation.
Mt. Diablo fairy-lantern (*Calochortus pulchellus*)	CNPS: 1B.1 Global Rank: G2 State Rank: S2	Occurs within Chaparral, Cismontane woodland, riparian woodland, and Valley and foothill grassland, growing at elevations from 100-2755 feet. Blooming period is April-June.	**Not likely to Occur.** Suitable valley and foothill grasslands are present; however, project site lacks wooded and brushy slope microhabitat. Not observed during focused plant surveys. Nearest known occurrence is approximately 9 miles away.
Lemmon's jewelflower (*Caulanthus lemmonii*)	CNPS: 1B.2 Global Rank: G3T2 State Rank: S3	Occurs within Pinyon and juniper woodland, and Valley and foothill grassland, growing at elevations from 260-5185 feet. Blooming period is February-May.	**Moderate.** Suitable valley and foothill grasslands are present. Not observed during focused plant surveys. Nearest known occurrence is approximately 3.6 miles away.
Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*)	CNPS: 1B.1 Global Rank: G3T2 State Rank: S2	Occurs within Valley and foothill grassland, growing at elevations from 0-755 feet. Blooming period is April-November.	**Moderate.** Suitable valley and foothill grasslands with clay soils are present. Not observed during focused plant surveys. Nearest known occurrence is approximately 5 miles away.
Dwarf soaproot (*Chlorogalum pomeridianum* var. *minus*)	CNPS: 1B.2 Global Rank: G5T3 State Rank: S3	Occurs within Chaparral, growing at elevations from 1000- 3280 feet. Blooming period is May- August.	**Not Likely to Occur.** Project site is outside of the known elevation range.
Hispid salty bird's-beak (*Chloropyron molle* ssp. *hispidum*)	CNPS: 1B.1 Global Rank: G2T1 State Rank: S1	Occurs within Meadows and seeps, Playas, and Valley and foothill grassland, growing at elevations from 5-510 feet. Blooming period is June- September.	**Not Likely to Occur.** The project site lacks damp alkaline soils. Not observed during focused plant surveys. Nearest known occurrence is approximately 8 miles away.

TABLE 5.2-2 KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL-STATUS PLANTS WITHIN THE PROJECT AREA

Common Name *Scientific Name*	**Status[1]**	**Range, Habitat, and Blooming Period**	**Potential to Occur[2] and Comments**
Palmate-bracted bird's-beak (*Chloropyron palmatum*)	Federal List: FE State List: SE CNPS:1B.1 Global Rank: G1 State Rank: S1	Occurs within Chenopod scrub, and Valley and foothill grassland, growing at elevations from 15-510 feet. Blooming period is May-October.	**Low.** Suitable valley and foothill grasslands are present; however, Pescadero soils are a minor component. Not observed during focused plant surveys. Nearest known occurrence is approximately 8 miles away.
Mt. Hamilton thistle (*Cirsium fontinales* var. *campylon*)	CNPS: 1B.2 Global Rank: G2T2 State Rank: S2	Occurs within Chaparral, Cismontane woodland, and Valley and foothill grassland, growing at elevations from 330-2920 feet. Blooming period is April-October.	**Not Likely to Occur.** No serpentine soils are present within the project site. Nearest known occurrence is approximately 11 miles away.
Livermore tarplant (*Deinandra bacigalupii*)	State List: SE CNPS: 1B.1 Global Rank: G1 State Rank: S1	Occurs within Meadows and seeps, growing at elevations from 490-605 feet. Blooming period is from June-October.	**Not Likely to Occur**. The project site lacks suitable meadow seep habitats. Not observed during focused plant surveys. Nearest known occurrence is approximately 7.8 miles away
Hospital Canyon larkspur (*Delphinium californicum* ssp. *interius*)	CNPS: 1B.2 Global Rank: G3T3 State Rank: S3	Occurs within Chaparral (openings), Cismontane woodland (mesic), and Coastal scrub, growing at elevations from 640-3595 feet. Blooming period is April-June.	**Not Likely to Occur.** Suitable chaparral, cismontane woodland, great basin scrub, Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland does not occur within the project site. Outside of the known elevation range of this species. Nearest known occurrence is approximately 5.4 miles away.
Recurved larkspur (*Delphinium recurvatum*)	CNPS: 1B.2 Global Rank: G2 State Rank: S2	Occurs within Chenopod scrub, Cismontane woodland, and Valley and foothill grassland, growing at elevations from 10-2590 feet. Blooming period is March-June.	**Moderate.** Suitable valley and foothill grasslands with alkaline soils are present. Not observed during focused plant surveys. Nearest known occurrence is approximately 6 miles away.
Spiny-sepaled button-celery (*Eryngium spinosepalum*)	CNPS: 1B.2 Global Rank: G2 State Rank: S2	Occurs within Valley and foothill grassland, and Vernal pools, growing at elevations from 260-3200 feet. Blooming period is from April-June.	**Moderate.** Suitable valley and foothill grasslands are present. Not observed during focused plant surveys. Nearest known occurrence is approximately 7.5 miles away.
Diamond-petaled California poppy (*Eschscholzia rhombipetala*)	CNPS: 1B.1 Global Rank: G1 State Rank: S1	Occurs within Valley and foothill grassland (alkaline, and clay), growing at elevations from 0-3200 feet. Blooming period is March-April.	**Moderate.** Suitable valley and foothill grasslands with alkaline clay soils are present. Not observed during focused plant surveys. Nearest known occurrence is approximately 3.6 miles away.

TABLE 5.2-2 KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL-STATUS PLANTS WITHIN THE PROJECT AREA

Common Name *Scientific Name*	**Status[1]**	**Range, Habitat, and Blooming Period**	**Potential to Occur[2] and Comments**
San Joaquin spearscale (*Extriplex joaquinana*)	CNPS: 1B.2 Global Rank: G2 State Rank: S2	Occurs within Chenopod scrub, Meadows and seeps, Playas, and Valley and foothill grassland, growing at elevations from 5-2740 feet. Blooming period is April-October.	**Moderate.** Suitable valley and foothill grasslands with alkaline clay soils present. Not observed during focused plant surveys. Nearest known occurrence is approximately 3.6 miles away.
Talus fritillary (*Fritillaria falcata*)	CNPS: 1B.2 Global Rank: G2 State Rank: S2	Occurs within Chaparral, Cismontane woodland, and Lower montane coniferous forest, growing at elevations from 985-5005 feet. Blooming period is from March-May.	**Not Likely to Occur.** Project site is outside of the known elevation range.
Diablo helianthella (*Helianthella castanea*)	CNPS: 1B.2 Global Rank: G2 State Rank: S2	Occurs within Broadleafed upland forest, Chaparral, Cismontane woodland, Coastal scrub, riparian woodland, and Valley and foothill grassland, growing at elevations from 195-4265 feet. Blooming period is March-June.	**Not Likely to Occur.** Valley and foothill grassland is present; however, no suitable forest, woodland, or chaparral habitats are present. Not observed during focused plant surveys. Nearest known occurrence is approximately 10 miles away.
Brewer's western flax (*Hesperolinon breweri*)	CNPS: 1B.2 Global Rank: G2 State Rank: S2	Occurs within Chaparral, Cismontane woodland, and Valley and foothill grassland, growing at elevations from 100-3100 feet. Blooming period is May-July.	**Not Likely to Occur.** Valley and foothill grassland is present; however, no suitable woodland or chaparral habitats and no serpentine soils are present. Not observed during focused plant surveys. Nearest known occurrence is approximately 5 miles away.
Woolly rose-mallow (*Hibiscus lasiocarpos* var. *occidentalis*)	CNPS:1B.2 Global Rank: G5T3 State Rank: S3	Occurs within Marshes and swamps, growing at elevations from 0-395 feet. Blooming period is from June-September.	**Not Likely to Occur.** No suitable freshwater marshes or swamp habitat are present. Not observed during focused plant surveys. Nearest known occurrence is approximately 7 miles away.
Loma Prieta hoita (*Hoita strobilina*)	CNPS: 1B.1 Global Rank: G2 State Rank: S2	Occurs within Chaparral, Cismontane woodland, and riparian woodland, growing at elevations from 100-2820 feet. Blooming period is from May-August or October.	**Not Likely to Occur.** No suitable chaparral or woodland habitats and no serpentine soils are present. Not observed during focused plant surveys. Nearest known occurrence is approximately 10 miles away.
Legenere (*Legenere limosa*)	CNPS: 1B.1 Global Rank: G2 State Rank: S2	Occurs within Vernal pools, growing at elevations from 5-2885 feet. Blooming period is from April-June.	**Not Likely to Occur.** No vernal pools are present within the project site. Nearest known occurrence is approximately 14 miles away.

TABLE 5.2-2 KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL-STATUS PLANTS WITHIN THE PROJECT AREA

Common Name *Scientific Name*	**Status[1]**	**Range, Habitat, and Blooming Period**	**Potential to Occur[2] and Comments**
Mt. Hamilton coreopsis (*Leptosyne hamiltonii*)	CNPS: 1B.2 Global Rank: G2 State Rank: S2	Occurs within Cismontane woodland, growing at elevations from 1805-4265 feet. Blooming period is from March-May.	**Not Likely to Occur.** Project site is outside of the known elevation range.
Mason's lilaeopsis (*Lilaeopsis masonii*)	CNPS: 1B.1 Global Rank: G2 State Rank: S2	Occurs within Marshes and swamps (brackish, freshwater), and riparian scrub, growing at elevations from 0-35 feet. Blooming period is from April-November.	**Not Likely to Occur.** Project site is outside of the known elevation range.
Delta mudwort (*Limosella australis*)	CNPS: 2B.1 Global Rank: G5 State Rank: S2	Occurs within Marshes and swamps (brackish, freshwater), and riparian scrub, growing at elevations from 0-10 feet. Blooming period is from May-August.	**Not Likely to Occur.** Project site is outside of the known elevation range.
Showy golden madia (*Madia radiata*)	CNPS: 1B.1 Global Rank: G3 State Rank: S3	Occurs within Cismontane woodland, and Valley and foothill grassland, growing at elevations from 80-3985 feet. Blooming period is from March-May.	**Moderate.** Suitable valley and foothill grasslands with clay soils are present. Not observed during focused plant surveys. Nearest known occurrence is approximately 5.7 miles away.
Hall's bush-mallow (*Malacothamnus hallii*)	CNPS: 1B.2 Global Rank: G2 State Rank: S2	Occurs within Chaparral, and Coastal scrub, growing at elevations from 35-2495 feet. Blooming period is from April-October.	**Not Likely to Occur.** No suitable chaparral or coastal scrub habitats are present. Not observed during focused plant surveys. Nearest known occurrence is approximately 16 miles away.
Shining navarretia (*Navarretia nigelliformis ssp. radians*)	CNPS: 1B.2 Global Rank: G4T2T3 State Rank: S2S3	Occurs within Cismontane woodland, Valley and foothill grassland, and Vernal pools, growing at elevations from 215-3280 feet. Blooming period is March-July.	**Moderate.** Suitable valley and foothill grasslands with clay soils are present. Not observed during focused plant surveys. Nearest known occurrence is approximately 2.2 miles away.
Mt. Diablo phacelia (*Phacelia phacelioides*)	CNPS: 1B.2 Global Rank: G2 State Rank: S2	Occurs within Chaparral, and Cismontane woodland, growing at elevations from 1640-4495 feet. Blooming period is from April-May.	**Not Likely to Occur.** Project site is outside of the known elevation range.
Hairless popcornflower (*Plagiobothrys glaber*)	CNPS: 1A Global Rank: GX State Rank: SX	Occurs within Marshes and swamps (coastal salt), and Meadows and seeps (alkaline), growing at elevations from 50-590 feet. Blooming period is from March-May.	**Not Likely to Occur.** No suitable coastal salt or alkaline meadow habitat are present. Not observed during focused plant surveys. Nearest known occurrence is approximately 7 miles away.
California alkali grass (*Puccinellia simplex*)	CNPS: 1B.2 Global Rank: G2	Occurs within Chenopod scrub, Meadows and seeps, Valley and foothill grassland, and Vernal pools, growing at elevations	**Low.** Suitable valley and foothill grassland is present, but with limited mesic areas. Not observed

TABLE 5.2-2 KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL-STATUS PLANTS WITHIN THE PROJECT AREA

Common Name *Scientific Name*	**Status[1]**	**Range, Habitat, and Blooming Period**	**Potential to Occur[2] and Comments**
	State Rank: S2	from 5-3050 feet. Blooming period is from March-May.	during focused plant surveys. Nearest known occurrence is approximately 4 miles away.
Chaparral harebell (*Ravenella exigua*)	CNPS: 1B.2 Global Rank: G2 State Rank: S2	Occurs within Chaparral (rocky, and usually serpentine), growing at elevations from 900-4100 feet. Blooming period is from May-June.	**Not Likely to Occur.** Project site is outside of the known elevation range.
Chaparral ragwort (*Senecio aphanactis*)	CNPS: 1B.2 Global Rank: G3 State Rank: S2	Occurs within Chaparral, Cismontane woodland, and Coastal scrub, growing at elevations from 50-2625 feet. Blooming period is from January-May.	**Not Likely to Occur.** No suitable chaparral, woodland, or coastal scrub habitat is present. Not observed during focused plant surveys. Nearest known occurrence is approximately 4.6 miles away.
Long-styled sand-spurrey (*Spergularia macrotheca* var. *longistyla*)	CNPS: 1B.2 Global Rank: G5T2 State Rank: S2	Occurs within Marshes and swamps, and Meadows and seeps, growing at elevations from 0-835 feet. Blooming period is from February-May.	**Not Likely to Occur.** No suitable marsh or meadow habitat is present. Not observed during focused plant surveys. Nearest known occurrence is approximately 3 miles away.
Saline clover (*Trifolium hydrophilum*)	CNPS: 1B.2 Global Rank: G2 State Rank: S2	Occurs within Marshes and swamps, Valley and foothill grassland (mesic, alkaline), and Vernal pools, growing at elevations from 0-985 feet. Blooming period is from April-June.	**Low.** Suitable valley and foothill grassland is present, but with limited mesic areas. Not observed during focused plant surveys. Nearest known occurrence is approximately 8 miles away.
Caper-fruited tropidocarpum (*Tropidocarpum capparideum*)	CNPS: 1B.1 Global Rank: G1 State Rank: S1	Occurs within Valley and foothill grassland, growing at elevations from 5-1495 feet. Blooming period is from March-April.	**High.** Suitable valley and foothill grassland with alkaline soils are present. Not observed during focused plant surveys. Nearest documented historical occurrence is approximately .8 miles away. Nearest recent occurrence is approximately 3 miles away.

[1]FEDERAL STATUS DESIGNATIONS
***ESA* (*Federal Endangered Species Act*):**
FT = Federally threatened
FP-T = Federally proposed as threatened
FE = Federally endangered
S = Sensitive

STATE STATUS DESIGNATIONS
***CESA* (*California Endangered Species Act*):**
ST = State threatened
SE = State endangered

[2]POTENTIAL TO OCCUR DEFINITIONS:
The definitions provided below are general parameters used to establish a baseline potential for each species to occur. These may be slightly altered due to survey results, professional experience, and/or coordination with the applicable resource agencies.
Present: Observed within or near project site during surveys.
High: Suitable habitat is present; project site is within known geographic and elevation ranges of species; and recent (within 10 years) record(s) located within 10 miles of project site.

TABLE 5.2-2 KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL-STATUS PLANTS WITHIN THE PROJECT AREA

Common Name *Scientific Name*	**Status[1]**	**Range, Habitat, and Blooming Period**	**Potential to Occur[2] and Comments**
SC-E = State candidate for listing as endangered SC-T = State candidate for listing as threatened ***CNPS (California Native Plant Society – California Rare Plant Rank):*** 1B = Rare, threatened, or endangered in California and elsewhere 2B = Rare, threatened, or endangered in California but mostly common elsewhere 4 = Watch list (limited distribution) Threat Rank: 0.1 = Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat) 0.2 = Moderately threatened in California (20-80% occurrences threatened/moderate degree and immediacy of threat) 0.3 = Not very threatened in California (less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known) ***NatureServe Global / State Ranks:*** (G/S) 1 = Critically imperiled; at very high risk of extinction or elimination due to very restricted range, very few populations or occurrences, very steep declines, very severe threats, or other factors (G/S) 2 = Imperiled; at high risk of extinction or elimination due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors (G/S) 3 = Vulnerable; at moderate risk of extinction or elimination due to fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors (G/S) 4 = Apparently secure; at fairly low risk of extinction or elimination due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of recent local declines, threats, or other factors (G/S) 5 = Secure; at very low risk of extinction or elimination due to a very extensive range, abundant populations or occurrences, and little to no concern from declines or threats SNR = State not ranked			**Moderate:** Suitable habitat is present; project site is within known geographic and elevation ranges of species; and recent (within 10 years) record(s) located within 10 miles of project site OR typically suitable habitat is present; project site is within geographic and elevation ranges of species; and somewhat recent (within 20 years) record(s) located within 10 miles of project site. **Low:** Typically or occasionally suitable habitat is present; project site is outside of known geographic and/or elevation ranges; and recent (within 10 years) record(s) located within 10 miles of project site OR typically or occasionally suitable habitat is present; project site is within known geographic and elevation ranges; and recent (within 10 years) or somewhat recent (within 20 years) located within 10 miles of project site. **Not likely to occur:** Typically, or occasionally suitable habitat is not present and/or the project site is outside of the known geographic and/or elevation ranges of the species; no known records located within 10 miles of project site. **Sources:** Calflora 2025, CDFW 2025a, CDFW 2025c, CNPS 2025b, Dudek 2024, NatureServe 2025, USFWS 2025e

TABLE 5.2-2 KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL-STATUS PLANTS WITHIN THE PROJECT AREA			
Common Name *Scientific Name*	**Status[1]**	**Range, Habitat, and Blooming Period**	**Potential to Occur[2] and Comments**
T = Subspecies/varieties receive a "T" rank attached to the "G" rank. With subspecies/varieties, the "G" rank reflects the condition of the entire species, whereas the "T" rank reflects the global situation of just the subspecies or variety.			

Heartscale (*Atriplex cordulata* var*. cordulata*). Heartscale is not classified as special status under any state or federal law or agency, nor is it covered under the EACCS. An annual herb, this species occurs in chenopod scrub, meadows and seeps, valley and foothill grassland. It is endemic to the Central Valley, and it's found in the San Joaquin Valley, where it grows in areas of saline and alkaline soils. This species prefers elevations from sea level up to 1,835 feet. The blooming period extends from approximately April to October (CNPS 2025b). The nearest known occurrence is approximately 6 miles to the northwest of the project site. While there is suitable grassland habitat within the project site, this species was not observed during focused rare plant surveys conducted by the applicant during the appropriate blooming period. Therefore, there is a low potential for this species to be present.

Lesser saltscale (*Atriplex minuscula*). Lesser saltscale is not classified as special status under any state or federal law or agency, nor is it covered under the EACCS. An annual herb, this species occurs in chenopod scrub, playas, valley and foothill grassland. Prefers sandy, alkaline soils, and elevations of 50 to 655 feet. The blooming period typically extends from May to October (CNPS 2025b). The nearest known occurrence is approximately 5 miles west of the project site. While there is suitable grassland habitat present, the site generally lacks sandy soils. This species was not observed during focused rare plant surveys conducted by the applicant during the appropriate blooming period. Therefore, there is a low potential for this species to be present.

Big-scale balsamroot (*Balsamorhiza macrolepis*). Big-scale balsamroot is not classified as special status under any state or federal law or agency, nor is it covered under the EACCS. It is a perennial herb that is endemic to California. The species occurs in chaparral, cismontane woodland, and valley and foothill grassland habitats from 150 to 5,100 feet in elevation. The blooming period typically occurs from March to June (CNPS 2025b). The nearest known occurrence is approximately 6 miles to the northwest of the project site. While there is suitable grassland habitat present, the site generally lacks sandy, rocky and gravelly soils. This species was not observed during focused rare plant surveys conducted by the applicant during the appropriate blooming period. Therefore, there is a low potential for this species to be present.

Big tarplant (*Blepharizonia plumosa*). Big tarplant (CRPR List 1B.1, EACCS covered species) is an annual herb typically found in annual grasslands characterized by clay to clay-loam soils. It favors sloped topography and often colonizes areas that have recently burned, generally below 1,500 feet. Seedlings appear in early spring, but the plants do not begin to bloom until mid-summer. The blooming period, during which the plants produce many heads with white flowers, generally occurs between July to October (EACCS 2010).

Threats to this species include urbanization, disking, residential development, and encroachment by non-native plant species (EACCS 2010). Three individual plants were observed during the rare plant survey on August 2, 2023. These plants were detected

near the southwest corner of the PG&E Tesla substation in an area of sparse grassland that shows evidence of drainage patterns from the surrounding hills, including cracked soils, reduced grass cover and increased scrub species cover, and increased bare ground (Dudek 2024). EACCS Goal 23 aims to conserve focal plant species by prioritizing the avoidance and minimization of construction-related and post-project impacts (Objective 23.1). These efforts are supported by the protection of existing populations (Objective 23.2) and the enhancement of suitable habitats through management plans, seed banking, and reintroduction programs (Objective 23.3). Therefore, this species is known to be present within the project site.

Palmate-bracted bird's-beak (*Chloropyron palmatum*). Palmate-bracted bird's-beak federally and state listed as endangered under the ESA and CESA respectively. The species is also covered by the EACCS. It is a hemiparasitic annual herb that is endemic to California. The species occurs in Chenopod scrub and valley and foothill grassland habitats at elevations from 15 to 510 feet, where it is preferential to alkaline soils. The blooming period typically occurs from May to October (CNPS 2025b). The nearest known occurrence is approximately 8 miles west of the project site. While there is suitable grassland habitat present, Pescadero soils are a minor component and there is a lack of seasonally flooded flats with salty soils. This species was not observed during focused rare plant surveys conducted by the applicant during the appropriate blooming period. Therefore, there is a low potential for this species to be present.

California alkali grass (*Puccinellia simplex*). California alkali grass is not classified as special status under any state or federal law or agency, nor is it covered under the EACCS. It is an annual herb found within and outside of California. The species occurs within Chenopod scrub, meadow and seep, valley and foothill grassland, and vernal pool habitats from elevations 5 to 3,050 feet above sea level. The species prefers sinks, flats, lake margins, vernally mesic areas, and alkaline soils. The blooming period typically occurs from March to May (CNPS 2025b). The nearest known occurrence is approximately 4 miles to the northwest of the project site. While there is suitable grassland habitat present, there is a lack of suitable sandy or loose loamy soils with high moisture content. This species was not observed during focused rare plant surveys conducted by the applicant during the appropriate blooming period. Therefore, there is a low potential for this species to be present.

Saline clover (*Trifolium hydrophilum*). Saline clover is not classified as special status under any state or federal law or agency, nor is it covered under the EACCS. It is an annual herb that is endemic to California. The species occurs within marshes and swamps, valley and foothill grassland, and vernal pools where it grows from sea level to 985 feet in elevation. The species prefers mesic habitats with alkaline soils. The blooming period typically occurs from April to June (CNPS 2025b). The nearest known occurrence is approximately 8 miles west of the project site. While there is suitable grassland habitat present, there is a lack of suitable mesic areas. This species was not observed during focused rare plant surveys conducted by the applicant during the

appropriate blooming period. Therefore, there is a low potential for this species to be present.

Special-Status Wildlife

For the purposes of this staff assessment, special-status wildlife species include:

- Listed, proposed for listing, or candidates for listing as threatened or endangered species (including designated or proposed critical habitat) under the federal ESA
- Listed, or candidates for listing as threatened or endangered under the CESA
- Bald and golden eagles protected under the Bald and Golden Eagle Protection Act
- Designated as Fully Protected (FP) by the CDFW
- Designated as a Species of Special Concern (SSC) by CDFW

Species identified by the U.S. Fish and Wildlife Service (USFWS) as Birds of Conservation Concern (BCC) do not, by that designation alone, qualify as special-status species under CEQA. However, if a BCC species also meets the definition of a special-status species, as defined above, it is considered a special-status species for purposes of CEQA analysis and is evaluated for potential impacts. These species are noted in **Table 5.2-4** below. In addition to the literature review and reconnaissance-level surveys described above, the applicant conducted several focused and protocol-level surveys for special-status wildlife species. **Table 5.2-3** summarizes the wildlife surveys that were conducted by the applicant.

TABLE 5.2-3 SUMMARY OF WILDLIFE SURVEYS CONDUCTED FOR THE PROJECT

Survey Focus	Survey Type	Dates
Crotch's Bumble Bee (*Bombus crotchii*)	Focused	May 16, 2023 August 2, 2023 January 18, 2024
California Red-Legged Frog (*Rana draytonii*) and California Tiger Salamander (*Ambystoma californiense*)	Protocol (Non-Breeding Season)	August 2, 2023
Burrowing Owl (*Athene cunicularia*)	Protocol (Breeding and Non-Breeding Season)	April 12, 2024 (breeding) May 3, 2024 (breeding) May 24, 2024 (breeding) June 17, 2024 (breeding) December 12, 2024 (non-breeding) January 4, 2025 (non-breeding) January 11, 2025 (non-breeding) January 31, 2025 (non-breeding)
Swainson's Hawk (*Buteo swainsoni*) and Golden Eagle (*Aquila chrysaetos*)	Protocol (Nesting and Non-Nesting Season)	December 12, 2024 (winter) March 20, 2025 (spring) March 27, 2025 (spring) April 3, 2025 (spring) April 11, 2025 (spring) April 17, 2025 (spring) April 28, 2025 (spring)

TABLE 5.2-3 SUMMARY OF WILDLIFE SURVEYS CONDUCTED FOR THE PROJECT

Survey Focus	Survey Type	Dates
Burrows (Burrowing Owl, San Joaquin Kit Fox, American Badger)	Focused	May 16, 2023 August 2, 2023 January 18, 2024 April 12, 2024

Crotch's Bumble Bee Focused Surveys. Focused surveys for Crotch's bumble bee (*Bombus crotchii*) habitat were conducted on May 16 and August 2, 2023, as well as January 18, 2024, to identify foraging and nesting habitat within the project site. Biologists surveyed the project site on foot in approximately 20-meter parallel transects to provide complete visual coverage within the project site and gen-tie alignment. Bumble bee habitat was identified following *CDFW Survey Considerations for California Endangered Species Act* (*CESA*) *Candidate Bumble Bee Species* (CDFW 2023), which includes plant species that provide floral (nectar) resources and nesting substrates such as bare ground, rodent burrows, thatched grass, or rock piles. Potential bumble bee floral resources and nesting substrates were mapped using ArcGIS Field Maps (ESRI).

California Red-Legged Frog Habitat Assessment. A protocol-level habitat assessment for California red-legged frog was conducted on August 2, 2023, for suitable aquatic habitats identified within, and in the vicinity of the project site. Surveys were conducted to identify potential aquatic breeding sites within dispersal distance of the project site. Due to access restrictions not all aquatic habitats within 1-mile were able to be surveyed. Habitat assessments were conducted in accordance with the USFWS *Revised Guidance on Site Assessments and Field surveys for California Red-Legged Frog* (USFWS 2005). Aquatic features were mapped along top of bank using ArcGIS Field Maps (ESRI).

California Tiger Salamander Habitat Assessment. A protocol-level habitat assessment for California tiger salamander (*Ambystoma californiense*) was conducted concurrently with the California red-legged frog habitat assessment on August 2, 2023, for suitable aquatic habitats identified within, and in the vicinity of the project site. Surveys were conducted to identify potential aquatic breeding sites within dispersal distance of the project site. Due to access restrictions not all aquatic habitats within 1.24 miles were able to be surveyed. Habitat assessments were conducted in accordance with the USFWS *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander* (USFWS 2003). Aquatic features were mapped along top of bank using ArcGIS Field Maps (ESRI).

Burrowing Owl. Protocol-level surveys for western burrowing owl were conducted on April 12, May 3, May 24, and June 17, 2024. Winter surveys were conducted on December 12, 2024, as well as January 4, 11, and 31, 2025. Surveys followed the recommended protocol outlined in the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). Biologists walked transects no more than 20 meters apart, within the project site. Biologists documented any sight or sign of western burrowing owls.

Swainson's Hawk. Surveys for Swainson's hawk (*Buteo swainsoni*) were conducted on December 12, 2024, as well as March 20, 27, April 3, 11, 17, and 28, 2025. These surveys followed the recommended protocol outlined in *The Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (SHTA 2000).

Although the standard protocol specifies a 0.5-mile survey radius, the survey area was expanded to a 1-mile radius from the project site. This was due to a scarcity of appropriate nesting trees and to ensure a thorough assessment of the species' potential use of the wider project vicinity. A total of seven surveys were completed including an initial assessment to identify potential habitat and existing stick nests, followed by six targeted surveys to cover the critical courtship, incubation, and fledgling life stages of the hawk. Biologists primarily conducted surveys from vehicles on accessible roads, utilizing binoculars and a spotting scope for observations.

Golden Eagle. Surveys for golden eagles (*Aquila chrysaetos*) were conducted at the same time as the Swainson's hawk surveys described above. These surveys took place on December 12, 2024, as well as March 20, 27, April 3, 11, 17, and 28, 2025. The methodology followed the recommended ground-based survey protocols detailed in the *Interim Golden Eagle Inventory and Monitoring Protocols; and Other Recommendations* (Pagel et al 2010). The survey area extended to a 2-mile buffer, where the terrain allowed access.

The survey included an initial assessment to identify potential nesting habitat and the presence of suitable stick nests, as well as checking previously recorded territories within the buffer. Additional surveys covered the courtship, incubation, nestling, and fledgling stages of the breeding cycle. Biologists established vantage points overlooking the project site and used binoculars and a spotting scope to observe raptor activity. Vantage point observations were specifically made on December 12, 2024, March 20, 2025, and April 28, 2025, each lasting a minimum of 4 hours.

Burrow Surveys. Focused burrow surveys were conducted on May 16 and August 2, 2023, as well as January 18, 2024, to identify a variety of animal burrows within the project site. Additional surveys to assess burrow suitability for San Joaquin kit fox and American badger (*Taxidea taxus*) were conducted on April 12, 2024. The additional surveys followed the recommended *San Joaquin Kit Fox Survey Protocol for the Northern Range* (USFWS 1999). Biologists surveyed the project site boundaries including the gen-tie alignment. Burrows of all sizes were mapped using ArcGIS Field Maps (ESRI).

Survey Results and Potential to Occur. Surveys conducted by the applicant identified two special-status wildlife species present within or near the project site. These included California horned lark (*Eremophila alpestris actia*) and tricolored blackbird. CEC staff determined that 25 additional species have at least some potential to occur in or near the project site based on the presence of suitable habitat, proximity

to documented occurrences, and/or through coordination with CDFW (see **Table 5.2-4**). Several species identified during the literature review were determined to have no potential to occur based on the project site being located outside of known ranges for these species, a lack of suitable habitat, the absence of recent records or documentation, coordination with the applicable resource agencies, and/or staff's professional judgement. Please refer to **Table 5.2-4** for a complete list of these species and the potential to occur within the project area. Wildlife species with no potential to occur are not discussed further in this document. See **Figure 5.2-4** for locations of potential suitable habitat for Crotch's bumble bee, California red-legged frog, and California tiger salamander that were identified during surveys.

Federal- and State-Listed Wildlife. No federally listed species were observed within the project site during surveys conducted by the applicant. One state-listed species, tricolored blackbird, was observed foraging during surveys conducted by the applicant. Additional federal- and/or state-listed species were determined to have some potential to occur within or near the project site. These include California tiger salamander, California red-legged frog, western burrowing owl, San Joaquin kit fox, Crotch's bumble bee, monarch butterfly (*Danaus plexippus*), and Swainson's hawk.

Fully Protected Wildlife. Several species designated as fully protected under the California Fish and Game Code have the potential to occur within or near the project site. Golden eagles have a high potential to forage and a moderate potential to nest within the project area. This species is federally protected by the Bald and Golden Eagle Protection Act and is a state FP species under the California Fish and Game Code that is also covered under the EACCS. In addition, white-tailed kites have a moderate potential to nest and forage within the project area.

Other Special-Status Wildlife. Several special-status wildlife were determined to have a moderate or high potential to occur within the project site due to the presence of suitable habitat. Focused surveys (Dudek 2024) documented California horned lark, a CDFW Watch List (WL) species. Other species with a moderate or high potential to occur but not detected during surveys include American badger, San Joaquin coachwhip (*Masticophis flagellum ruddocki*), ferruginous hawk, northern harrier, Cooper's hawk, and prairie falcon. Species with a low to moderate potential to occur include coast horned lizard (*Phrynosoma blainvillii*).

TABLE 5.2-4 KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL-STATUS WILDLIFE WITHIN THE PROJECT AREA

Common Name *Scientific Name*	**Status[1]**	**Range and Habitat**	**Potential to Occur[2] and Comments**
INVERTEBRATES			
Crotch's bumble bee (*Bombus crotchii*)	State List: SC-E Global Rank: G2 State Rank: S2	Found between San Diego and Redding in a variety of habitats, including open grasslands, shrublands, chaparral, desert margins, and semi-urban settings; nests underground but nest characteristics not well documented; generalist forager with typical floral resources including plants in the Fabaceae, Apocynaceae, Asteraceae, Lamiaceae, Boraginaceae families; overwinter in soft, disturbed soils or under leaf litter or other debris, but very little is known about hibernacula characteristics.	**Moderate.** Grassland habitat is present with scattered floral resources and nesting substrates. Nearest known occurrence is approximately 5 miles away.
Western bumble bee (*Bombus occidentalis*)	State List: SC-E Global Rank: G3 State Rank: S1	Forests, meadows, and coastal scrub.	**Not Likely to Occur.** This species is not expected to occur in the Bay Area. Known range in California is further north of project area.
Longhorn fairy shrimp (*Branchinecta longiantenna*)	Federal List: FE Global Rank: G2 State Rank: S2	Valley and foothill grassland, Vernal pool, Wetland.	**Not Likely to Occur.** Vernal pools do not occur within the project study area, including the areas within and outside of CEC's Opt-In Certification.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	Federal List: FT Global Rank: G3 State Rank: S3	Valley and foothill grassland, Vernal pool, Wetland.	**Not Likely to Occur.** Vernal pools do not occur within the project study area, including the areas within and outside of CEC's Opt-In Certification.
Midvalley fairy shrimp (*Branchinecta mesovallensis*)	Global Rank: G2 State Rank: S2S3	Vernal pool, Wetland.	**Not Likely to Occur.** Vernal pools do not occur within the project study area, including the areas within and outside of CEC's Opt-In Certification.
Monarch butterfly (*Danaus plexippus*)	Federal list: FP-T Global Rank: G4T12Q State Rank: S2	Overwinter in groves of trees scattered from Mendocino County south to Baja California; start to migrate inland in the spring feeding on flower nectar, mating and laying eggs on a variety of milkweed (*Asclepias* spp.) plants, the sole source of food for caterpillars.	**Moderate.** Suitable breeding habitat (milkweed) is scattered throughout the project study area; however, there are no concentrated populations of the host plant present; foraging habitat (nectar producing plants) are present throughout the project study area.

TABLE 5.2-4 KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL-STATUS WILDLIFE WITHIN THE PROJECT AREA

Common Name *Scientific Name*	**Status[1]**	**Range and Habitat**	**Potential to Occur[2] and Comments**
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	Federal List: FT Global Rank: G3T3 State Rank: S3	Riparian scrub.	**Not Likely to Occur.** No blue elderberry host plants are present in the project study area.
Vernal pool tadpole shrimp (Lepidurus packardi)	Federal List: FE	Vernal pool wetlands	**Not Likely to Occur.** Vernal pools do not occur within the project study area, including the areas within and outside of CEC's Opt-In Certification.
California linderiella (*Linderiella occidentalis*)	Global Rank: G2G3 State Rank: S2S3	Vernal pool	**Not Likely to Occur.** Vernal pools do not occur within the project study area, including the areas within and outside of CEC's Opt-In Certification.
REPTILES AND AMPHIBIANS			
California tiger salamander pop 1 (*Ambystoma californiense*)	Federal List: FT State List: ST Global Rank: G2G3T3 State Rank: S3 CDFW: WL	Cismontane woodland, Meadow and seep, riparian woodland, Valley and foothill grassland, Vernal pool, Wetland.	**High.** Suitable grassland habitat is present within the project study area and breeding habitat is available within dispersal distance.
Northern California legless lizard (*Anniella pulchra*)	Global Rank: G3 State Rank: S2S3 CDFW: SSC	Chaparral, Coastal dunes, Coastal scrub.	**Not Likely to Occur.** Grassland habitat is present; however, suitable sandy or loose loamy soils with high moisture content do not occur within or adjacent to the project area, including the areas within and outside of CEC's Opt-In Certification.
California glossy snake (*Arizona elegans occidentalis*)	Global Rank: G5T2 State Rank: S2 CDFW: SSC	Occurs throughout southern California in desert, interior coast ranges, chapparal, sagebrush, annual grasslands, valley-foothill hardwood, pine-juniper.	**Not Likely to Occur.** Grassland habitat is present; however, there are limited loose soils available.
Northwestern pond turtle (*Actinemys marmorata*)	Federal List: FP-T Global Rank: G2 State Rank: SNR CDFW: SSC	Aquatic, Artificial flowing waters, Klamath/North coast flowing waters, Klamath/North coast standing waters, Marsh and swamp, Sacramento/ San Joaquin flowing waters, Sacramento/San Joaquin standing waters, South coast flowing waters, South coast standing waters, Wetland.	**Low.** Patterson Run creek provides low-quality habitat.

TABLE 5.2-4 KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL-STATUS WILDLIFE WITHIN THE PROJECT AREA

Common Name *Scientific Name*	**Status[1]**	**Range and Habitat**	**Potential to Occur[2] and Comments**
Alameda whipsnake (*Masticophis lateralis euryxanthus*)	Federal List: FT State List: ST Global Rank: G4T2 State Rank: S2	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland.	**Not Likely to Occur.** No suitable chaparral or scrub habitat is present.
San Joaquin coachwhip (*Masticophis flagellum ruddocki*)	Global Rank: G5T2T3 State Rank: S3 CDFW: SSC	Chenopod scrub, Valley and foothill grassland.	**Moderate.** Grassland habitat is present with small mammal burrows for refuge. Nearest known occurrence is approximately 0.4 miles away.
Coast horned lizard (*Phrynosoma blainvillii*)	Global Rank: G4 State Rank: S4 CDFW: SSC	Chaparral, Cismontane woodland, Coastal bluff scrub, Coastal scrub, Desert wash, Pinon and juniper woodlands, riparian scrub, riparian woodland, Valley and foothill grassland.	**Low to Moderate.** Grassland habitat is present; however, there are limited open areas for sunning and limited loose soils available.
Foothill yellow-legged frog - central coast DPS (*Rana boylii* pop. 4)	Federal List: FT State List: SE Global Rank: G3T2 State Rank: S2	Aquatic, Chaparral, Cismontane woodland, Coastal scrub, Klamath/North coast flowing waters, Lower montane coniferous forest, Meadow and seep, riparian forest, riparian woodland, Sacramento/San Joaquin flowing waters.	**Not Likely to Occur.** No suitable rocky stream habitat is present. Nearest known occurrence is approximately 5 miles away.
California red-legged frog (*Rana draytonii*)	Federal List: FT Global Rank: G2G3 State Rank: S2S3 CDFW: SSC	Aquatic, Artificial flowing waters, Artificial standing waters, Freshwater marsh, Marsh and swamp, riparian forest, riparian scrub, riparian woodland, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, South coast flowing waters, South coast standing waters, Wetland.	**High.** Suitable grassland habitat with small mammal burrows are present. Aquatic breeding habitat is available within dispersal distance. Numerous occurrences within 5 miles of the project site.
Western spadefoot (*Spea hammondii*)	Federal List: FP-T Global Rank: G2G3 State Rank: S3S4 CDFW: SSC	Cismontane woodland, Coastal scrub, Valley and foothill grassland, Vernal pool, Wetland – requires sandy/gravely soils.	**Low.** Vernal pools for breeding and egg-laying do not occur within the project site. Nearest known occurrence is approximately 3.6 miles away.
BIRDS			
Cooper's hawk (*Accipiter cooperii*	Global Rank: G5 State Rank: S4 CDFW: WL	Mostly a yearlong resident throughout most of the wooded portions of California; nesting and foraging usually occurs in dense stands of live oak, riparian deciduous, or other forest habitats near open water or riparian vegetation.	**Low (nesting) and Moderate (foraging).** Suitable open grassland areas are present for foraging. Nearest known occurrence reported within 1-mile of the project site.

TABLE 5.2-4 KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL-STATUS WILDLIFE WITHIN THE PROJECT AREA

Common Name *Scientific Name*	**Status[1]**	**Range and Habitat**	**Potential to Occur[2] and Comments**
Tricolored blackbird (*Agelaius tricolor*)	State List: ST Global Rank: G1G2 State Rank: S2 CDFW: SSC	Yearlong resident that makes extensive migrations and movements within their range in California; colonial breeding occurs near fresh water, preferably wetlands with tall cattails or tules, but also in thickets of willow, blackberry, wild rose, and tall herbs; often congregate in huge, mixed-species blackbird flocks that forage in grasslands and agricultural fields with low-growing vegetation during the winter.	**Low (nesting) and Present (foraging).** Species observed during January 2024 field survey. No suitable nesting habitat is present in the project study area. Abundant grassland habitat for foraging is present.
Grasshopper sparrow (*Ammodramus savannarum*)	Global Rank: G5 State Rank: S3 CDFW: SSC	Occurs in California primarily as a summer resident from March to September; partly migratory with rare winter occurrences; prefer short to middle-height, moderately open grasslands with scattered shrubs.	**Low.** Abundant grassland habitat is present; however, the project study area lacks shrubs for perching.
Short-eared owl (*Asio flammeus*)	Federal: BCC Global Rank: G5 State Rank: S2 CDFW: SSC	Usually found in open areas with few trees such as annual and perennial grasslands, prairies, dunes, wetlands, and irrigated lands.	**Low**. Suitable grassland habitat is present for nesting and foraging. Nearest known occurrence is approximately 2.6 miles away documented from 1995.
Golden eagle (*Aquila chyrsaetos*)	Federal: BCC Global Rank: G5 State Rank: S3 CDFW: FP	Yearlong resident and migrant throughout California except center of Central Valley; nests and winters in hilly, open, or semi-open areas including shrublands, grasslands, pastures, riparian areas, mountain canyons, and open desert, constructing nests in trees and cliffs in open areas; forages in open habitats including grasslands, shrublands and desert areas. Known to nest in trees and on transmission lines.	**High (foraging) Moderate to High (nesting).** Two golden eagle territories overlap the project study area. The Midway and Jess Ranch pairs. Transmission towers and trees within 1-mile provide potential nesting habitat. Grassland foraging habitat is present.
Burrowing owl (*Athene cunicularia*)	State List: SC-E Global Rank: G4 State Rank: S2	Coastal prairie, Coastal scrub, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, Valley and foothill grassland.	**High.** Suitable grassland habitat with small mammal burrows is present. Numerous occurrences within 1-mile of the project site are documented.
Ferruginous hawk (*Buteo regalis*)	Global Rank: G4 State Rank: S3S4 CDFW: WL	Great Basin grassland, Great Basin scrub, Pinon and juniper woodlands, Valley and foothill grassland.	**Moderate.** Suitable open grassland is present for foraging. Nearest known occurrence is approximately 2.7 miles away.

TABLE 5.2-4 KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL-STATUS WILDLIFE WITHIN THE PROJECT AREA

Common Name *Scientific Name*	**Status[1]**	**Range and Habitat**	**Potential to Occur[2] and Comments**
Swainson's hawk (*Buteo swainsoni*)	State List: ST Global Rank: G5 State Rank: S4	Nests peripheral to riparian systems or in lone trees in agricultural fields or pastures and roadside trees when available and adjacent to suitable foraging habitat; forages in adjacent grasslands or suitable grain or alfalfa fields.	**Low (nesting) and Moderate (foraging).** Suitable open grassland is present for foraging. Nearest known occurrence is less than 1-mile of the project site.
Northern harrier (*Circus hudsonius*)	Global Rank: G5 State Rank: S3 CDFW: SSC	Yearlong resident within its breeding range in California; breed and forage in a variety of open (treeless) habitats that provide vegetative cover, including annual and perennial grasslands, weed fields, agricultural fields, sagebrush flats, and desert sinks, among others.	**Moderate (nesting and foraging).** Suitable open grassland is present within the project site. Nearest known occurrence is approximately 2.4 miles away.
White-tailed kite (*Elanus luecurus*)	Global Rank: G5 State Rank: S3S4 CDFW: FP	Cismontane woodland, Marsh and swamp, riparian woodland, Valley and foothill grassland, Wetland.	**Moderate (nesting and foraging).** Suitable open grassland is present within the project site but with limited individual trees nearby. Nearest known occurrence is approximately 3.7 miles away.
California horned lark (*Eremophila alpestris actia*)	Global Rank: G5T4Q State Rank: S4 CDFW: WL	Variety of open habitat where trees and large shrubs are present.	**High.** Suitable grassland for foraging and potential nesting habitat (ground nesting) is present for this species. Horned larks are known to be present in this area.
Prairie falcon (*Falco mexicanus*)	Global Rank: G5 State Rank: S4 CDFW: WL	Uncommon yearlong resident from southeastern deserts northwest throughout the Central Valley and along the inner Coast Ranges and Sierra Nevada; typically nests in a scrape on a sheltered ledge of a cliff overlooking large, open areas; forages in perennial grasslands, savannahs, rangelands, agricultural fields, and desert scrub.	**Moderate to High. (foraging)** Suitable foraging habitat is present. Nearest known historical occurrence is within 1-mile of the project site.
California condor (*Gymnogyps californianus*)	Federal List: FE Global Rank: G1 State Rank: S1 CDFW: FP	Reintroduced into southern California, Arizona, and Baja California; use vast expanses of varying habitats for nesting, roosting, and foraging; nests are located in caves and ledges of steep rocky terrain or in old growth conifers; forages in open grasslands, oak savanna foothills, and beaches adjacent to coastal mountains.	**Low to Moderate.** This species has been observed in Alameda County. Nearest known sighting was from 2024 approximately 8 miles to the southwest.

TABLE 5.2-4 KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL-STATUS WILDLIFE WITHIN THE PROJECT AREA

Common Name *Scientific Name*	**Status[1]**	**Range and Habitat**	**Potential to Occur[2] and Comments**
Bald eagle (*Haliaeetus leucocephalus*)	Federal List: D State List: SE Global Rank: G5 State Rank: S3 CDFW: FP	Yearlong resident in northern California and scattered locations in central and southern Sierra Nevada Mountains and foothills, central coast range to inland southern California; uncommon to common winter migrant in southern California; nests in large, old-growth forests; requires large bodies of permanent water nearby for nesting and foraging.	**Not Likely to Occur.** No forested habitat or large water bodies are present within the project site or vicinity. Nearest known occurrence is approximately 11 miles away.
Loggerhead shrike (*Lanius ludovicianus*)	Global Rank: G4 State Rank: S4 CDFW: SSC	Common yearlong resident in lowlands and foothills throughout California; prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches; nests on stable branches in densely foliaged shrubs or trees.	**Low.** Open grassland habitat is present for foraging, but the project site has limited perches and lacks scattered shrubs or brush for nesting. Nearest known occurrence is approximately 4 miles away.
Song sparrow -"Modesto" population (*Melospiza melodia*) pop.1	Global Rank: G5 State Rank: S3 CDFW: SSC	Occurs in southern deserts, riparian wetlands, wet meadow habitats. Breeds in riparian thickets of willows, shrubs, coastal shrub.	**Not Likely to Occur.** No suitable riparian or marsh habitat is present. Nearest known occurrence is approximately 7 miles away.
Least Bell's vireo (*Vireo bellil pusillus*)	Federal List: FE State List: SE Global Rank: G5T2 State Rank: S3	Riparian habitat with dense shrubby vegetation along streams, rivers, and drainages.	**Not Likely to Occur.** No suitable riparian vegetation present within the project site. Nearest known occurrence is approximately 6 miles away.
MAMMALS			
Pallid bat (*Antrozous pallidus*)	Global Rank: G4 State Rank S3 CDFW: SSC	Roosting sites can include caves, rock crevices, mines, hollow trees, buildings; favors rocky outcrops and desert habitats.	**Low.** Grassland habitat is present for foraging but there are limited trees within the project site for roosting.
Townsend's big-eared bat (*Corynorhinus townsendii*)	Global Rank: G4 State Rank: S2 CDFW: SSC	Found throughout California but details of distribution not well known; requires caves, mines, tunnels, buildings, or other human-made structures for roosting; forages by gleaning from brush or trees or feeds along habitat edges.	**Not Likely to Occur.** No suitable forest or riparian habitat for foraging, and no suitable structures or caves for roosting are present.
Western mastiff bat (*Eumops perotis californicus*)	Global Rank: G4G5T4 State Rank: S3S4 CDFW: SSC	Primarily roosts in crevices often composed of exfoliating slabs of granite, sandstone slabs, cliff faces, or large boulders; forages in dry desert washes, floodplains, chaparral, oak woodlands, pine forests, grasslands, and agricultural fields.	**Not Likely to Occur.** No suitable chaparral, scrub, or forest habitat for foraging, and no suitable cliffs for roosting are present within the project site. There are no known occurrences within 5 miles of the project site.

TABLE 5.2-4 KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL-STATUS WILDLIFE WITHIN THE PROJECT AREA

Common Name *Scientific Name*	**Status[1]**	**Range and Habitat**	**Potential to Occur[2] and Comments**
Hoary bat (*Lasiurus cinereus*)	Global Rank: G2G4 State Rank: S4	Broadleaved upland forest, Cismontane woodland, Lower montane coniferous forest, North coast coniferous forest.	**Low.** No suitable woodlands, forests or dense foliage occurs within the project site. Nearest known occurrence is approximately 10 miles away.
San Joaquin pocket mouse (*Perognathus inornatus*)	Global Rank: G3 State Rank: S2S3	Coastal scrub, Valley and foothill grassland. Hawbecker (1951) found that the San Joaquin pocket mouse occurred on shrubby ridge tops and hillsides. Grinnell (1933) characterized the habitat as being open, sandy areas with grass and forbs.	**Low.** Nearest known occurrence is approximately 2 miles away.
Riparian brush rabbit (*Sylvilagus bachmani riparius*)	Federal List: FE State List: SE Global Rank G4T1 State Rank: S2	Found only at Caswell Memorial State Park on the Stanislaus River, San Joaquin Co. (Zeiner et al. 1988-1990, updated May 2000).	**Not Likely to Occur.** The project site is outside of the known range for this species. Nearest known occurrence is approximately 11 miles away.
American badger (*Taxidea taxus*)	Global Rank: G5 State Rank: S3 CDFW: SSC	Uncommon permanent resident found throughout most of California except along northern coast; most abundant in drier open stages of most shrub, forest, and herbaceous habitats; require friable soils for burrowing.	**High.** Suitable dry open grassland is present with evidence of friable soils and burrowing activity near Patterson Pass Road. The nearest known occurrence is less than 1-mile away.
San Joaquin kit fox (*Vulpes macrotis mutica*)	Federal List: FE State List: ST Global Rank: G4T2 State Rank: S3	Chenopod scrub, Valley and foothill grassland.	**High.** Suitable open grassland is present with evidence of friable soils and burrowing activity near Patterson Pass Road. Nearest known occurrence is approximately .3 miles away.
FISH			
Green sturgeon – southern DPS (Acipenser *medirostris*) pop. 1	Federal List: FT Global Rank: G2T1 State Rank: S1 CDFW: SSC	Aquatic, Klamath/North coast flowing waters, Sacramento/San Joaquin flowing waters.	**Not Likely to Occur.** No suitable aquatic habitat is present.
Delta smelt (Hypomesus transpacificus)	Federal List: FT State List: SE Global Rank: G1 State Rank: S1	Endemic to upper San Francisco Estuary, including the Sacramento-San Joaquin Delta. Favors open, cool, brackish waters such as Suisun Bay, the lower Sacramento and San Joaquin Rivers, and sloughs.	**Not Likely to Occur.** No suitable aquatic habitat is present.

TABLE 5.2-4 KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL-STATUS WILDLIFE WITHIN THE PROJECT AREA

Common Name *Scientific Name*	**Status[1]**	**Range and Habitat**	**Potential to Occur[2] and Comments**
Steelhead – Central Valley DPS (Oncorhynchus mykiss irideus) pop. 11	Federal List: FT Global Rank: G5T2Q State Rank: S2 CDFW: SSC	Historically throughout Sacramento and San Joaquin river systems, including Alameda County tributaries like Alameda Creek. Utilizes cool, clear streams with gravelly riffles and deep pools for spawning and rearing.	**Not Likely to Occur.** No suitable aquatic habitat is present.
Longfin smelt - San Francisco Bay-Delta DPS (Spirinchus thaleichthys) pop. 2	Federal List: FE State List: FT Global Rank: G5TNRQ State Rank: S1	San Francisco Bay Estuary, including Alameda County waters such as South Bay for spawning and rearing. Utilize various habitats from sloughs to deep channels.	**Not Likely to Occur.** No suitable aquatic habitat is present.
Eulachon (Thaleichthys pacificus)	Federal List: FT Global Rank: G4 State Rank: S1 CDFW: SSC	Historically ranged to Northern California and spawned in coastal rivers. Extirpated from San Francisco Bay/Alameda County region.	**Not Likely to Occur.** No suitable aquatic habitat is present.

[1]FEDERAL STATUS DESIGNATIONS

***ESA* (*Federal Endangered Species Act*):**
FT = Federally threatened
FP-T = Federally proposed as threatened
FE = Federally endangered

***USFWS* (*U.S. Fish and Wildlife Service*):**
BGEPA = Bald and Golden Eagle Protection Act
BCC = Bird of Conservation Concern

STATE STATUS DESIGNATIONS

***CESA* (*California Endangered Species Act*):**
ST = State threatened
SE = State endangered
SC-E = State candidate for listing as endangered
SC-T = State candidate for listing as threatened

***CDFW* (*California Department of Fish and Wildlife*)**
FP = Fully Protected species
SSC = Species of Special Concern
Title 14 = Title 14 species
WL = Watch List species

NatureServe Global / State Ranks:
(G/S) 1 = Critically imperiled; at very high risk of extinction or elimination due to very restricted range, very few populations or occurrences, very steep declines, very severe threats, or other factors

[2]POTENTIAL TO OCCUR DEFINITIONS:

The definitions provided below are general parameters used to establish a baseline potential for each species to occur. These may be slightly altered due to survey results, professional experience, and/or coordination with the applicable resource agencies.
Present: Observed within or near project site during surveys.
High: Suitable habitat is present; project site is within known geographic and elevation ranges of species; and recent (within 10 years) record(s) located within 10 miles of project site
Moderate: Suitable habitat is present; project site is within known geographic and elevation ranges of species; and recent (within 10 years) record(s) located within 10 miles of project site OR typically suitable habitat is present; project site is within geographic and elevation ranges of species; and somewhat recent (within 20 years) record(s) located within 10 miles of project site
Low: Typically or occasionally suitable habitat is present; project site is outside of known geographic and/or elevation ranges; and recent (within 10 years) record(s) located within 10 miles of project site OR typically or occasionally suitable habitat is present; project site is within known geographic and elevation ranges; and recent (within 10 years) or somewhat recent (within 20 years) located within 10 miles of project site
Not likely to occur: Typical or occasionally suitable habitat is not present and/or the project site is outside of the known geographic

TABLE 5.2-4 KNOWN AND POTENTIAL OCCURRENCE OF SPECIAL-STATUS WILDLIFE WITHIN THE PROJECT AREA

Common Name *Scientific Name*	**Status[1]**	**Range and Habitat**	**Potential to Occur[2] and Comments**
(G/S) 2 = Imperiled; at high risk of extinction or elimination due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors (G/S) 3 = Vulnerable; at moderate risk of extinction or elimination due to fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors (G/S) 4 = Apparently secure; at fairly low risk of extinction or elimination due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of recent local declines, threats, or other factors (G/S) 5 = Secure; at very low risk of extinction or elimination due to a very extensive range, abundant populations or occurrences, and little to no concern from declines or threats SNR = State not ranked T = Subspecies/varieties receive a "T" rank attached to the "G" rank. With subspecies/varieties, the "G" rank reflects the condition of the entire species, whereas the "T" rank reflects the global situation of just the subspecies or variety.			and/or elevation ranges of the species; no known records located within 10 miles of project site. **Sources:** CDFW 2025a, Dudek 2024, NatureServe 2025, eBird 2025, iNaturalist 2025, USFWS 2025e

Special-Status Invertebrates

Crotch's bumble bee (*Bombus crotchii*). Crotch's bumble bee does not have federal listing status but is currently designated as a candidate species under the CESA. As a candidate species, it receives the same protection as if it were listed as threatened or endangered until the California Fish and Game Commission makes a final determination on its status.

Once widespread in California's Central Valley, this species is now absent from much of its historic range. There has been a decline of 67.51 percent (based on EOO, persistence, and relative abundance) over the past decade (Xerces 2025). Ongoing threats to the species include habitat conversion, pesticide use, disease from managed bees, and other factors such as invasive species. Due to factors such as habitat loss, extensive agricultural activities, and use of pesticides in the Central Valley, this species now appears to be absent from most of its historic range (Xerces 2025).

Crotch's bumble bee inhabits diverse environments, including grasslands, shrublands, chaparral, desert margins, and semi-urban areas. As generalists, they utilize a wide range of plants for nectar, including *Antirrhinum*, *Asclepias, Chaenactis*, *Clarkia*, *Dendromecon*, *Eschscholzia*, *Eriogonum*, *Lupinus*, *Medicago*, *Phacelia*, *Salvia* (Williams et al 2014). This species nests in underground abandoned rodent nests, tufts of grass, old bird nests, rock piles, or cavities of dead trees.

The nearest documented occurrence is approximately 5 miles to the south and dates from a 2023 sighting. Focused habitat assessment surveys revealed scattered floral resources, including lupines (*Lupinus* spp.), narrowleaf milkweed (*Asclepias fascicularis*), and purple owl's-clover (*Castilleja exserta*). Potential nesting substrates, such as bare cracked soil, small rocky areas, and small rodent burrows, were also observed. No bumble bee species were detected during field surveys. Therefore, there is a moderate potential for the species to occur within and adjacent to the project site.

Monarch butterfly (*Danaus plexippus*). The monarch butterfly was proposed for listing as threatened under the federal ESA and is not covered under the EACCS. Adult monarch butterflies are large and conspicuous, with bright orange wings surrounded by a black border and covered with black veins. Originally native to North America, the monarch butterfly has dispersed to other parts of the world and non-migratory populations are found from islands in the Pacific Ocean to the western edge of Europe (Xerces 2016). North American migratory monarch butterflies are divided into eastern and western populations with the Rocky Mountains generally separating the two.

The North American western population is generally found west of the Rocky Mountains and can migrate annually up to 300 to 1,000 miles (500 to 1,600 kilometers) (Xerces 2016). There are also non-migratory monarchs that remain year-round at the southern end of their breeding range in parts of Florida, the Gulf Coast, and California. The primary threats affecting the health of North American migratory monarch butterfly populations include the loss and degradation of breeding, migratory, and overwintering

habitat from past conversion of grasslands and shrublands to agriculture and urban development, exposure to herbicides and insecticides, and effects of climate change (Xerces 2016).

Each fall, monarch butterflies go into diapause, a suspended state of reproduction, and begin their long migration to overwintering sites which consist of hundreds of tree groves along the California coast down into northern Baja California. Flowering plants and milkweed plants are essential components in monarch butterfly habitat. Adult monarchs require the nectar from a variety of flowering plants while foraging during breeding and migration. Eggs are deposited on milkweed plants which are the sole resource that caterpillars consume. In early spring, surviving individuals break diapause and mate at the overwintering sites before dispersing northward through the breeding grounds. These individuals then die, leaving their offspring to repeat the cycle. Several generations later, the last adults produced in late summer/fall begin the southward overwintering migration.

The project site is outside the monarch's known overwintering range and does not contain suitable overwintering habitat (i.e. tree groves). Focused surveys in 2023 and 2024 confirmed the presence of milkweed (a required host plant for larvae). No monarch butterflies were observed during field surveys. However, iNaturalist records confirm the species is present in the general region (iNaturalist 2025). The project site does offer potential foraging resources. Therefore, the monarch butterfly has a moderate potential to occur as an infrequent migrant and forager within and adjacent to the project site, but this species is not expected to overwinter or breed.

Special-Status Fish

The project site does not support suitable habitat for special-status fish, and none are expected to occur.

Special-Status Amphibians

California tiger salamander (*Ambystoma californiense*). The central California distinct population segment (DPS) of California tiger salamander, a federally and state threatened species, is covered under the EACCS. This species is endemic to central California, inhabiting vernal pool complexes in specific coastal and Central Valley counties, from Colusa south to Kern, and the coast ranges south to the Temblor Range. Their habitat has two key components: vernal pools and seasonal ponds for spawning, and adjacent upland areas featuring burrow complexes for shelter and refuge during dry summers and periods of inactivity. While rain pools used for spawning are the most obvious and best-known habitat for the species, the presence of ground squirrel and Botta's pocket gopher burrows in grasslands and sparse oak woodlands is far more important for the survival of individuals and colonies.

California tiger salamanders spend 80 to 90 percent of their year in these mammal burrows, which protect them from desiccation during the hot, dry season. They emerge on autumn and winter rainy nights to migrate to rain-filled spawning pools. Females lay

eggs singly or in small clusters on submerged plants. After spawning, adults quickly return to their burrows. Larvae develop in the pools, feeding on aquatic invertebrates, and metamorphose in late spring before the pools evaporate. Adults primarily eat terrestrial invertebrates and small vertebrates (NatureServe 2008).

This species is found in annual grassland, valley-foothill hardwood, and riparian habitats, breeding in vernal pools, ephemeral pools, stock ponds, and (infrequently) along streams and human-made water bodies if predatory fish are absent. The nearest documented occurrence is approximately 1.4 miles southwest, with numerous other records within five miles of the site (BIOS 2025k). The project site also occurs within the EACCS Conservation Zone 10 or designated as "CTS North" and is a high priority for the EACCS for protecting a substantial portion of potential breeding ponds within this area. The project site provides suitable upland refuge and dispersal habitat, consisting of grasslands and small mammal burrows.

Three aquatic features were assessed for habitat suitability for California tiger salamander: Patterson Run, a seasonal stream parallelling Patterson Pass Road, and two stock ponds (Pond 1 and Pond 2) located approximately 0.3 miles northwest of the project site. Of these aquatic features, the two ponds were determined to provide high-quality breeding habitat for California tiger salamander. Patterson Run lacked large pools suitable for breeding. Not all aquatic habitats within 1.24 miles were able to be surveyed due to access restrictions.

No California tiger salamanders were observed during field surveys or the habitat assessment, but this species is extremely difficult to detect without focused surveys. The grasslands within the project site and surrounding areas provide suitable upland refuge and migration habitat for this species. Therefore, California tiger salamander has a moderate potential to occur within and adjacent to the project site.

California red-legged frog (*Rana draytonii*). The California red-legged frog is a state Species of Special Concern, a federal threatened species, and is covered under the EACCS. The California red-legged frog historically ranged from Marin County southward to northern Baja California. It is locally abundant in portions of the San Francisco Bay area and along the Central Coast.

This species uses a variety of areas, including aquatic, riparian and upland habitats. They prefer aquatic habitats with little or no flow, the presence of surface water to at least early June, surface water depths to at least 2.3 feet, and the presence of fairly sturdy underwater supports such as cattails (*Typha* spp.). The largest densities of this species are typically associated with dense stands of overhanging willows and an intermixed fringe of sturdy emergent vegetation. The California red-legged frog typically breeds from January to July, with peak breeding occurring in February and March. Softball-sized egg masses are attached to subsurface vegetation, and hatched tadpoles require 11 to 20 weeks to metamorphose. Metamorphosis typically occurs from July to September.

The California red-legged frog uses both riparian and upland habitats for foraging, shelter, cover, and non-dispersal movement. Upland refugia may be natural, such as the species under boulders or rocks and organic debris (e.g. downed trees or logs), or human-made, such as certain industrial debris and agricultural features (e.g., drains, watering troughs, abandoned sheds, or stacks of hay or other vegetation); the California red-legged frog would also use small mammal burrows and moist leaf litter as refugia. Adults are predominantly nocturnal, while juveniles can be active at any time of day. Riparian habitat degradation, urbanization, predation by bullfrogs, and historic market harvesting have all reportedly contributed to the decline of the species.

Suitable upland refuge and dispersal habitat are present along with abundant grassland containing small mammal burrows. The nearest known occurrence is approximately 0.3 miles west of the project site, with numerous others within five miles. The project site also occurs within the EACCS Conservation Zone 10, designated as "CRLF South", and considered a high priority for protecting a substantial portion of potential breeding ponds within this area by the EACCS.

Three aquatic features were assessed for California red-legged frog habitat suitability: Patterson Run, a seasonal stream parallelling Patterson Pass Road, and two stock ponds (Pond 1 and Pond 2) located approximately 0.3 miles west of the project site. Of these, only Pond 2 was determined to offer high-quality breeding habitat, characterized by deep, perennial water, significant emergent vegetation (bulrush and alkali bulrush), and surrounding grazed grassland. Patterson Run was unsuitable due to absence of large pools and Pond 1 lacked adequate emergent or marginal vegetation. No California red-legged frogs were observed during field surveys or the habitat assessment. The entire project site is considered potential upland dispersal and foraging habitat for the species. Therefore, there is a high potential for California red-legged frog to occur within and/or adjacent to the project site.

Western spadefoot (*Spea hammondii*). The western spadefoot is proposed threatened under the ESA, is a state Species of Special Concern, and is not covered under the EACCS. The species occurs primarily in grasslands throughout California's Central Valley and adjacent foothills, extending into the Coast Ranges from Point Conception south to the Mexican border (Jennings and Hayes 1994). It is generally common where present and occupies elevations from near sea level to about 1,363 meters (Jennings and Hayes 1994). Optimal habitats are grasslands with shallow, temporary pools formed by heavy winter rains, though populations may also occur in valley-foothill hardwood woodlands and occasionally in orchards or vineyards (Stebbins 1972). These pools are essential for breeding, as egg masses are attached to submerged vegetation or rocks within them (Stebbins 1951). Rainfall plays a critical role in creating and maintaining these breeding sites, and most surface activity by adults coincides with rainy nights or periods of high humidity (Ruibal et al. 1969; Shoemaker et al. 1969).

For most of the year, western spadefoots remain underground in self-constructed burrows up to 0.9 meters deep, or in mammal burrows, where moist soil provides water through skin absorption during dry periods (Stebbins 1972; Ruibal et al. 1969). Recently metamorphosed juveniles seek cover near pond margins in drying mud cracks or beneath surface objects such as boards or decomposing cow dung (Weintraub 1980). Breeding occurs from late winter through March, with females laying numerous small clusters of eggs, often exceeding 500 in a season, that hatch within two weeks (Stebbins 1951). Tadpoles develop rapidly in temporary pools, feeding on plankton, algae, and even other amphibian larvae, before transforming and dispersing in late spring (Bragg 1964).

No western spadefoot were observed during field surveys. Vernal pools and ponds for breeding and egg-laying do not occur within the project site. The nearest known occurrence is approximately 3.6 miles to the southwest of the project site. Therefore, there is a low potential for western spadefoot to occur within the project site.

Special-Status Reptiles

Western pond turtle (*Actinemys marmorata*). The western pond turtle is a federally proposed threatened species and a state Species of Special Concern. It is closely tied to aquatic environments across California, west of the Sierra-Cascade crest, and is absent from most desert regions except along the Mojave River (Jennings and Hayes 1994). It thrives in permanent or nearly permanent water bodies such as ponds, lakes, slow-moving streams, irrigation ditches, and pools along intermittent streams, from sea level up to 4,690 feet (Jennings and Hayes 1994). These habitats must provide basking sites such as logs, rocks, mats of floating vegetation, or open mud banks where turtles regulate body temperature and escape quickly to underwater retreats when threatened (Stebbins 1972; Nussbaum et al. 1983). In colder climates, they typically hibernate in bottom mud, while in warmer areas, they may remain active year-round (Bury 1970, 1972).

The species' reproductive needs further shape habitat uses. Females often travel overland, sometimes more than 300 feet, to locate suitable nesting sites with soil at least 10 cm deep and high humidity for egg development (Storer 1930; Nussbaum et al. 1983). Hatchlings are highly vulnerable to desiccation, making consistent moisture critical for survival (Jennings and Hayes 1994). Nests occur in varied substrates, from sandy banks near streams to upland fields (Storer 1930; Nussbaum et al. 1983). Eggs are laid from March to August, with incubation lasting 73–80 days under optimal conditions (Ernst and Barbour 1972; Feldman 1982). While home ranges are generally small, occasional movements occur in response to drying water sources (Bury 1970, 1972).

San Joaquin coachwhip (*Masticophis flagellum ruddocki*). The San Joaquin coachwhip is a state Species of Special Concern and is not covered under the EACCS. This subspecies is endemic to California and its range extends from Arbuckle in the Sacramento Valley in Colusa County southward to the Grapevine in the Kern County

portion of the San Joaquin Valley and westward into the inner South Coast Ranges, and an isolated population occurs in the Sutter Buttes. It is found at elevations from 66 feet to around 2,953 feet (CDFW 2000).

San Joaquin coachwhip occurs in open, dry, treeless areas, including grassland and saltbush scrub, taking refuge in rodent burrows, under shaded vegetation, and under surface objects (CalHerps 2025). It is found in a variety of other habitats, including desert, chaparral, and pasture (CDFW 2000). San Joaquin coachwhip likely mate in May and lays eggs in early summer. Predators of this species include roadrunners and birds of prey (CDFW 2000). This species eats small mammals including bats, nestling and adult birds, bird eggs, lizards, snakes, amphibians, and carrion. Hatchlings and juveniles will eat large invertebrates (CalHerps 2025).

The project site hosts extensive grassland habitat and numerous small mammal burrows that provide suitable refuge for San Joaquin coachwhip. The nearest known historical occurrence, recorded in 1996, is approximately 0.4 miles northeast of the project site This species was not observed during field surveys. Therefore, San Joaquin coachwhip has a moderate potential to occur within the project site.

Coast horned lizard (*Phrynosoma blainvillii*). The coast horned lizard is designated as a state Species of Special Concern and is not covered under the EACCS. This species is found along the Pacific coast from Baja California to the Bay Area, and inland to the Sierra foothills. Stebbins (2003) concluded that coast horned lizard is nearly always the only horned lizard where it occurs, which typically includes more upland areas of sage scrub, woodland and chaparral habitats.

Coast horned lizards typically display courtship behavior between April and May and females lay one clutch of 6 to 20 eggs in early summer. Eggs are laid underground in a nest dug out by the female over several days (Pianka and Parker 1975). Hatchlings begin to appear in late July to early August. Like other horned lizards, these species are specialist predators of native ant species, particularly harvester ants (*Pogonomyrmex* spp. and *Messor* spp.).

Habitat degradation, caused by conversion to agriculture, urban, and suburban uses, continues to be the biggest threat to coast horned lizards. Fragmentation of habitat due to this development had been accompanied by the introduction of non-native ants, displacing native prey resources, and an increased density of medium sized predators including racoons, cats, and skunks that thrive in altered landscapes.

The project site hosts extensive grassland habitat; however, there are limited open areas for sunning and limited loose sandy soils available. The nearest known historical occurrence, recorded in 1992, is approximately 1.9 miles to the southeast of the project site. This species was not observed during field surveys. Therefore, there is a low to moderate potential for coast horned lizard to be present in the project site.

Special-Status Birds

Cooper's hawk (*Accipiter cooperii*). The Cooper's hawk is a state Watchlist species and is not covered under the EACCS. The species is a common, year-round resident throughout Alameda County. This species favors areas with dense stands of trees, including live oak, riparian and mixed forests or woodlands, often near water.

Suitable open grassland areas are present in the project area for foraging; however, the project site provides only low-quality nesting habitat. The nearest known occurrence is approximately 1-mile away. This species was not observed during surveys. Therefore, there is a low potential for Cooper's hawk to nest and a moderate potential for the species to forage within and adjacent to the project site.

Tricolored blackbird (*Agelaius tricolor*). Tricolored blackbird (nesting colony) is a state threatened listed species and is covered under the EACCS. Tricolored blackbird nests colonially near freshwater, often in emergent wetlands or cattail or tule, but will also nest in dense, thorny vegetation such as Himalayan blackberry (*Rubus armenicus*) or thistles such as *Cirsium* spp. or *Silybum* spp. The species is known to forage in grasslands, woodlands, and in agricultural areas.

This species was observed during the field survey on January 18, 2024, foraging in the grassland within the gen-tie buffer area. The project site occurs within the EACCS Conservation Zone 10, or designated as "Altamont Hills", and identified as a priority area for the protection of large areas of open grassland (EACCS 2010).

Although tricolored blackbirds were observed foraging on the project site, it is unlikely this species would form a nesting colony as there is no suitable nesting habitat present. An area of low-quality wetland habitat is present at a stock pond approximately 0.5 miles west of the project site, however, it is likely too small to sustain a nesting colony (approximately 0.21 acre). Therefore, it is assumed that tricolored blackbirds are not likely to breed in the project site but are present as foraging individuals within and adjacent to the project site.

Grasshopper sparrow (*Ammodramus savannarum*). The grasshopper sparrow is a state Species of Special Concern and is not covered under the EACCS. It is a small, secretive songbird of open grasslands, breeding across much of North America from southern Canada to the central and eastern United States, with disjunct populations extending south to parts of Mexico and Central America (Vickery 1996). In California, it is an uncommon and local summer resident and breeder in foothills and lowlands west of the Cascade-Sierra Nevada Crest, from Mendocino and Trinity Counties south to San Diego County (Dobkin et al. 2008). It occupies dry, dense grasslands with a mix of grasses and forbs and scattered shrubs for singing perches.

The species is partly migratory with most individuals departing by September, and winter status in California poorly understood, though it appears to occur rarely and irregularly, mostly along the southern coastal slope (Grinnell and Miller 1944; Unitt

2004). Occurrences in the Mojave Desert are extremely rare and limited to migration periods, as suitable grassland habitat is largely absent (Dobkin et al. 2008). Nests are constructed on the ground in a slight depression, concealed at the base of overhanging grasses or forbs. Although there is open grassland present the project site lacks suitable shrubs for perching. Therefore, there is a low potential for this species to occur.

Short-eared owl (*Asio flammeus*). The short-eared owl is a state Species of Special Concern and is not covered under the EACCS. This species is a medium-sized owl that grows to a height of 16 inches (41 centimeters) (Wiggins et al. 2020). As its name suggests, it has very short ears that are difficult to distinguish atop its rounded head. Males and females have similar plumage with patches of brown and buff occurring mostly on the back side while the underside is colored more lightly, being mostly white.

Short-eared owls are usually silent but will sometimes exhibit a variety of barks, hisses, and squeals within breeding territories. The overall range of short-eared owl generally spans the entire United States while breeding occurs in areas of northern California across to central Missouri and then up to the Great Lakes area and all areas north. All areas in the United States south of the breeding range are within the wintering or non-breeding range of short-eared owl. Breeding typically occurs between March and July and nesting birds require open country that supports concentrations of microtine rodents (i.e., voles) and herbaceous cover sufficient to conceal their ground nests from predators (Holt and Leasure 1993). Suitable breeding habitats include salt- and freshwater marshes, irrigated alfalfa or grain fields, and ungrazed grasslands and pastures. Influxes of birds from northern breeding grounds occur between late October and early March (Fisler 1960; Garrett and Dunn 1981).

In the winter, this species can be most often found in open grasslands, stubble fields, small meadows, coastal dunes, and shrubby areas where there is a higher abundance of prey resources. Short-eared owls are primarily crepuscular hunters meaning they typically hunt during the twilight hours of dawn and dusk (Holt and Leasure 1993). Their diet is greatly weighted towards small mammals, and in California, the species is particularly attuned to the three-to-four year cycle of the California vole (Microtus californicus) (Krebs 1966). However, short-eared owls will resort to other prey when vole numbers are diminished (Fisler 1960). Current threats to short-eared owls include habitat loss and degradation, aggravated to an unknown extent by grazing, invasive exotic weeds, water management, and disease. Although there is suitable grassland habitat present for nesting and foraging, the project site is at the edge of the known current breeding range in California. The nearest historical occurrence was from 1995 approximately 2.6 miles to the south of the project site. Therefore, there is a low potential for this species to occur.

Golden eagle (*Aquila chrysaetos*). The golden eagle is considered a special-status species in California. It is protected by the federal MBTA and the Bald and Golden Eagle Protection Act. This species is also protected by California Fish and Game Code and is a Fully Protected species by the State of California. It is considered a Species of Special

Concern by CDFW and is covered under the EACCS. Within California, the golden eagle is a year-round resident generally inhabiting mountainous and hilly terrain throughout open areas. The primary existing threats to golden eagle survival throughout its range include loss or alteration of both foraging and nesting habitat. Human disturbance of nesting birds and fatalities caused by contact with infrastructure (e.g. power facilities, buildings, fences, wind turbines) also pose threats to this species. Alameda County supports a relatively large population of nesting golden eagles and are heavily researched within the region (EACCS 2010, USGS 2021, USGS 2023). The golden eagle is a covered focal species under the EACCS, which has the goal of maintaining the nesting golden eagle population in the study area at a level that allows for long-term viability without human intervention.

Golden eagle habitat in central California consists mainly of open grasslands and oak savanna interspersed with oak and shrub woodlands. The eagles in this area nest predominantly in large, mature oak (*Quercus* spp.) and eucalyptus (*Eucalyptus* spp.) trees (Peeters and Peeters 2005), utilizing nearby open areas for foraging mostly on ground squirrels (Hunt et al. 2017). California breeding populations are largely sedentary, occupying and defending territories year-round. Evidence collected to date suggests that relatively few northern migrants winter in California (Goodrich and Smith 2008; McIntyre et al. 2008), probably due in part to high densities of year-round residents in many areas of the state (Hunt 2002). Even in areas where established breeders are primarily sedentary, young birds may wander extensively (Kochert et al. 2020). Golden eagles exhibit high breeding site fidelity throughout their range. Data on natal dispersal distances are sparse, but USFWS (USFWS 2016) established a radius of 109 miles as the scale required for inferring local population effects based on natal dispersal distances. Evidence collected to date also suggests that migratory eagles, at least adults, tend to show high winter site fidelity as well.

Based on historical studies within the region, this area has some of the densest populations of eagles known and very high golden eagle use (USGS 2021). Local populations are supplemented by winter visitors, although territorial nesting pairs remain in and defend their territory year-round (Hunt et al. 2017). The Diablo Range is generally characterized as having a relatively high density of territorial breeding pairs with approximately 280 breeding pairs present (USGS 2014). The population size within the Altamont Pass Wind Resource Area (APWRA) is stable with about 330 individuals; however, genetic and isotopic data indicate that a large portion of golden eagles killed by wind turbines within the APWRA come from far outside the region. This suggests that the apparent population stability is due to sustained immigration of eagles from elsewhere in North America, and mortality from wind turbines in addition to other sources of mortality (e.g., lead poisoning, electrocution, and drought) have created an ecological sink in the APWRA (Katzner et al. 2016). The project site occurs within the EACCS Conservation Zone 10 or designated as "Altamont Hills" and is a priority for the EACCS for protecting large areas of open grassland (EACCS 2010).

Golden eagles are known to construct nests in previously used sites or new locations in the region. Courtship in this region begins December 15 and breeding season ends August 31. Ongoing eagle surveys in the APWRA, which overlap with the project site, provide well detailed data for this species. There are two known nests and territories documented within 2 miles of the project site, the "Midway Pair" and the "Jess Ranch Pair". The Midway Pair has been documented approximately 1-mile south of the project site; and the Jess Ranch Pair approximately 0.6 miles north of the project site. The Midway Pair utilizes a nest in riparian vegetation along Patterson Run and Patterson Pass Road and have been observed consistently returning to the nest year after year (USGS 2023). The applicant's biologists documented the Midway Pair's stick nest during preliminary eagle surveys in January 2025, and observed the pair perched adjacent to the nest on April 28, 2025. The Jess Ranch Pair was observed beginning construction on a nest in a transmission tower in 2022, but the nest was blown down and failed the same year. The pair did not return to the nest site in 2023, and no nest was observed during the January or April 2025 follow-up surveys (Dudek 2025iii).

In addition, the proposed mitigation site adjacent to the proposed project has documented that golden eagles are viewed nearly every year during the winter and early spring season foraging on California ground squirrels and black tailed hares, and other wildlife prey; however, no nesting habitat occurs on the proposed mitigation site (Dudek 2025ppq).The abundance of ground squirrels in the Altamont area and the project area combined with the grazing practices makes the Altamont and the project site high quality foraging habitat. In drought years, the grasses and ground squirrel populations can be reduced; however, the extensive amount of studies in the region support the opinion that the project site provides high-quality year-round foraging. Transmission towers and trees within 1-mile of the project site provide potential nesting habitat. The only trees within the project site capable of supporting golden eagle nests are found in the low-lying area along Patterson Run; these trees are relatively short and do not provide ideal nesting habitat. No golden eagles were observed within the project site during surveys. Therefore, golden eagles have a high potential to forage and a moderate to high potential to nest within and adjacent to the project site.

Western burrowing owl (*Athene cunicularia*). The western burrowing owl is currently designated as a candidate species under the CESA and is covered under the EACCS. As a candidate species, it receives the same protection as if it were listed as threatened or endangered until the California Fish and Game Commission makes a final determination on its status. It is also protected under the federal MBTA and California Fish and Game Code.

The burrowing owl is a covered focal species under the EACCS, which has the goal of increasing the burrowing owl nesting population (number of nesting pairs) and number of nesting locations in the conservation area. The project area is located within the EACCS Conservation Zone (CZ) 10, which has been identified as an important nesting area for burrowing owls. Unfortunately, due to the presence of wind power facilities, there are limited mitigation opportunities for this species within CZ10 (EACCS 2010).

EACCS Goal 19 seeks to protect burrowing owls by avoiding direct impacts to individuals and nests (Objective 19.1), minimizing loss of breeding and non-breeding habitat (Objective 19.2), and protecting and monitoring nest sites and associated foraging habitat (Objective 19.3) through implementation of avoidance measures identified in Tables 3-2 and 3-3 of the EACCS (EACCS 2010).

Under Objective 19.3, Conservation Actions BUOW-1 through BUOW-5 of the EACCS provide for acquisition and protection of occupied and historically used burrowing owl nesting habitats, mitigation of nesting habitat loss within 0.5 mile of known nests, and implementation of coordinated monitoring and survey programs. Under Objective 19.4, Conservation Actions BUOW-6 through BUOW-8 focus on enhancing suitable habitat on public and private lands through conservation easements, compatible agricultural and grazing practices, incentive-based ground squirrel management using IPM principles, and reduced use of rodenticides to support long-term burrowing owl conservation.

Burrowing owls are year-round residents throughout much of California occurring in open, dry grassland, and desert habitats and in forb and open shrub stages of pinyon juniper and ponderosa pine habitats. Breeding season is March to August but can begin as early as February and extend into December. Burrowing owls are unique among the North American owls in that they nest and roost in abandoned burrows, especially those created by California ground squirrels, kit fox, and other wildlife. Burrowing owls have a strong fidelity for previously occupied nesting and wintering habitats and often return to burrows used in previous years, especially if they were successful at reproducing there in previous years (Gervais et al. 2008). Threats to burrowing owl include habitat loss, predation, roadkill, reduced burrow availability due to rodent control, and pesticides. Suitable habitat is present throughout the project area.

There are three historical documented occurrences of burrowing owl within or adjacent to the project site, with numerous other additional records within a 10-mile radius. Focused, protocol-level burrow surveys were conducted within the project site to identify animal burrows, specifically targeting the burrowing owl. No western burrowing owls or their sign were observed during any field surveys. Although there is abundant grassland habitat within the project site it is only considered moderately suitable for burrowing owls. This is due to the lack the extensive ground squirrel burrows and short, sparse vegetation that the species prefers. Most burrows found during surveys were small and unsuitable for occupation. Superior quality habitat, characterized by grazed, low vegetation with active ground squirrel colonies, was observed nearby in the surrounding areas. Therefore, western burrowing owls are assumed to be present and could occur during breeding and non-breeding seasons within and adjacent to the project site.

Ferruginous hawk (*Buteo regalis*). Ferruginous hawks are classified as a state Watch List species and are not covered under the EACCS. Ferruginous hawks are open-country birds that breed in grasslands, sagebrush, saltbush-greasewood shrublands, and edges of pinyon-juniper forests at low to moderate elevations. Breeding habitat

includes features such as cliffs, outcrops, and tree groves for nesting. They spend winter in grasslands or deserts with abundant rabbits, pocket gophers, or prairie dogs but also in agricultural country, including over plowed fields and utilize lone trees, fence posts, powerline polies, and rocky outcrops to perch and wait for prey. This species is a winter resident in California from August to early March.

Suitable open grassland is present for foraging. The nearest known CNDDB occurrence is approximately 2.7 miles from the project site. However, iNaturalist reports a 2023 sighting within 0.4 miles to the southwest of the project site. No ferruginous hawks were observed during surveys. Therefore, ferruginous hawk is not expected to nest or breed within or adjacent to the project site, but the species has a moderate potential to forage and occur during migration periods and as a winter resident.

Swainson's hawk (*Buteo swainsoni*). Swainson's hawk are listed as a threatened species under the CESA and are not covered under the EACCS. The species requires large areas of open landscape for foraging such as grasslands and agricultural lands that provide low-growing vegetation for hunting and high rodent prey populations such as ground squirrels, gophers, mice, voles, and rabbits. They will also eat bats, snakes, lizards, and birds. This species typically nests in large solitary tree or in a small grove of trees such as valley oak (*Quercus lobata*), cottonwood (*Populus fremontii*), walnut (*Juglans hindsii*), and willow (*Salix* spp.), and occasionally in non-native trees, such as eucalyptus (*Eucalyptus* spp.). These nests are found within riparian woodlands, along roadsides, trees along field borders, isolated trees, small groves, and on the edges of remnant oak woodlands. Currently, the most significant threat to the remaining Swainson's hawk population in California is habitat loss due to residential and commercial development (CDFW 2016).

The project site provides low potential for Swainson's hawk nesting due to a lack of suitable nesting trees; however, it offers a moderate potential for foraging within open grassland habitat. Potential nesting habitat, primarily in mature trees within developed areas, is present within 0.5 miles of the project site.

Although the nearest CNDDB documented occurrence is approximately 3.7 miles away, recent data found in eBird has identified sightings in the vicinity. Numerous eBird sightings over the past five years document active use of the area east and northeast of the PG&E Tesla Substation, along Midway and Patterson Pass Roads. This includes a reported sighting of an individual perched in a cottonwood tree along Patterson Run within the project site. The most recent eBird reported sighting in 2025 was within 1.2 miles to the southwest of the project site (eBird 2025). Therefore, Swainson's hawks are not expected to nest within or adjacent to the project site but have a moderate potential to forage or occur during seasonal migration periods.

White-tailed kite (*Elanus leucurus*). White-tailed kite is a state Fully Protected species that is not covered under the EACCS. This species is common in savannas, open woodlands, marshes, grasslands, partially cleared lands, and cultivated fields. This

species is a yearlong resident in coastal and valley lowlands, especially in agricultural areas. Nests near tops of oak, willow, or other tree stands that are located near open foraging areas.

Suitable open grassland is present with a few scattered cottonwood trees (*Populus* sp.) suitable for nesting. The nearest documented occurrence is approximately 3.7 miles south of the project site. No white-tailed kites were observed during surveys. Therefore, there is a moderate potential for this species to nest and forage within and adjacent to the project site.

California condor (*Gymnogyps californianus*). California condor is federally and state listed as endangered under the ESA and CESA, respectively. It is also a state Fully Protected species and is not covered under the EACCS. By 1987, the entire California condor population consisted of 27 individuals, and all were housed in two captive breeding facilities in southern California. As of December 2024, the total population consists of 566 birds with 214 being captive and 369 being wild (CDFW 2025). Reintroduced populations are currently centered around central California (the Big Sur area and Pinnacles National Park), southern California, northern Arizona, southern Utah, and Baja, Mexico.

This species uses vast expanses of varying habitats for nesting, roosting, and foraging. Nests typically occur in caves or on ledges of cliff faces or on broken tops of old growth conifers in mountains up to 6,000 feet (1,828 meters) in elevation (Polite 1990). Due to their large size, high perches are preferred for easier take-offs during flight. California condors face many ongoing threats in the wild, including habitat loss, oil and gas drilling, shooting, and collisions with power lines. They are constantly contracting lead poisoning from bullet-killed carcasses that are scavenged and must be regularly recaptured for monitoring and treatment.

Loggerhead shrike (*Lanius ludovicianus*). Loggerhead shrikes are a state Species of Special Concern and are not covered under the EACCS. The species breeds widely throughout the United States except portions of the northwest, northeast, and at higher elevations. This species is present year-round throughout most of its California range. Loggerhead shrikes are common during winter in foothills and lowlands throughout California. Shrikes occur rarely in heavily urbanized areas but are often found in open cropland and sometimes use edges of denser habitat (Granholm 1990).

Nests are placed in shrubs or trees at variable heights above ground, generally between 3 to 6 feet. Tall structures, including vegetation, fences, or power lines, are required for hunting perches as well as cache sites for impaling, manipulating, or storing prey. The diet varies seasonally and includes arthropods, reptiles, amphibians, small rodents, and birds (Craig 1978; Yosef 1996). Although there is suitable grassland habitat present for foraging, the project site has limited perches and lacks scattered shrubs or brush for nesting. The nearest historical occurrence was from 2015 approximately 3.9 miles to the west of the project site. Therefore, there is a low potential for this species to occur.

Special-Status Mammals

Pallid bat (*Antrozous pallidus*). The pallid bat is a state Species of Special Concern and is not covered under the EACCS. It is a large, pale-colored bat that occurs in arid and semi-arid regions of western North America, from British Columbia and central Mexico west to California and east to Texas. It is most common in desert basins and foothills with rocky outcrops and sparse vegetation (Hermanson and O'Shea 1983). In California, pallid bats are widespread in low-elevation deserts, grasslands, and oak woodlands, occurring from the Mojave and Colorado Deserts north through the Central Valley and into foothill habitats. This species is generally non-migratory and active year-round in mild climates, though some individuals may enter short periods of torpor during cold weather.

They primarily feed on large ground-dwelling arthropods, such as crickets, beetles, and scorpions, which they capture by landing and gleaning from the substrate. Pallid bats were detected during acoustic surveys conducted for the Alameda-Tesla property approximately 4 miles to the southwest of the project site. Suitable grassland habitat is present for foraging; however, the project site has limited trees or structures for roosting. In addition, a recent wildlife damaged the trees within the project site. Therefore, there is a low potential for this species to occur.

Hoary bat (*Lasiurus cinereus*). The hoary bat is not classified as special status under any state or federal law or agency, nor is it covered under the EACCS. It is the most widespread North American bat and may be found throughout California. This solitary species winters along the coast and in southern California, breeding inland and north of the winter range. During migration, individuals may occur far outside their normal range, including the Channel Islands and Farallon Islands (Brown 1980; Tenaza 1966). Habitats suitable for bearing young include woodlands and forests with medium to large trees and dense foliage, and the species has been recorded from sea level to 13,200 feet (Harris 1990). Hoary bats prefer open habitats or habitat mosaics that provide access to trees for cover and open areas or edges for feeding.

Roosting typically occurs in dense foliage of medium to large trees, in sites hidden from above with few branches below and low-reflectivity ground cover. Females and young tend to roost higher in trees. Foraging occurs in open areas, and the species feeds primarily on moths, though other flying insects are also taken (Harris 1990). Breeding occurs while roosting in trees, with females bearing young from mid-May through early July. Seasonal movements include long-distance migrations between summer and winter ranges, with spring migration occurring February through May and fall migration from September through November (Harris 1990).

Suitable grassland habitat is present for foraging; however, the project site has limited trees and lacks dense foliage for roosting. In addition, a recent wildfire damaged the trees within the project site. Therefore, there is a low potential for this species to occur.

San Joaquin pocket mouse (*Perognathus inornatus*). San Joaquin pocket mouse is not classified as special status under any state or federal law or agency, nor is it covered under the EACCS. Occurs in California's Central Valley, including the San Joaquin and Salinas valleys. This species favors arid grasslands and shrublands with fine soils. Habitat loss from development has reduced its range, with subspecies listed as Sensitive by CDFW, indicating concern in areas like Alameda County where suitable habitat remains.

San Joaquin pocket mouse is a nocturnal rodent that easts seeds and insects, stores food in burrows, and needs undeveloped areas with sandy or fine soils for nesting. No San Joaquin pocket mice were observed during field surveys. The nearest known historical occurrence from 1992 is approximately 2 miles to the northeast of the project site. Therefore, there is a low potential for this species to occur.

American badger (*Taxidea taxus*). The American badger, a state Species of Special Concern and covered under the EACCS, were once widespread throughout open grassland habitats of California. This species is now an uncommon permanent resident with a wide distribution across California, except from the North Coast area. American badgers inhabit burrows and often predate and forage on other small mammal burrows as evidenced by claw marks along the edges of existing burrows. This species is most abundant in the drier open stages of most shrub, forest, and herbaceous habitats with friable soils. It prefers habitats such as cropland, desert, grassland, savanna, and shrubland/chaparral. This species is generally associated with treeless regions, prairies, parklands, and cold desert areas (CDFW 2025f). American badger feed mainly on various species of small mammals and capture some of its prey above ground foraging on birds, eggs, reptiles, invertebrates, and carrion.

The nearest documented occurrences are approximately 0.2 miles north and south, with multiple other records within 10 miles of the project site. There is suitable dry open grassland present with evidence of friable soils and burrowing activity near Patterson Pass Road. No badgers or their sign were observed during focused burrow surveys. Based on the presence of suitable habitat and documented inactive burrows, American badger have a high potential to occur within and adjacent to the project site and are assumed to be present.

San Joaquin kit fox (*Vulpes macrotis mutica*). The San Joaquin kit fox is federally endangered and state-threatened species and covered under the EACCS. The species is found in the deserts and grasslands of the San Joaquin Valley. It inhabits alkali sink, valley grasslands, and woodlands with minimal shrubs and grasses, primarily in the southern and western valley, foothills, and areas like the Carrizo Plain, as well as the Panoche Valley and Cuyama Valley in San Luis Obispo County. Within the San Joaquin Valley its range extends from southern Kern County north to Contra Costa, Alameda, and San Joaquin counties on the western side of the valley and to the La Grange area of Stanislaus County on the eastern side of the valley. Historically widespread, its range has significantly declined since 1930 (USFWS 2008).

The kit fox is a nocturnal, opportunistic hunter, primarily feeding on kangaroo rats but will also prey on white-footed mice, pocket mice, ground squirrels, rabbits, ground-nesting birds, and during certain times of the year, they will also eat insects. It rests in dens during the day to escape the heat and their dens also provide shelter and cover from predators. Kit foxes either dig their own dens, use those constructed by other animals, or use human-made structures such as culverts, abandoned pipelines, or banks in sumps or roadbeds.

There are numerous CNDDB occurrences for San Joaquin kit fox within 10 miles of the project site. The nearest recorded occurrence is approximately 0.3 miles southwest of the project site. The project site falls within the EACCS Conservation Zone 10 for San Joaquin kit fox or "San Joaquin kit fox East." The EACCS indicates that this area likely supports connectivity through the Altamont Hills for kit fox; however, connectivity across I-580 has been compromised by existing infrastructure development (EACCS 2010).

Habitat within the project site consists of moderate quality annual grassland suitable for San Joaquin kit fox. No San Joaquin kit fox were observed during field surveys. Several large burrow tailings were observed during burrow surveys on the eastern side of the project site along Patterson Pass Road, with evidence of highly suitable soils for burrowing. Therefore, San Joaquin kit fox has a high potential to occur within the project area and could be present during any time of year.

Regulatory

Federal

Endangered Species Act (16 U.S.C. § 1531 et seq., and 50 C.F.R., part 17.1, et seq.). The federal Endangered Species Act (ESA) designates and provides for protection of threatened and endangered plant and animal species, and their critical habitat. Its purpose is to protect and recover imperiled species and the ecosystems on which they depend. It is administered by the USFWS and the National Marine Fisheries Service. The USFWS is responsible for terrestrial and freshwater organisms while National Marine Fisheries Service is responsible for marine wildlife. Species may be listed as endangered or threatened. All species of plants and animals, except pest insects, are eligible for listing. Species are defined to include subspecies, varieties, and for vertebrates, distinct population segments. The ESA protects endangered and threatened species and their habitats by prohibiting the "take" of listed animals and the interstate or international trade in listed plants and animals, including their parts and products, except under a federal permit. "Take" is broadly defined in the ESA to include "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct" (16 U.S.C., § 1532 [19]). Take can also include significant habitat modification or degradation that directly results in death or injury to a listed wildlife species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 C.F.R., § 17.3). Take of federally listed species as defined in the ESA is prohibited without incidental take authorization, which may be

obtained through Section 7 consultation (between federal agencies) or a Section 10 Habitat Conservation Plan. The administering agencies are the USFWS, National Oceanic Atmospheric Administration (NOAA), and NMFS.

Bald and Golden Eagle Protection Act (16 U.S.C., §§ 668–668c). The Bald and Golden Eagle Protection Act (BGEPA), prohibits the "taking" of bald and golden eagles, including their parts, nests, or eggs. "Take" is defined as to "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb" any bald or golden eagle, whether "alive or dead...unless authorized by permit" (16 U.S.C., § 668(a)). The USFWS has authority and responsibility for enforcing the BGEPA.

Migratory Bird Treaty Act (16 U.S.C., §§ 703–711). The Migratory Bird Treaty Act (MBTA) makes it illegal to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, any migratory bird or other parts, nests, or eggs of such a bird except under the terms of a valid federal permit. The USFWS has authority and responsibility for enforcing the MBTA.

Noxious Weed Act of 1974 (7 U.S.C. §§ 2801 et seq.). The Noxious Weed Act established a national framework for controlling and eradicating non-native plant species deemed harmful to agriculture, ecosystems, and public health. It authorizes the Secretary of Agriculture to regulate the movement of noxious weeds, enforce quarantines, and implement integrated management systems for federally managed lands.

Executive Order 13112. Executive Order 13112, issued in February 1999, established the National Invasive Species Council and directed federal agencies to prevent the introduction and spread of invasive species as part of federal actions. It requires agencies to identify, control, and monitor invasive species, and to avoid actions likely to cause or promote their spread, while coordinating efforts across departments and with stakeholders.

Clean Water Act Sections 401 and 404 (33 U.S.C., §§ 1251–1376). The Clean Water Act requires the permitting and monitoring of all discharges to surface water bodies. Section 404 (33 U.S.C. § 1344) requires a permit from the USACE for a discharge from dredged or fill materials into a water of the United States, including wetlands. Section 401 (33 U.S.C. § 1341) requires a permit from the RWQCB for the discharge of pollutants. By federal law, every applicant for a federal permit or license for an activity that may result in a discharge into a California water body, including wetlands, must request state certification that the proposed activity would not violate state and federal water quality standards.

State

California Endangered Species Act (Fish and G. Code, §§ 2050–2098). The California Endangered Species Act (CESA) of 1984 states that all native species of plants, invertebrates, fish, amphibians, reptiles, birds, and mammals, and their habitats,

threatened with extinction and those experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation, will be protected and preserved. CESA prohibits the take of any species of wildlife designated by the California Fish and Game Commission as endangered, threatened, or candidate species. The CDFW may authorize the take of any such species if certain conditions are met. These criteria are listed in Title 14 of the California Code of Regulations, Section 783.4, subdivisions (a) and (b). For purposes of CESA, "take" means to hunt, pursue, catch, capture, or kill (California Fish and G. Code § 86). For projects under the exclusive jurisdiction of the CEC, incidental take authorization may be granted through the CEC's certification instead of ("in lieu of") a take permit issued by CDFW.

Fully Protected Species (Fish and G. Code, §§ 2081.15, 3511, 4700, 5050, and 5515). These sections designate certain species as fully protected and prohibit the take of such species or their habitat unless for scientific purposes (see also Cal. Code Regs., tit. 14, § 670.7). The incidental take of fully protected species may also be authorized in an approved natural community conservation plan (California Fish and Game Code, § 2835) or by state legislation related to some renewable energy projects.

Senate Bill No. 147, effective as of July 10, 2023, amends California Fish and Game Code Sections 3511, 4700, 5050, and 5515 and adds Section 2081.15. This legislation allows CDFW to issue incidental take permits for fully protected species under specific and limited circumstances, including photovoltaic (PV) solar projects and related infrastructure. Under the Warren-Alquist Act, the CEC has in-lieu permitting authority to issue the incidental take authorization if project activities would impact state-listed species.

California Migratory Bird Protection Act (Fish and G. Code, § 3513). The California Migratory Bird Treaty Act (CMBTA) permanently prohibits the taking or possession of migratory birds, their nests, or eggs. It applies to all species listed under the federal Migratory Bird Treaty Act as of January 2, 2025, as well as any species added to the federal list after that date. A violation of this section of the California Fish and Game Code constitutes a crime.

Bird, Nest, and Eggs Protection. The following California Fish and Game Code sections designate protections for birds and/or their nests or eggs. The administering agency is CDFW.

- Section 3503: Makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.
- Section 3503.5: Makes it unlawful to take, possess, or destroy any birds in the order Falconiformes and Strigiformes or to take, possess, or destroy the nest or eggs of any such bird.
- Section 3800: All birds occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds, are nongame birds. Makes it

unlawful to take any nongame bird except as provided in this code or in accordance with regulations of the commission or, when relating to mining operations, a mitigation plan approved by the department.

Furbearing and Mammal Protection. Regulations are in place protecting furbearing mammals as follows:

- California Fish and Game Code Section 251.1 prohibits the harassment of any furbearing mammal. Harass is defined as an intentional act that disrupts animals' normal behavior patterns, which includes, but is not limited to, breeding, feeding, or sheltering.
- California Code of Regulations, Title 14, Section 460 states that fisher, marten, river otter, desert kit fox, and red fox may not be taken at any time.

Native Plant Protection Act (Fish and G. Code, §§ 1900–1913). The Native Plant Protection Act (NPPA) was enacted in 1977 and directed the California Fish and Game Commission to carry out the Legislature's intent to "preserve, protect, and enhance rare and endangered plant in the State." The NPPA gave the Commission the Power to designate native plants as "endangered" or "rare" and protect endangered and rare plants from take. The NPPA thus includes measures to preserve, protect, and enhance rare and endangered native plants.

The CESA has largely superseded the NPPA for all plants designated as endangered by the NPPA. The NPPA nevertheless provides limitations on take of rare and endangered species as follows: "no person will import into this state, or take, possess, or sell within this state" any rare or endangered native plant except in compliance with provisions of the CESA. Individual landowners are required to notify CDFW at least 10 days in advance of changing land uses to allow CDFW to salvage any rare or endangered native plant material.

California Lake and Streambed Alteration Notification/Agreement (Fish and G. Code, §§ 1602 et seq.). These sections stipulate that an entity shall not substantially divert or obstruct the natural flow of, or substantially change or use any material from, the bed, channel, or bank of any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. Under the Warren Alquist Act, the CEC has in-lieu permitting authority to issue the Lake and Streambed Alteration Agreement if project activities would result in impacts to CDFW jurisdictional streambeds and riparian habitats.

Porter-Cologne Water Quality Control Act (California Water Code Division 7). The State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs) have jurisdiction over all surface water and groundwater in California, including wetlands, headwaters, and riparian areas.

Local

The following local laws, ordinances, and regulations apply to projects that occur within the County of Alameda and East Alameda County Conservation Strategy.

East Alameda County Conservation Strategy. The County of Alameda (County) developed the East Alameda County Conservation Strategy (EACCS) to provide a framework for natural resource conservation and to streamline the environmental permitting process within the eastern portion of the county (EACCS 2010). The EACCS is not a formal Habitat Conservation Plan (HCP) in that it does not require local agencies to conserve species and habitat prior to approving projects that impact listed species and/or their habitat; however, it does have a corresponding programmatic incidental take permit from USFWS. The EACCS is intended to streamline state and local permitting by providing guidance on avoidance, minimization, and mitigation for project-level impacts on selected focal special-status species and sensitive habitats.

Individual projects may need to implement different or more avoidance, minimization, and mitigation measures than what is outlined in the strategy if the species is not covered by the programmatic incidental take permit. To avoid this potential inconsistency, USFWS and CDFW participated in the development of the EACCS with the intent that it serve as the blueprint for all mitigation and conservation in the region. Both agencies continue to reference the EACCS when reviewing project-level impacts on focal species and their habitat.

The EACCS includes standardized mitigation ratios for each of the focal species that can be used by local jurisdictions and resource agencies as guidance to determine appropriate mitigation to offset project impacts on focal species habitat. These ratios are based on an evaluation of the habitat quality within a Study Area and scored using Focal Species- Impact/Mitigation Score Sheets for each of the focal species assumed present or potentially present. Mitigation ratios are then calculated based on application of the same scoring sheet to the proposed mitigation site. Project specific mitigation ratios may vary depending on the quality and location of the habitat being lost and the quality and location of proposed mitigation.

The EACCS includes avoidance and minimization measures (AMMs) for all focal species covered by the EACCS. These include general AMMs applicable to all focal species, as well as species- or taxon-specific AMMs.

Alameda County General Plan. The Alameda County General Plan provides guidelines for development within Alameda county. The project area is located within the East County Area Plan (ECAP) (Alameda County 1994). The administering agency is the Alameda County Community Development Agency Planning Department (County). General Plan policies that are relevant to the project are as follows:

Policy 123. Where site-specific impacts on biological resources resulting from 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 land adjacent to or otherwise contiguous with these lands to establish a continuous open space system in East County and to provide for long term protection of biological resources.

Policy 125. The County shall encourage preservation of areas known to support special status species.

Policy 126. The County shall encourage no net loss of riparian and seasonal wetlands.

Alameda County Code of Ordinances. The Alameda County Code of Ordinances includes regulations governing the protection and management of watercourses within the County (Alameda County 2025). Chapter 13.12 (Watercourse Protection) establishes permitting requirements for activities that could alter or impact watercourses. A permit from the Director of Public Works is required for actions such as discharging into or connecting pipes or channels to a watercourse, modifying natural flow, conducting development within a watercourse setback, depositing or removing materials within a watercourse or its banks, constructing or altering structures in a watercourse, or placing loose or unconsolidated materials that could divert flows or be transported by stormwater.

Cumulative

Under CEQA, cumulative impacts are defined as past, present, and reasonably foreseeable future projects that, when viewed in connection with the proposed project, cause its effects on biological resources to be potentially significant. The proposed project is in Alameda County. This analysis considers biological resources within the Central Valley and San Joaquin Valley region, focusing on sensitive species, habitat connectivity, and ecosystem sustainability.

The geographic scope of this cumulative impact analysis includes portions of San Joaquin and Alameda Counties, including the cities of Tracy and Mountain House that provide habitat for special-status species, including Swainson's hawk, golden eagle, burrowing owl, San Joaquin kit fox, American badger, California tiger salamander, California red-legged frog, and golden eagle among others. See **Appendix A, Table A-1**, for the existing, approved, pending, and proposed projects that could combine with the proposed project to result in cumulatively considerable impacts.

5.2.2 Environmental Impacts

BIOLOGICAL RESOURCES Would the project:	**Significant and Unavoidable Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local	☐	☒	☐	☐

BIOLOGICAL RESOURCES Would the project:	**Significant and Unavoidable Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?				
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c. 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?	☐	☒	☐	☐
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☒	☐	☐
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☒	☐	☐

Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix. G, biological resources.

5.2.2.1 Methodology and Thresholds of Significance

In addition to the above environmental checklist, CEC staff used the following methodology and thresholds of significance to evaluate the project.

Methodology

Impacts to biological resources were assessed through consideration of effects on the landscape, habitat, community, and species level for the proposed project and alternatives. Impacts refer to any project related activity including initial ground disturbance, vegetation removal, construction, road improvements, operation, and any other long-term operations activities that would be implemented to support the operation of the proposed project.

Appendix G of the California Environmental Quality Act (CEQA) Guidelines provides a set of topical guidance questions for an agency to consider when determining whether the

project has any significant impacts. For biological resources, the questions are listed in the table above.

Thresholds of Significance

A significant impact is defined in the CEQA Guidelines as "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project" (Cal. Code Regs. tit. 14, § 15382). An impact to biological resources would be considered by CEC staff to be significant (before considering offsetting mitigation measures) if the construction or operation of the project would result in one or more of the following:

- The potential for reduction, loss, or degradation of habitat for threatened, endangered, or special status species;
- The potential for loss or "take" of any federal or state listed plant or animal species; fully protected species; special status wildlife species, the loss of more than 10 percent of a known population or locally significant occurrence of a CRPR 1B or 2B species, or species protected under the federal or state MBTA or other regulations;
- A net loss or permanent change in the extent of functional value of any habitat or biotic community considered biologically, scientifically, recreationally, or economically significant by federal, state, or local policies, statutes, and regulations;
- Adverse effect on federally protected wetlands as defined in Section 404 of the Clean Water Act;
- Alteration or destruction of habitat that precludes reestablishment of native populations of plants and animals;
- Impairment of movement, migration, or dispersal of resident and migratory fish and wildlife species; or
- Substantial loss of habitat or population decline of any native fish, wildlife or plant species, or overall reduction in biological diversity.

Direct and Indirect Impacts. The CEQA Guidelines define direct impacts as those impacts that result from the project and occur at the same time and place as project activities. Some examples of direct impacts could include the removal of vegetation or habitat; disruption to natural behavior from increased human presence and/or noise, lighting; mortality or injury from crushing, trampling, or entrapment; and exposure to fugitive dust, herbicides, or other hazardous materials.

Indirect impacts are caused by the project but can occur later in time or farther removed in distance and are still reasonably foreseeable and related to the operation of the project. Indirect impacts can include the potential for spread of invasive plant species imported onto the site by construction equipment, changes to soil or hydrology that adversely affects native species over time, avian collision with gen-tie lines, disruption of prey base, or increased predation through alterations of the physical landscape from project features. Indirect impacts may also include fragmentation of

habitat, edge effects, increased traffic, and human disturbance. Long-term indirect effects may also occur from the operation of the proposed project.

Operational impacts include direct and indirect impacts that occur during the life of project operation. Generally, these impacts occur during maintenance activities and are like those that occur during construction but occur at substantially lower levels and of less duration. In addition to routine activities during operation of the project, it is possible that the BESS system could be subject to thermal runaway and result in a battery fire and is discussed further below under **Thermal Runaway and BESS Fires**.

Permanent and Temporary Impacts. Direct or indirect impacts on biological resources could be permanent or temporary in nature. Impacts that result in the irreversible alteration or elimination of biological resources are classified by CEC staff as permanent. However, any impact which would have reversible effects on biological resources could be viewed as short-term and temporary if they occur for less than a year and if recovery is expected without long-term effects. If the impact lasts greater than one year it may be considered a long-term temporary impact or a permanent impact depending on the extent and type of disturbance.

Impact analyses typically characterize effects to vegetation and wildlife habitat as either temporary or permanent. Permanent impacts are generally associated with land use conversion or disturbances that would preclude most natural wildlife habitat function throughout the life of a project or longer. These include the construction and operation of permanent project components such as project facilities, associated infrastructure, and any permanent new or widened access routes. Habitat impacts that persist for the duration of the project or beyond are considered permanent for the purposes of this analysis. Permanent and long-term habitat loss, as defined by CEC staff, includes impacts that take more than five years to recover.

Temporary impacts are generally associated with construction disturbance that allow for a return to more natural conditions following project completion. These impacts may be actively revegetated or enhanced and are typically expected to return to natural conditions within approximately five years. However, temporary impacts to habitats that persist for more than five years are considered long-term but not necessarily permanent, depending on the extent of disturbance and the feasibility of full habitat recovery.

Temporary impacts to habitat that persist for more than five years are considered long-term but not necessarily permanent, depending on the extent of disturbance and the feasibility of full habitat recovery. The construction and operation of the project would result in permanent impacts within the project footprint and associated components, including the location of project facilities and along any permanent new or widened access routes. In addition, the project may result in long-term impacts to habitat in areas disturbed by temporary construction activities, particularly where recovery is constrained by slow natural recovery rates, soil degradation, habitat fragmentation, and changes in species composition.

Mitigation Strategy

This CEQA analysis evaluates biological impacts resulting from all aspects of the project. Whenever impacts are identified from development of the site and related facilities, CEC staff has recommended conditions of certification (COCs), to reduce impacts from the proposed project to less than significant levels. Each of the proposed COCs have been developed by staff to ensure that impacts to sensitive biological resources are minimized or avoided to the extent feasible and impacts are reduced to less than significant. Where appropriate, the applicant's proposed mitigation measures were incorporated into the COCs proposed below.

To facilitate effective implementation of Assembly Bill 205 (AB 205), the CEC and CDFW entered into a Memorandum of Understanding (MOU) in 2022. Under this agreement, CEC serves as the in-lieu permitting authority, ensuring compliance with environmental regulations while expediting project approvals, including for CDFW administered permits such as incidental take permits (ITPs) and Lake and Streambed Alteration (LSA) agreements.

This MOU establishes a coordination plan designed to ensure timely and effective consultation between the two agencies regarding potential impacts of energy projects on fish, wildlife, and plant resources, as well as their habitats. As part of this process, CEC serves as the in-lieu permitting authority, ensuring compliance with environmental regulations while expediting project approvals. The MOU ensures CDFW's expertise is integrated into project review, particularly for Fish and Game Code authorizations such as incidental take authorization. These recommendations are incorporated into the CEC's certificate as enforceable COCs, which ensure that approved projects meet environmental protection requirements. In addition, CEC staff incorporated CDFW staff's recommendations into mitigation measures for the project components outside of CEC's Opt-In Certification, as needed.

Additional impacts are associated with project components outside of CEC's Opt-In Certification, including the approximately 1,300-foot segment of the gen-tie line, transmission tower structures and related lines and conductors, a substation bay dead-end transmission structure and expansion of a 500 kV breaker-and-a-half, to be constructed and owned by PG&E. Project component outside of CEC's Opt-In Certification would be permitted by the California Public Utilities Commission (CPUC) and may require mitigation to be less than significant. The mitigation measures recommended below would be enforced by the CPUC as mitigation measures (MMs). CEC staff has proposed modifications to the standard PG&E Construction Measures and/or proposed additional measures, as needed to reduce impacts to less than significant and/or avoid take of listed species. These measures have been incorporated into this analysis and have been numbered but otherwise retain their original language, unless noted in strikethrough or bold and underline. Where appropriate, CEC staff has added these as recommended Mitigation Measures (MMs) to avoid, minimize, or reduce impacts from construction and operation of these components outside of the CEC's Opt-In certification of the project.

5.2.2.2 Direct and Indirect Impacts

This section analyzes the potential for direct and indirect impacts to biological resources from the construction and operation of the proposed project and provides mitigation, as necessary, to reduce the severity of potentially adverse impacts. For fully protected species the mitigation is intended to fully mitigate the projects direct and indirect effects to that species. If a significant impact is identified, appropriate mitigation to reduce impacts to below significance is then developed. Within this section, whenever a significant impact is identified appropriate mitigation measures and associated proposed COC(s) immediately follow, including supporting rationale for the effectiveness of the measures. The complete mitigation recommendations are found in the subsection entitled Proposed Conditions of Certification (COCs).

a. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Special-Status Plants

Construction

Less Than Significant with Mitigation Incorporated. Based on the analysis below, the proposed project would not substantially adversely affect any special-status plant species, either directly or through habitat modification and the impacts would be less than significant with the implementation of CEC staff's proposed COCs **BIO-1** through **BIO-9, BIO-27, WATER-1, WATER-2, WATER-4, AQ-SC3, AQ-SC4** and recommended mitigation measures **MM BIO-1, MM BIO-2, MM BIO-5, MM BIO-7, MM BIO-8**, and **MM BIO-13**.

Project Components Within CEC's Opt-In Certification

State or federally listed plants were not detected during focused botanical surveys for the proposed project. Direct impacts to special-status plants, should they occur, would include the removal or destruction of seedbanks, and exposure to increased erosion and sedimentation, excessive fugitive dust, and hazardous materials. Direct and indirect impacts to plants would be considered significant without mitigation if project activities result in the loss of a substantial portion of a known occurrence of a CRPR List 1B or 2 species.

To protect sensitive plants, the applicant proposed measures that requires pre-construction surveys for rare plants conducted by a qualified biologist during the appropriate blooming periods, avoiding plants when possible, and conducting salvage if plants would be impacted. CEC staff reviewed the applicant's proposed mitigation and incorporated the applicant's measures, as appropriate, into staff's proposed COC **BIO-9**

(Special-Status Plant Avoidance Measures). This measure also requires compensatory mitigation if complete avoidance cannot be achieved.

The implementation of COCs **BIO-1** through **BIO-7** would require the presence of qualified biologists and monitors during all construction activities to minimize potential impacts on special-status plants. These requirements include mandatory environmental training for all construction personnel, the preparation of a Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP), and the identification of general construction impact avoidance and minimization measures to ensure the protection of special-status plants. To offset potential impacts to special-status plants, COC **BIO-8** (Vegetation Restoration and Enhancement Plan) has been developed in coordination with CDFW and would require the project owner to develop and implement a Vegetation Restoration and Enhancement Plan (Restoration Plan) to restore 6.7 acres of habitat subject to temporary impacts. Additionally, **BIO-27** (Post BESS Fire Monitoring and Management Plan) is required to address and minimize potential impacts to special-status plants resulting from thermal runaway events. These COCs include, but are not limited to, pre-construction floristic surveys within all project disturbance areas and a 100-foot buffer, the establishment of protective buffers, and requires compensatory land acquisition should impacts occur above identified thresholds. These measures also include requirements for biological monitoring during construction, worker training to provide information on special-status plants occurring in the project area, general construction Best Management Practices (BMPs) to avoid sensitive biological resources, habitat restoration, and conditions to minimize the introduction and spread of non-native invasive species.

Impacts from offsite erosion and sedimentation would be reduced through the implementation of staff's proposed COC **WATER-1** (Stormwater Pollution Prevention Plan) which would ensure that development of the site does not result in substantial stormwater runoff from the project area during construction. Additionally, CEC staff proposed **WATER-2** would require the preparation of a Drainage, Erosion, and Sedimentation Control Plan (DESCP) to monitor and manage both onsite and offsite stormwater events during construction, operation, maintenance, and decommissioning. In addition, implementation of **WATER-4** (Compliance with Clean Water Act Sections 401 and 404) would ensure compliance with Sections 401 and 404 of the Clean Water Act. See **Section 5.16, Water Resources**, for additional information related stormwater measures.

Impacts from fugitive dust would be mitigated by implementation of **AQ-SC3**, which include watering roads and or stabilizing them with soil binders. Dust suppressants would be durable non-toxic soil stabilizers, and many other activity specific control measures would be applied to reduce fugitive dust and to ensure activities do not create visible dust emissions during construction. **AQ-SC4** would require a qualified dust monitor during dust producing activities and require remedial measures if fugitive dust exceeds authorized limits. See **Section 5.1, Air Quality**, for additional information related to dust control.

Implementation of CEC staff's proposed COCs **BIO-1** through **BIO-9, BIO-27, WATER-1, WATER-2, WATER-4, AQ-SC3, AQ-SC4** would avoid or reduce these impacts to special-status plants and the impacts would be less than significant.

Project Components Outside CEC's Opt-In Certification

Focused botanical surveys conducted in 2023 confirmed the presence of one special-status plant, big tarplant near the PG&E Tesla substation. Project construction could result in permanent or temporary impacts to three individual plants due to direct harm or habitat loss. No other sensitive plants were detected in the project area.

Impacts to special-status plants, should they occur, would include the removal or destruction of individuals, loss of habitat, destruction or disturbance of seedbanks, and exposure to increased erosion and sedimentation, excessive fugitive dust, and hazardous materials. Direct and indirect impacts to plants would be considered significant without mitigation if project activities result in the loss of a substantial portion of a known occurrence of a CRPR List 1B or 2 species. The big tarplant is a covered focal species under the EACCS, which has the objective of protecting existing populations and maintaining its associated habitat.

CZ 10 is particularly significant because it contains five of the six recorded CNDDB occurrences for this species in the area. Consequently, the conservation priorities for this zone are centered on safeguarding these known populations and proactively surveying suitable habitats for previously undocumented occurrences.

Table 3-2 and 3-3, in the EACCS list specific avoidance and minimization measures to reduce effects on focal species. CEC staff incorporated these measures into staff's recommended mitigation measures to reduce potential impacts to big tarplant. These measures include identification and flagging of the extant population for complete avoidance during construction of the gen-tie line, and supplemental measures if complete avoidance is not feasible. Standard PG&E Construction Measures include **MM BIO-1** (Annual Training) which requires all employees and contractors to receive annual training, **MM BIO-2** (Standard Construction Practices), which include measures to minimize impacts from construction on wildlife, vegetation and water resources. **MM BIO-5** (Best Management Practices), which minimizes erosion, habitat degradation, and controlling potential pollutants and sediment runoff. The standard PG&E Construction Measures, **MM BIO-2** and **MM BIO-5**, included vernal pools and wetlands; however, since there are no vernal pools or wetlands present within the project site, CEC staff modified this measure to include only jurisdictional waters. The standard PG&E Construction Measures did not specifically address big tarplant. Therefore, staff developed **MM BIO-7** (General Impact Avoidance and Minimization Measures), which includes measures to prevent the spread of invasive species and regulates how herbicides are applied, and **MM BIO-8** (Special-Status Plants) which requires pre-construction surveys by a qualified biologist during the appropriate blooming period. The standard PG&E Construction Measures identified a 20-foot buffer from special-status plants; however, CEC staff modified this measure and increased the

buffer to 50 feet. However, if a smaller buffer is necessary based on site-specific constraints then the qualified biologist, in coordination with CDFW, would develop and implement site-specific protection measures, such as monitoring, to avoid impacts to special-status plants. In addition, to supplement the PG&E Standard Construction Measures, CEC staff recommended **MM BIO-13** (Biological Monitor During Construction) which requires a biological monitor to be present during ground disturbing activities.

Implementation of the CEC staff's recommended mitigation measures **MM BIO-1, MM BIO-2, MM BIO-5, MM BIO-7, MM BIO-8**, and **MM BIO-13** would avoid or reduce these impacts to big tarplant to less than significant.

Operation

Less Than Significant with Mitigation Incorporated. Based on the analysis below, operation of the project would not cause substantial adverse effects on any special-status plant and the and the impact would be less than significant with the implementation of CEC staff's proposed COCs **BIO-1** through **BIO-9, BIO-27, WATER-1, WATER-2, AQ-SC3, AQ-SC4** and recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-5**, **MM BIO-7**, **MM BIO-8**, and **MM BIO-13**.

Project Components Within CEC's Opt-In Certification

Sensitive plants were not detected in the project site. Direct and indirect impacts to sensitive plants are not expected to occur during operational activities. Should sensitive plants be detected impacts would be similar in type but greatly reduced in magnitude compared to those discussed for construction.

Implementation of staff's proposed COCs **BIO-1** through **BIO-9, BIO-27, WATER-1, WATER-2, WATER-4, AQ-SC3, AQ-SC4** would avoid or reduce these impacts to special-status plants and the impacts would be less than significant.

Project Components Outside CEC's Opt-In Certification

Impacts to big tarplant from during operation would be similar in type as discussed for construction. Operation activities would likely include routine onsite maintenance. Implementation of the same measures identified for construction would reduce impacts to special-status plants to less than significant.

Implementation of the CEC staff's recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-5**, **MM BIO-7**, **MM BIO-8**, and **MM BIO-13** would avoid or reduce these impacts to big tarplant to less than significant.

Common Wildlife, Including Nesting Birds

Construction

Less Than Significant. Impacts to common wildlife are not generally considered a significant impact under CEQA. However, many common bird species, including nesting migratory birds, are protected under the federal Migratory Bird Treaty Act and the California Fish and Game Code. Based on the analysis below, the proposed project would not likely result in significant impacts on common wildlife. Implementation of CEC staff's proposed COCs **BIO-1** through **BIO-9**, and **BIO-16**, **AQ-SC3**, **AQ-SC4**, **HAZ-1, WORKER SAFETY-1**, and recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-5**, **MM BIO-12**, and **MM BIO-13** would further avoid or minimize potential impacts from the project.

Project Components Within CEC's Opt-In Certification

The project site provides habitat for nesting birds protected by the Migratory Bird Treaty Act and California Fish and Game Code. Red-tailed hawk (*Buteo jamaicensis*), common raven (*Corvus corax*), and American kestrel (*Falco sparverius*), and other bird species were observed foraging on site and in the project area. While no nests were observed during surveys, there are a few suitable trees along Patterson Pass Road, transmission towers for large raptors and ravens, and grassland for ground-nesting species such as western meadowlark (*Sturnella neglecta*).

Direct and indirect impacts to these and other common wildlife species depend on many factors that include but are not limited to the species use of the site (i.e., size of their home range); behavioral factors that result in wildlife seeking refuge rather than dispersing (i.e., site fidelity, cryptic behavior); a species dispersal ability and ecological characteristics (e.g., fossorial, highly motile versus slow moving); ecological characteristics (i.e., fossorial, aerial dispersal, highly mobile); and the ability of the species to evade or disperse from the construction activity. Project level effects on wildlife are further influenced by factors such as the seasonal use of the site. For example, some species including small mammals and many reptiles are year-round residents with small or restricted home ranges while other species including some birds may be periodic visitors or have large or overlapping home ranges. Other species such as large raptors limit their activity on the site to foraging. Likewise, many species of birds may be semi-permanent dwellers or seasonal residents (i.e., migratory birds) that are present either as breeding pairs or overfly the area.

Direct impacts to wildlife could include mortality from trampling or crushing; increased noise levels due to heavy equipment use; light impacts from construction during low-light periods; increased vehicular and human presence along existing access roads; displacement due to habitat modifications, including vegetation removal, alterations of existing soil conditions; vibration and fugitive dust; and increased erosion and sediment transport. Wildlife could also become entombed in burrows or be subject to increased

risk of predation when flushed from cover by equipment or construction workers. Fires that occur because of construction activities can quickly spread in arid regions.

Noise from clearing, grading and construction activities could also affect wildlife in adjacent habitats by interfering with breeding or foraging activities and movement patterns, causing animals to temporarily avoid areas adjacent to the construction zone. See **Section 5.9, Noise and Vibration**, which provides additional information on construction and operational noise levels. Nocturnal wildlife would be affected less by construction than diurnal species since construction would occur primarily during daylight hours. However, construction may also occur during dusk and dawn when many species are highly active. More mobile species such as birds and larger mammals would likely disperse into adjacent habitat areas during land clearing, grading and construction. However, smaller animals would be less able to disperse. During construction it is likely that many of these species, especially fossorial or slow-moving species, would be subject to displacement, injury, or mortality. Because the site would be surrounded by temporary exclusion fencing, some small animals would be trapped within the fence line.

Indirect impacts to wildlife include the disruption of the native seed bank that supports foraging plants, the spread of invasive plant species that alter prey items, alterations in light regimes and the creation of overhead structures, or changes to soil or hydrology that adversely affect native species overtime. Indirect impacts may also include increased traffic and human disturbance and the disruption of prey base or increased predation through alterations of the physical landscape from project features (i.e., fencing, transmission lines) that provide perch sites or shelter for predators.

Construction related effects to common wildlife are typically not considered significant under CEQA. However, CEC staff conclude that the duration of construction (i.e., over a period of 18 months); the variety of wildlife present at the project area; and the use of temporary exclusion fencing, which would prevent some species from dispersing, would result in significant effects to common wildlife without implementation of mitigation measures. All native birds, including common and special-status species, are protected under the federal MBTA and California Fish and Game Code.

Foraging birds, including special-status species, are known to occur in the project area and were detected during surveys, including tricolored blackbird and California horned lark. These and other special-status species may use the project site for foraging or during winter migration, along with many other species of common wildlife. See **Table 5.2-2**, for a complete list of species with the potential to forage in the project site and vicinity, including along Patterson Run Creek, and surrounding areas.

During construction the project site would be fenced with temporary exclusion fencing to prevent species from entering the work area. Prior to fence installation the Designated Biologist (DB) shall conduct pre-construction surveys for special status species. Except for birds, this barrier would exclude or entrap wildlife at the project

area. Therefore, during construction, terrestrial wildlife trapped within the perimeter fence would have limited dispersal ability. This would subject any trapped wildlife to repeated disturbance from construction and the use of roads to support maintenance activities. While many species of wildlife can tolerate human disturbance to some degree; implementation of the proposed project would result in an ongoing loss of wildlife from vehicle traffic, nest failure, and alteration of foraging habitat.

The applicant has recommended general impact avoidance and minimization measures to reduce construction related impacts to common and sensitive wildlife. CEC staff has reviewed these measures and incorporated them into staff's proposed COCs, as appropriate, and enhanced them as necessary to reduce effects on common wildlife. These COCs include **BIO-1** (DB Selection), **BIO-2** (DB Duties), **BIO-3** (Biological Monitor Selection), **BIO-4** (DB and Biological Monitor Authority), **BIO-5** (Worker Environmental Awareness Program [WEAP]), **BIO-6** (Biological Resources Mitigation Implementation and Monitoring Plan), **BIO-7** (General Impact and Avoidance Measures), **BIO-8** (Vegetation Restoration and Enhancement Plan), **BIO-9** (Special-Status Plant Avoidance Measures), **BIO-16** (Nesting Birds and Bird Buffers), **AQ-SC3**, **AQ-SC4**, **HAZ-1** (Spill Containment), and **WORKER SAFETY-1**. These COCs are designed to educate workers of the presence and sensitivity of wildlife that may occur in the project area; provide limitations on the work that may occur during the breeding season; require inspection for wildlife under vehicles; reducing or controlling fugitive and vehicle speeds; monitoring construction to reduce direct wildlife mortality; and the control of noxious weeds.

Implementation of CEC staff's proposed COCs **BIO-1** through **BIO-9**, **BIO-16**, **AQ-SC3**, **AQ-SC4**, **HAZ-1**, and **WORKER SAFETY-1** would avoid or reduce these impacts to common and sensitive wildlife, and the impacts would be less than significant.

Project Components Outside CEC's Opt-In Certification

The project site provides habitat for common wildlife, including nesting birds. This area would remain unfenced, and species would have the ability to disperse freely.

Direct impacts to wildlife could include mortality from trampling or crushing; increased noise levels due to heavy equipment use; light impacts from construction during low-light periods; increased vehicular and human presence along existing access roads; displacement due to habitat modifications, including vegetation removal, alterations of existing soil conditions; vibration and fugitive dust; and increased erosion and sediment transport. Wildlife could also become entombed in burrows or be subject to increased risk of predation when flushed from cover by equipment or construction workers. Fires that occur because of construction activities can quickly spread in arid regions.

Indirect impacts to wildlife include the disruption of the native seed bank that supports foraging plants, the spread of invasive plant species that alter prey items or changes to soil or hydrology that adversely affect native species overtime. Indirect impacts may also include increased traffic and human disturbance and the disruption of prey base or

increased predation through alterations of the physical landscape from project features that provide perch sites or shelter for predators.

The applicant has recommended general impact avoidance and minimization measures to reduce construction related impacts to common and sensitive wildlife. CEC staff has reviewed these measures and incorporated them into staff's recommended mitigation measures and enhanced them as necessary to reduce effects on common wildlife. **MM BIO-12** (Nesting Bird Surveys Prior to Construction and Bird Buffers), which requires pre-construction surveys for nesting birds and implementing non-disturbance buffers if nests are present, and **MM BIO-13** (Biological Monitor During Construction). In addition, as part of the standard PG&E Construction Measures, PG&E would implement the following measures to minimize direct and indirect impacts on common and sensitive wildlife, including nesting birds. These include **MM BIO-1** (Annual Training), **MM BIO-2** (Standard Construction Practices), and **MM BIO-5** (Best Management Practices). These measures are designed to educate workers of the presence and sensitivity of wildlife that may occur in the project area; provide limitations on the work that may occur during the breeding season; require inspection for wildlife under vehicles; reducing or controlling fugitive and vehicle speeds; monitoring construction to reduce direct wildlife mortality; and the control of noxious weeds.

Implementation of the CEC staff's recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-5**, **MM BIO-12**, and **MM BIO-13** would avoid or reduce these impacts to common and sensitive wildlife to less than significant.

Special-Status Wildlife

The proposed project has the potential to result in significant adverse impacts to several special-status wildlife species. These impacts could occur both directly (e.g. mortality during construction) and indirectly through the permanent or temporary modification of suitable habitat within the project area.

The project site provides potential habitat for a variety of protected species. Observations during field surveys confirmed the presence of tricolored blackbirds and California horned lark actively foraging in the area. A comprehensive list of all special-status wildlife with the potential to occur is presented in **Table 5.2-3**. The following sections detail the specific impacts identified for these species.

Special Status Invertebrates

No threatened, endangered, candidate, proposed for listing, or other special-status invertebrates were observed in the project area during biological surveys conducted by the applicant (Dudek 2024). This included Crotch's bumble bee and monarch butterfly.

Crotch's Bumble Bee

Construction

Less Than Significant with Mitigation Incorporated. Based on the analysis below, the proposed project would not substantially affect Crotch's bumble bee, either directly or through habitat modifications, and impacts would be less than significant with the implementation of CEC staff's proposed COCs **BIO-1** through **BIO-10**, **BIO-26**, **BIO-27**, **AQ-SC3**, **AQ-SC4** and **MM BIO-1**, **MM BIO-2**, **MM BIO-13**, and **MM BIO-15**.

Project Components Within CEC's Opt-In Certification

Crotch's bumble bee is a candidate for listing under CESA. Crotch's bumble bee has a wide geographic and elevational distribution and utilizes a variety of habitats throughout its current range, which continues to provide a relatively large amount of remaining intact habitat. No observations of Crotch's bumble bee were made during reconnaissance surveys or during focused surveys. However, the absence of recent survey detections within the project area does not mean absence of the species from the project site.

Direct impacts to Crotch's bumble bee, if present, could include the loss or modification of foraging and nesting habitat, disturbance or destruction of occupied nests, and impacts on individuals and/or nesting sites from exposure to human disturbance, collision with vehicles, ground vibration, fugitive dust, and other hazardous materials. Indirect impacts could include the loss or degradation of habitat from invasive plants and noxious weeds, or loss of food resources (native flowering plants) through pesticide use. If this species occurs in the project area or on site, any loss or disturbance to individuals or nesting colonies would be considered a significant impact absent mitigation.

The applicant has requested take authorization for Crotch's bumble bee which, as a candidate for listing under CESA, is afforded the same protections as a threatened or endangered species under CESA. CEC staff incorporated incidental take permit conditions, consistent with applicable laws, ordinances, regulations, and standards (LORS), as part of the take authorization under the CEC's in-lieu permitting authority for the Crotch's bumble bee. CEC staff, in coordination with CDFW, have developed the following mitigation metric that is proposed to reduce impacts from the proposed project to less than significant levels and comport with CDFW requirements to meet the fully mitigate standard required by CESA:

- Mitigation Ratio: 3:1 ratio for permanent and temporary impacts that result in the loss of ecological value and remove habitat from the project site.
- Impact Calculation: The project includes 60.7 acres of permanent impacts and 6.7 acres of temporary impacts. At the proposed 3:1 ratio, a total of 188.8 acres of mitigation lands (or equivalent mitigation bank credits) would be required to offset these impacts.

These measures have been incorporated into CEC staff's proposed COCs **BIO-10**, (Crotch's Bumble Bee Impact Avoidance, Minimization, and Take Mitigation Measures), and **BIO-27** (Habitat Management Land Acquisition and Restoration for Crotch's Bumble Bee, Western Burrowing Owl, California Tiger Salamander and San Joaquin Kit Fox) which requires pre-construction surveys, preparation of a Crotch's Bumble Bee Mortality Reduction and Relocation Plan, monitoring during construction, and compensatory mitigation, among other measures to minimize harm to the bumble bee. CEC staff recommended the implementation of COCs **BIO-1** (DB Selection), **BIO-2** (DB Duties), **BIO-3** (Biological Monitor Selection), **BIO-4** (DB and Biological Monitor Authority), **BIO-5** (Worker Environmental Awareness Program [WEAP]), **BIO-6** (Biological Resources Mitigation Implementation and Monitoring Plan), **BIO-7** (General Impact and Avoidance Measures), **BIO-8** (Vegetation Restoration and Enhancement Plan), **BIO-9** (Special-Status Plant Avoidance Measures), and **BIO-27** (Post BESS Fire Monitoring and Management Plan). Use of herbicide and pesticide is limited by COC **BIO-7** (General Impact Avoidance and Minimization Measures). In addition, impacts from fugitive dust would be mitigated by implementation of COC **AQ-SC3**, which include watering roads and or stabilizing them with soil binders. Dust suppressants would be durable non-toxic soil stabilizers, and many other activity specific control measures would be applied to reduce fugitive dust and to ensure activities do not create visible dust emissions during construction. COC **AQ-SC4** would require a qualified dust monitor during dust producing activities and require remedial measures if fugitive dust exceeds authorized limits.

To avoid and minimize impacts, staff proposed implementation of general mitigation measures, including COCs **BIO-1** through **BIO-10**, **BIO-26**, **BIO-27**, **AQ-SC3**, and **AQ-SC4**.

Implementation of the CEC staff's proposed COCs **BIO-1** through **BIO-10**, **BIO-26**, **BIO-27**, **AQ-SC3**, and **AQ-SC4** impacts to Crotch's bumble bee and their habitat would be reduced and full mitigation under CESA would be provided. CEC staff concluded that this mitigation approach mitigates for impacts to habitat for this species and impacts would be less than significant.

Project Components Outside of CEC's Opt-In Certification

No observations of Crotch's bumble bee were made during reconnaissance surveys or during focused surveys. However, the absence of recent survey detections within the project area does not mean absence of the species. Floral and nectar resources are present within the project site although nesting resources were not identified during focused surveys.

Direct impacts to Crotch's bumble bee, if present, could include the loss or modification of foraging and nesting habitat, disturbance or destruction of occupied nests, and impacts on individuals and/or nesting sites from exposure to human disturbance, ground vibration, fugitive dust, and other hazardous materials. Indirect impacts could include the loss or degradation of habitat from invasive plants and noxious weeds. If

this species occurs in the project area or on site, any loss or disturbance to individuals or nesting colonies would be considered a significant impact absent mitigation.

As part of the standard PG&E Construction Measures, PG&E would implement **MM BIO-1** (Annual Training), and **MM BIO-2** (Standard Construction Practices). The standard PG&E Construction Measures did not specifically address Crotch's bumble bee so CEC staff recommended the implementation of the following Mitigation Measures **MM BIO-13** (Biological Monitor During Construction), and **MM BIO-15** (Crotch's Bumble Bee) which would require a qualified biologist conduct pre-construction surveys and daily monitoring for Crotch's bumble bee in all project areas, following CDFW non-invasive protocols. If bees or nests are detected, the qualified biologist shall coordinate with CDFW to implement avoidance measures to avoid take or seek take coverage.

Implementation of the CEC staff's recommended mitigation measures **MM BIO-1**, **MM BIO-2**, and **MM BIO-13**, and **MM BIO-15** would avoid or reduce these impacts to Crotch's bumble bee to less than significant.

Operation

Less Than Significant. Based on the analysis below, the operations associated with the proposed project would not substantially adversely affect Crotch's bumble bee, either directly or through habitat modification, and impacts would be less than significant with the implementation of CEC staff's proposed COCs **BIO-1** through **BIO-10**, **BIO-26**, **BIO-27**, **AQ-SC3**, and **AQ-SC4** and **MM BIO-1**, **MM BIO-2**, and **MM BIO-13**, and **MM BIO-15**.

Project Components within CEC's Opt-In Certification

Operational impacts are expected to result in minimal impacts, largely because the project site would be a developed facility lacking suitable habitat within its boundaries. To maintain this minimal impact, any necessary maintenance or facility augmentation should follow all required avoidance and minimization measures. Therefore, CEC staff recommended implementation of COCs **BIO-1** through **BIO-10**, **BIO-26**, **BIO-27**, **AQ-SC3**, and **AQ-SC4** to prevent impacts to the species.

Project Components Outside CEC's Opt-In Certification

Operational impacts would be limited to onsite maintenance on an as needed basis. If operational or maintenance activities have the potential to impact floristic resources, staff recommended a qualified biologist conduct pre-activity surveys to determine if Crotch's bumble bee is present. If individuals or nests are found, the qualified biologist shall coordinate with PG&E and CDFW to develop a plan to avoid incidental take. CEC staff recommends implementation of **MM BIO-1**, **MM BIO-2**, **MM BIO-13**, and **MM BIO-15**.

Jeopardy Analysis

According to the Xerces Society, Crotch's bumble bee has disappeared from much of its historical range in central and southern California, particularly within the Central Valley due to urban sprawl and agricultural expansion. The species has faced an estimated 67 percent decline in overall abundance and persistence. While ongoing surveys are still evaluating extant populations, the proposed project would permanently impact 60.7 acres and temporarily impact 6.7 acres of suitable grassland nesting and foraging habitat. However, because no individuals were detected during 2023 and 2024 biological field surveys, the project is not expected to jeopardize the species' continued existence.

Monarch Butterfly

Construction

Less Than Significant with Mitigation Incorporated. Based on the analysis below, the proposed project would not substantially affect monarch butterfly, either directly or through habitat modifications, and impacts would be less than significant with the implementation of staff's proposed COCs **BIO-1** through **BIO-9**, **BIO-28**, **AQ-SC3**, **AQ-SC4** and **MM BIO-1**, **MM BIO-2**, **MM BIO-8**, and **MM BIO-18**.

Project Components Within CEC's Opt-In Certification

The project site is outside the monarch's known overwintering range and does not contain suitable overwintering habitat (i.e. tree groves). Focused surveys in 2023 and 2024 confirmed the presence of milkweed that could support potential larvae sites According to iNaturalist, records confirm the species is present in the general region (iNaturalist 2025). The project site offers potential foraging resources. Therefore, the monarch has a moderate potential to be an infrequent migrant and forager due to available nectar resources.

During Section 7 consultation with USFWS, USACE did not request to conference on monarch butterfly. CEC staff have proposed the implementation of the following COCs **BIO-1** (DB Selection), **BIO-2** (DB Duties), **BIO-3** (Biological Monitor Selection), **BIO-4** (DB and Biological Monitor Authority), **BIO-5** (Worker Environmental Awareness Program [WEAP]), **BIO-6** (Biological Resources Mitigation Implementation and Monitoring Plan), **BIO-7** (General Impact and Avoidance Measures), **BIO-8** (Vegetation Restoration and Enhancement Plan), **BIO-9** (Special-Status Plant Avoidance Measures), **BIO-28** (Monarch Butterfly Avoidance and Minimization Measures). In addition, impacts from fugitive dust would be mitigated by implementation of COC **AQ-SC3**, which include watering roads and or stabilizing them with soil binders. Dust suppressants would be durable non-toxic soil stabilizers, and many other activity specific control measures would be applied to reduce fugitive dust and to ensure activities do not create visible dust emissions during construction. COC **AQ-SC4** would require a qualified dust monitor during dust producing activities and require remedial measures if fugitive dust exceeds authorized limits.

To avoid and minimize impacts, CEC staff proposed implementation of general mitigation measures, including COCs **BIO-1** through **BIO-9**, **BIO-28**, **AQ-SC3**, and **AQ-SC4**.

Implementation of the CEC staff's proposed COCs **BIO-1** through **BIO-9**, **BIO-28**, **AQ-SC3**, and **AQ-SC4** would ensure impacts to monarch butterflies and their host plant would be reduced to less than significant.

Project Components Outside CEC's Opt-In Certification

The project site is outside the monarch's known overwintering range and does not contain suitable overwintering habitat (i.e. tree groves). Focused surveys in 2023 and 2024 confirmed the presence of milkweed that could support potential larvae sites According to iNaturalist, records confirm the species is present in the general region (iNaturalist 2025). The project site offers potential foraging resources. Therefore, the monarch has a moderate potential to be an infrequent migrant and forager due to available nectar resources.

As part of the standard PG&E Construction Measures, PG&E would implement **MM BIO-1** (Annual Training), and **MM BIO-2** (Standard Construction Practices). The PG&E Standard Construction Measures did not specifically address monarch butterfly so CEC staff recommended the implementation of the following Mitigation Measures: **MM BIO-8** (Special-Status Plants) and **MM BIO-18** (Monarch Butterfly), which requires a qualified biologist to conduct pre-construction surveys prior to the initiation of site mobilization and/or construction related vegetation trimming or removal. The qualified biologist shall survey all areas of potentially suitable habitat for monarch larval host plants.

Implementation of staff's recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-8**, and **MM BIO-18** would ensure impacts to monarch butterfly and their host plant would be reduced to less than significant.

Operation

Less Than Significant with Mitigation Incorporated. Based on the analysis below, the operations associated with the proposed project would not substantially adversely affect monarch butterfly, either directly or through habitat modification, and impacts would be less than significant with the implementation of staff's proposed COCs **BIO-1** through **BIO-9**, **BIO-28**, **AQ-SC3, AQ-SC4**, and **MM BIO-1**, **MM BIO-2**, **MM BIO-3**, and **MM BIO-18**.

Project Components Within CEC's Opt-In Certification

Operational impacts are expected to result in no impact, largely because the project site will be a developed facility lacking suitable habitat within its boundaries.

Project Components Outside CEC's Opt-In Certification

The project site is outside the monarch's known overwintering range and does not contain suitable overwintering habitat (i.e. tree groves). Focused surveys in 2023 and 2024 confirmed the presence of milkweed that could support potential larvae sites According to iNaturalist, records confirm the species is present in the general region (iNaturalist 2025). The project site offers potential foraging resources. Therefore, the monarch has a moderate potential to be an infrequent migrant and forager due to available nectar resources. Operational activities that would impact floral/nectar resources could potentially impact the species.

To avoid and minimize impacts, CEC staff recommended mitigation measures **MM BIO-1** (Annual Training) **MM BIO-2** (Standard Construction Practices), **MM BIO-3** (Special-Status Plants), and **MM BIO-18** (Monarch Butterfly).

Implementation of staff's recommended **MM BIO-1**, **MM BIO-2**, **MM BIO-3**, and **MM BIO-18** would ensure impacts to monarch butterfly and their host plant would be reduced to less than significant.

Special Status Amphibians

California Tiger Salamander

Construction

Less Than Significant with Mitigation Incorporated. Based on the analysis below, the proposed project would not substantially affect California tiger salamander, either directly or through habitat modifications, and impacts would be less than significant with the implementation of CEC staff's proposed COCs **BIO-1** through **BIO-7**, **BIO-11**, **BIO-26**, **BIO-28**, and recommended **MM BIO-1**, **MM BIO-2**, **MM BIO-3**, and **MM BIO-6**.

Project Components Within CEC's Opt-In Certification

California tiger salamander requires vernal pools or other seasonal water sources for breeding and spends the majority of its time in subterranean burrows. This species has a moderate potential to occur within the project area.

The project area occurs within the EACCS CZ10, designated as "CTS North" and is a high priority for the EACCS for protecting a substantial portion of potential breeding ponds within this area. Two ponds within 0.3 miles of the project area provide high-quality breeding habitat for the tiger salamander. No California tiger salamanders were observed during field surveys, but this species is extremely difficult to detect without focused surveys. Grassland with small mammal burrows within the project site and surrounding areas provide suitable upland refuge and dispersal habitat. The proposed project is not located within designated critical habitat for the California tiger salamander.

Direct impacts could include injury or death as a result of individuals being crushed or buried by project vehicles, equipment, or displaced soil. Indirect impacts could include introduction or spread of invasive plant species, habitat degradation from fugitive dust, or trash subsidies which attract predators such as ravens, coyotes, or feral dogs to construction work areas.

The Army Corps of Engineers initiated formal Section 7 consultation with the USFWS (SPK-2024-00486) regarding potential project effects on the federally threatened Central California Distinct Population Segment of the California tiger salamander and other identified species. The USFWS determined that the proposed project is suitable to be appended to the existing May 31, 2012 *Programmatic Biological Opinion for the Corps Permitted Projects Utilizing the East Alameda County Conservation Strategy that May Affect Federally Listed Species in East Alameda County, California* (Service 2012). This Programmatic Biological Opinion (PBO) outlines required avoidance and minimization measures, including the compensatory mitigation measures. In addition, the applicant has requested take authorization for California tiger salamander which is afforded protections under CESA.

CEC staff reviewed the EACCS score sheets submitted by the project owner. Due to identified errors, the score sheet tallies were deemed unsuitable for determining the project specific mitigation ratios. Staff coordinated with the CDFW to determine an appropriate mitigation strategy. The determination was made to adhere to a 3:1 compensatory mitigation ratio, which ensures consistent and robust mitigation that appropriately accounts for temporal loss and potential risk of failure. It also reflects the USFWS required mitigation as outlined in the PBO and follows the EACCS Standardized Mitigation Ratios for California Tiger Salamander Table 3-8 (EACCS 2010) for impacts located outside of critical habitat but inside the CTS North Mitigation area, south of I-580.

The required compensatory mitigation acreage differs based on jurisdictional requirements. As detailed in **Table 5.2-5**, CDFW requires mitigation for both permanent and temporary impacts, resulting in a total obligation of 188.8 acres under CESA. In contrast, USFWS requires compensatory mitigation for permanent impacts only, totaling 182.1 acres.

TABLE 5.2-5 IMPACTS AND MITIGATION FOR CALIFORNIA TIGER SALAMANDER

Resource	Habitat Impact	Mitigation Ratio	Permanent Direct Impact	Temporary Direct Impact	USFWS Mitigation (acres)	CDFW Mitigation (acres)
CTS	Grassland	3:1	60.7	6.7 (restored)	182.1 (Perm)	188.8 (Perm & Temp)

To satisfy this requirement, the applicant proposed providing compensatory mitigation by purchasing and ensuring the long-term conservation of a "turn-key" mitigation property within the same Conservation Zone (CZ10) as the project site, specifically preserving upland and dispersal habitat. The long-term conservation plan, including a

conservation easement, an endowment, a long-term management plan, and a mitigation agreement, would be submitted for approval by the Compliance Project Manager (CPM), in coordination with CDFW and USFWS. The applicant has initiated this process, and all necessary steps to acquire the approved mitigation property must be completed prior to any ground disturbance. Overall, the USFWS conservation measures have been incorporated into CEC staff's proposed COCs. In addition, conservation measures included in the PBO would be incorporated into the BRIMIMP and implemented.

CEC staff incorporated CESA incidental take permit conditions, consistent with applicable LORS, as part of the take authorization under the CEC's in-lieu permitting authority for the California tiger salamander in coordination with CDFW. These measures have been incorporated into staff's proposed COC **BIO-11**, (California Tiger Salamander Impact Avoidance, Minimization, and Take Mitigation Measures), which requires pre-construction surveys, daily inspections, and installation of temporary exclusion fencing. Construction activities are limited to seasonal and daily work windows to avoid peak movement periods. This measure also requires that all excavations be secured or equipped with escape ramps to prevent entrapment. In addition, a specialized salvage and relocation plan would ensure the safe handling of any individuals discovered within the project site. CEC staff also recommended the implementation of COC **BIO-8** which requires habitat restoration, COC **BIO-25** which would require compliance with Lake and Streambed equivalency conditions, and COC **BIO-26** which requires compensatory mitigation, among other measures to minimize harm to the tiger salamander. In addition, impacts from fugitive dust would be mitigated by implementation of COC **AQ-SC3**, which include watering roads and or stabilizing them with soil binders. Dust suppressants would be durable non-toxic soil stabilizers, and many other activity specific control measures would be applied to reduce fugitive dust and to ensure activities do not create visible dust emissions during construction. COC **AQ-SC4** would require a qualified dust monitor during dust producing activities and require remedial measures if fugitive dust exceeds authorized limits.

To avoid and minimize impacts, CEC staff proposed implementation of general mitigation measures, including COCs **BIO-1** through **BIO-7**, **BIO-11**, **BIO-8**, **BIO-26**, **AQ-SC3**, and **AQ-SC4**. With implementation of staff's proposed COCs impacts to California tiger salamander, and their habitat would be reduced and full mitigation under CESA would be provided. CEC staff concluded that this mitigation approach mitigates for impacts to habitat for this species and impacts would be less than significant.

Project Components Outside CEC's Opt-In Certification

As part of the standard PG&E Construction Measures, PG&E would implement the following measures to avoid direct and indirect impacts to California tiger salamander: **MM BIO-1** (Annual Training), **MM BIO-2** (Standard Construction Practices), **MM BIO-3** (California Tiger Salamander), which would limit work off established roadways, and **MM BIO-6** (California Tiger Salamander Specific Conditions) which would require

pre-construction surveys conducted by a qualified biologist, temporal restrictions and the installation of exclusionary fencing. In addition, CEC staff recommended the implementation of **MM BIO-13** (Biological Monitor During Construction) to reduce potential impacts to California tiger salamander.

Implementation of staff's recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-3**, and **MM BIO-6** would ensure impacts to California tiger salamander would be reduced to less than significant.

Jeopardy Analysis

CEC staff analyzed potential impacts associated with the construction of the project. Project activities would result in 60.7 acres of permanent impacts and 6.7 acres of temporary impacts to California tiger salamander upland and dispersal habitat associated with the grassland vegetation community. Because the impacts are limited to a small portion of the species' overall range, the project avoids the most critical threat to the species' life cycle. Therefore, the project will not jeopardize the continued existence of the species.

As part of formal consultation and appending the 2012 PBO, the USFWS conducted a detailed jeopardy analysis of the potential impacts associated with the construction of the project (Dudek 2025ooo). The jeopardy analysis included consideration of the capability of the species to survive and reproduce, as well as any adverse impacts of the taking on those abilities in light of known population trends, known threats to the species, and reasonably foreseeable impacts on the species from other related projects and activities.

USFWS determined that due to available dispersal, and underground refugia habitat within the action area, known occurrences within 0.25-mile from the project site, and the site being within the salamander's 1.3-mile dispersal distance from known populations, USFWS determined it is likely that California tiger salamanders occur within the action area. Implementation of the project has the potential to take California tiger salamanders and their habitat. However, while the project may result in incidental take of California tiger salamander impacts would be fully mitigated through compliance with staff's proposed COCs and permit conditions. The project owner would be required to implement numerous measures to avoid, minimize, and reduce adverse effects to California tiger salamander and their habitat as part of the project. The USFWS determined that the level of anticipated take is not likely to result in jeopardy of the species. The USFWS conclusion found that project impacts when added to the environmental baseline and considered alongside other cumulative effects would not rise to a level that precludes the species recovery or reduces the likelihood of survival (USFWS 2025d).

Operation

Less Than Significant with Mitigation Incorporated. Based on the analysis below, the operations associated with the proposed project would not substantially adversely affect

California tiger salamander, either directly or through habitat modification, and impacts would be less than significant with the implementation of CEC staff's proposed COCs **BIO-1** through **BIO-9**, **BIO-11**, **BIO-25** through **BIO-27**.

Project Components Within CEC's Opt-In Certification

Direct and indirect impacts associated with operation activities would be substantially reduced relative to initial construction activities and operational impacts are expected to result in minimal impacts, largely because the project site will be a developed facility lacking suitable habitat within its boundaries. To maintain this minimal impact, any necessary maintenance or facility augmentation would comply with all required avoidance and minimization measures to prevent impacts to the species including CEC staff proposed COCs **BIO-1** through **BIO-7**, **BIO-11**, and **BIO-25** through **BIO-27**.

Project Components Outside CEC's Opt-In Certification

Operational impacts are expected to result in minimal impacts. To maintain this minimal impact, any necessary maintenance or facility augmentation will comply with all required avoidance and minimization measures to reduce potential impacts to the species including **MM BIO-1**, **MM BIO-2**, **MM BIO-3** and **MM BIO-6**.

California Red-Legged Frog

Construction

Less Than Significant with Mitigation. Based on the analysis below, the proposed project would not substantially affect California red-legged frog, either directly or through habitat modifications, and impacts would be less than significant with the implementation of staff's proposed COCs **BIO-1** through **BIO-8**, **BIO-12**, and **BIO-25** through **BIO-27**, and **MM BIO-1**, **MM BIO-2**, **MM BIO-13**, and **MM BIO-14**.

Project Components Within CEC's Opt-In Certification

California red-legged frogs require vernal pools, cattle ponds, stream pools, or other water sources for breeding and spends the majority of its time in subterranean burrows. This species has a moderate potential to occur within the project area.

The project area occurs within the EACCS CZ10, designated as "CRLF South" and is a high priority for the EACCS for protecting a substantial portion of potential breeding ponds within this area. Three aquatic features were assessed for habitat suitability for the frog: Patterson Run, a seasonal stream paralleling Patterson Pass Road, and two stock ponds approximately 0.3 miles northwest (Pond 1) and west (Pond 2) of the project site. Of these aquatic features, only Pond 2, consisting of a large, deep stock pond with perennial water and a large quantity of emergent vegetation surrounded by grazed grassland, was determined to provide high-quality breeding habitat for the frog. The stretch of Patterson Run within the survey area lacked large pools suitable for breeding, and Pond 1 lacked suitable emergent or marginal vegetation. No frogs were observed during field surveys or the habitat assessment.

The project would result in 60.7 acres of permanent loss of habitat for California red-legged frogs. Direct impacts could include mortality or injury from ground disturbing activities, construction equipment, grading, or other construction activities, and permanent loss of potential upland and dispersal habitat within the project footprint. California red-legged frogs are known to use burrows for refuge, which may be crushed by the weight of construction equipment, building supplies, or grading on the surface, even if the burrow is of sufficient depth to avoid direct excavation. Impacts also could occur due to disturbance caused by increased human activity and impacts to water quality from construction activities. Indirect impacts could include introduction or spread of invasive plant species, habitat degradation from fugitive dust, or trash subsidies which attract predators such as ravens, coyotes, or feral dogs to construction work areas. In addition, the proposed project could reduce the ability of California red-legged frog to return to nearby breeding sites.

CEC staff reviewed the EACCS score sheets submitted by the project owner. Due to identified errors, the score sheet tallies were deemed unsuitable for determining the project specific mitigation ratios. The determination was made to adhere to a 3:1 compensatory mitigation ratio, which ensures consistent and robust mitigation that appropriately accounts for temporal loss and potential risk of failure. It also reflects the USFWS required mitigation as outlined in the PBO. This approach also follows the EACCS Standardized Mitigation Ratios for California Red-Legged Frog, Table 3-7 (EACCS 2010) for impacts located inside critical habitat and inside the same California red-legged frog mitigation area.

The Army Corps of Engineers initiated formal Section 7 consultation with the USFWS (SPK-2024-00486) regarding potential project effects on the federally threatened California red-legged frog and other identified species. The USFWS determined that the proposed project is suitable to be appended to the existing May 31, 2012 *Programmatic Biological Opinion for the Corps Permitted Projects Utilizing the East Alameda County Conservation Strategy that May Affect Federally Listed Species in East Alameda County, California* (Service 2012). The PBO outlines required avoidance and minimization measures, including the mitigation ratios detailed in **Table 5.2-6**.

TABLE 5.2-6 IMPACTS AND MITIGATION FOR CALIFORNIA RED-LEGGED FROG

Resource	Habitat Impact	Mitigation Ratio	Permanent Direct Impact	Temporary Direct Impact	Mitigation (acres)
CRLF	Grassland	3:1	60.7	6.7 (restored)	182.1

To satisfy this requirement, the applicant proposed providing compensatory mitigation by purchasing and ensuring the long-term conservation of a "turn-key" mitigation property within the same Conservation Zone (CZ10) as the project site, specifically preserving upland and dispersal habitat. The long-term conservation plan, including a conservation easement, an endowment, a long-term management plan, and a mitigation agreement, would be submitted for approval by the CPM, in coordination with the USFWS. The project owner has initiated this process, and all necessary steps to acquire the approved mitigation property must be completed prior to any ground

disturbance. Overall, the USFWS conservation measures have been incorporated into CEC staff's proposed COCs. In addition, the conservation measures included in the PBO would be incorporated into the BRIMIMP and implemented.

These measures have been incorporated into staff's proposed COC **BIO-12**, (California Red-Legged Frog Mitigation Measures), which requires pre-construction surveys and protective measures for California red-legged frog, including daily inspections, placement of covers or escape ramps on all excavations that could lead to entrapment, daylight hour work restrictions, monitoring during construction and the installation of temporary exclusion fencing. In the event California red-legged frogs are encountered within the project site the project owner would develop a California red-legged frog relocation plan. The project owner shall also adhere to the PBO conservation measures, including compensatory mitigation as required by USFWS (Dudek 2025ooo).

As part of the appending the proposed action to the 2012 PBO, the USFWS conducted a detailed jeopardy analysis of the potential impacts associated with the construction of the project. The jeopardy analysis included consideration of the capability of the species to survive and reproduce, as well as any adverse impacts of the taking on those abilities in light of known population trends, known threats to the species, and reasonably foreseeable impacts on the species from other related projects and activities. The USFWS determined that the level of anticipated take is not likely to result in jeopardy of the species (USFWS 2025d).

To avoid and minimize impacts to California red-legged frogs, CEC staff proposed implementation of general mitigation measures, including COCs **BIO-1** through **BIO-7**. The project owner would implement the following COCs developed in coordination with CDFW, and **BIO-8** (Vegetation Restoration and Enhancement Plan) which requires the preparation of a Restoration Plan to return the project site to pre-project conditions. In addition, CEC staff proposed **BIO-26** (Habitat Management Land Acquisition), **BIO-25** which requires compliance with Lake and Streambed equivalency conditions, and **BIO-27** (Post BESS Fire Monitoring and Management Plan). In addition, impacts from fugitive dust would be mitigated by implementation of COC **AQ-SC3**, which include watering roads and or stabilizing them with soil binders. Dust suppressants would be durable non-toxic soil stabilizers, and many other activity specific control measures would be applied to reduce fugitive dust and to ensure activities do not create visible dust emissions during construction. COC **AQ-SC4** would require a qualified dust monitor during dust producing activities and require remedial measures if fugitive dust exceeds authorized limits.

With implementation of CEC staff's proposed COCs **BIO-1** through **BIO-8**, **BIO-12**, **BIO-25**, **BIO-26**, **BIO-27**, **AQ-SC3**, and **AQ-SC4** impacts to California red-legged frog and their habitat would be reduced and would fully satisfy USFWS and EACCS mitigation. CEC staff concluded that this mitigation approach mitigates for impacts to habitat for this species and impacts would be less than significant.

Project Components Outside CEC's Opt-In Certification

As part of the standard PG&E Construction Measures, PG&E would implement the following measures to avoid direct and indirect impacts to California red-legged frog: **MM BIO-1** (Annual Training), and **MM BIO-2** (Standard Construction Practices). In addition, staff recommended the implementation of **MM BIO-13** (Biological Monitor During Construction) and **MM BIO-14** (California Red-Legged Frog) which requires pre-construction surveys by a qualified biologist prior to ground disturbing activities, work restrictions, and installation of exclusionary fencing to avoid potential impacts to California red-legged frog.

Implementation of CEC staff's recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-13**, and **MM BIO-14** would ensure impacts to California red-legged frog would be reduced to less than significant.

Jeopardy Analysis

As part of the appending the proposed action to the 2012 PBO, the USFWS conducted a detailed jeopardy analysis of the potential impacts associated with the construction of the project (Dudek 2025ooo). The jeopardy analysis included consideration of the capability of the species to survive and reproduce, as well as any adverse impacts of the taking on those abilities in light of known population trends, known threats to the species, and reasonably foreseeable impacts on the species from other related projects and activities.

USFWS determined that the entire project site is potential upland dispersal and foraging habitat for California red-legged frog. Therefore, due to availability of suitable upland and non-breeding aquatic habitat at the project site, and known occurrences within the project vicinity, the USFWS determined that it is likely that California red-legged frogs occur within the project site. Implementation of the project has the potential to take California red-legged frogs and their habitat. However, while the project may result in incidental take of California red-legged frog, impacts would be fully mitigated through compliance with CEC staff's proposed COCs and permit conditions. The project owner would be required to implement numerous measures to avoid, minimize, and reduce adverse effects to California red-legged frogs and their habitat as part of the project. The USFWS determined that the level of anticipated take is not likely to result in jeopardy of the species. The USFWS conclusion found that project impacts when added to the environmental baseline and considered alongside other cumulative effects would not rise to a level that precludes the species recovery or reduces the likelihood of survival (USFWS 2025d).

Operation

Less Than Significant with Mitigation. Based on the analysis below, the operations associated with the proposed project would not substantially adversely affect California red-legged frog, either directly or through habitat modification, and impacts would be less than significant with the implementation of staff's proposed COCs **BIO-1** through

BIO-9, **BIO-12**, **BIO-25**, **BIO-26**, **BIO-28**, **AQ-SC3**, **AQ-SC4**, and **MM BIO-1**, **MM BIO-2**, **MM BIO-13**, and **MM BIO-14**.

Project Components Within CEC's Opt-In Certification

Operational impacts are expected to result in minimal impacts, largely because the project site will be a developed facility lacking suitable habitat within its boundaries. To maintain this minimal impact, any necessary maintenance or facility augmentation would comply with all required avoidance and minimization measures to prevent impacts to the species including CEC staff proposed COCs **BIO-1** through **BIO-7**, **BIO-12**, and **BIO-25**, **BIO-26**, **BIO-27**, **AQ-SC3**, and **AQ-SC4**.

Project Components Outside CEC's Opt-In Certification

Operational impacts are expected to result in minimal impacts. To maintain this minimal impact, any necessary maintenance or facility augmentation would comply with all required avoidance and minimization measures to reduce potential impacts to the species including **MM BIO-1**, **MM BIO-2**, **MM BIO-13**, and **MM BIO-14**.

California Red-Legged Frog Critical Habitat Unit ALA-2

The entire project site is located within the 153,624-acre California red-legged frog Critical Habitat Unit ALA-2. The site provides upland habitat (primary constituent elements (PCE) 3) and dispersal habitat (PCE 4). While crucial aquatic breeding habitat (PCE 1) and non-breeding habitat (PCE 2) are not within the project footprint, they are present within the species' 1-mile dispersal distance of the project site.

Construction activities will permanently remove 60.7 acres of PCE 3 and 4 habitats. Impacts on these PCEs will be minimized or avoided through conservation measures defined in the USFWS formal consultation which appended the project to the 2012 PBO, including habitat restoration. The USFWS concluded that the loss of critical habitat would not be significant when compared to the entire unit, and the critical habitat unit overall would remain functional with all of the PCEs. The analysis determined that when project-related effects were added to the environmental baseline and considered with all potential cumulative effects, the critical habitat would still maintain its conservation function for the species. This conclusion was based on the proposed mitigation measures outlined in the PBO and CEC staff proposed COCs would effectively minimize adverse effects on the PCEs of the critical habitat. In addition, USFWS determined that the effects on the California red-legged frog critical habitat are minimal and localized in comparison to the total designated area. Ultimately, the effects are not expected to diminish the value of the critical habitat or prevent it from sustaining its role in the conservation of the California red-legged frog (USFWS 2025d).

To avoid and minimize impacts, staff proposed implementation of general mitigation measures, including COCs **BIO-1** through **BIO-7**. The project owner would implement the following COCs, **BIO-8** (Vegetation Restoration and Enhancement Plan) which requires the preparation of a Vegetation Restoration Plan to return the project site to

pre-project conditions, **BIO-12** (California red-legged frog) which requires avoidance and minimization measures for California red-legged frogs, and **BIO-26** Habitat Management Land Acquisition).

With implementation of staff's proposed COCs **BIO-1** through **BIO-7**, **BIO-8**, **BIO-12**, and **BIO-26** impacts to California red-legged frogs and their critical habitat would be reduced to less than significant and would fully satisfy USFWS and EACCS mitigation. CEC staff concluded that this mitigation approach mitigates for impacts to California red-legged frog.

Western spadefoot (*Spea hammondii*)

Construction

Less Than Significant with Mitigation Incorporated. Based on the analysis below, the proposed project would not substantially affect western spadefoot, either directly or through habitat modifications, and impacts would be less than significant with the implementation of staff's proposed COCs **BIO-1** through **BIO-7, BIO-13**, and **MM BIO-1**, **MM BIO-2**, **MM BIO-13**, and **MM BIO-16**.

Project Components Within CEC's Opt-In Certification

While the project site does not contain suitable aquatic habitat for western spadefoot, there are suitable ponds within 0.3 miles of the project site. Ground disturbing activities (i.e. excavation, grading, and stockpiling of soil) associated with construction, access roads, culvert replacement, low water crossing installation within suitable habitat could result in the runoff of sediment, gasoline, oil, or other contaminants into suitable aquatic nonbreeding and dispersal habitat, which could cause illness or mortality to western spadefoot or their food resources.

Western spadefoot in active work areas could be killed or injured by being crushed by equipment, entrapped in open trenches or other project facilities, or entombed in burrows that are covered or filled. They could be run over by vehicles traveling in the project area or to the project area on Patterson Pass Road during construction activities. The potential for such injury or mortality would increase at night and during periods of wet weather or high humidity.

Although the potential for western spadefoot to be present within the project site is low, CEC staff proposed implementation of general mitigation measures to avoid and minimize impacts, including COCs **BIO-1** through **BIO-7**. The project owner would also implement **BIO-13** (Western Spadefoot) which was developed in coordination with CDFW, and which requires a DB to conduct pre-construction surveys within 48 hours if construction activities occur between February 1 through March 30.

With implementation of staff's proposed COCs **BIO-1** through **BIO-7**, and **BIO-13**, impacts to western spadefoot and their habitat would be reduced to less than significant.

Project Components Outside CEC's Opt-In Certification

While the project site does not contain suitable aquatic habitat for western spadefoot, there are suitable ponds within 0.3 miles of the project site. Ground disturbing activities (i.e. excavation, grading, and stockpiling of soil) associated with construction, access roads, culvert replacement, low water crossing installation within suitable habitat could result in the runoff of sediment, gasoline, oil, or other contaminants into suitable aquatic nonbreeding and dispersal habitat, which could cause illness or mortality to western spadefoot or their food resources.

Western spadefoot in active work areas could be killed or injured by being crushed by equipment, entrapped in open trenches or other project facilities, or entombed in burrows that are covered or filled. They could be run over by vehicles traveling in the project area or to the project area on Patterson Pass Road during construction activities. The potential for such injury or mortality would increase at night and during periods of wet weather or high humidity.

As part of the standard PG&E Construction Measures, PG&E would implement **MM BIO-1** (Annual Training), and **MM BIO-2** (Standard Construction Practices) to avoid direct and indirect impacts to western spadefoot.

Although the potential for western spadefoot to be present within the project site is low, the applicant has recommended general impact avoidance and minimization measures to reduce construction related impacts to common and sensitive wildlife. CEC staff has reviewed these measures and incorporated them into staff's proposed mitigation measures and enhanced them as necessary to reduce effects on common wildlife, including western spadefoot. These include **MM BIO-13** (Biological Monitor During Construction), and **MM BIO-16** (Western Spadefoot). All MMs are designed to educate workers of the presence and sensitivity of wildlife that may occur in the project area; provide limitations on the work that may occur during the breeding season; require pre-construction surveys, require inspection for wildlife under vehicles; reducing or controlling fugitive and vehicle speeds; monitoring construction to reduce direct wildlife mortality; and the control of noxious weeds.

With implementation of CEC staff's recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-13**, and **MM BIO-16** impacts to western spadefoot and their habitat would be reduced to less than significant.

Special Status Reptiles

Northwestern Pond Turtle (*Actinemys marmorata*)

Construction

Less Than Significant with Mitigation Incorporated. Based on the analysis below, the proposed project would not substantially affect northwestern pond turtle either directly or through habitat modifications, and impacts would be less than significant with the

implementation of CEC staff's proposed COCs **BIO-1** through **BIO-7**, and **BIO-14**, **HAZ-1**, **AQ-SC3**, **AQ-SC4**, and recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-4**, **MM BIO-5**, **MM BIO-7**, and **MM BIO-13**.

Project Components Within CEC's Opt-In Certification

The project site provides low-quality suitable upland habitat for northwestern pond turtles. The site lacks permanent water sources and provides little basking sites within Patterson Run which is an ephemeral stream. Aquatic habitat is present within 0.3 miles from the project site in the form of stock ponds. Ground disturbing activities (i.e. excavation and grading) that occur within the project site could result in injury or mortality if northwestern pond turtles were present. Individuals could be run over by vehicles or equipment during construction or be entrapped in pits or trenches if these features are left open overnight. Construction activities would also permanently or temporarily disturb potential habitat. To avoid and minimize impacts, CEC staff proposed implementation of general mitigation measures, including COCs **BIO-1** through **BIO-7**. The project owner would also be required to implement **BIO-14**, developed in coordination with CDFW to require pre-construction surveys for northwestern pond turtles within 48 hours before starting work, and if individuals are found, measures to relocate in coordination with the CPM and CDFW. In addition, hazardous waste spill containment would be mitigated by implementation of **HAZ-1**, impacts from fugitive dust would be mitigated by implementation of **AQ-SC3**, which include watering roads and or stabilizing them with soil binders. Dust suppressants would be durable non-toxic soil stabilizers, and many other activity specific control measures would be applied to reduce fugitive dust and to ensure activities do not create visible dust emissions during construction. **AQ-SC4** would require a qualified dust monitor during dust producing activities and require remedial measures if fugitive dust exceeds authorized limits.

With implementation of CEC staff's proposed COCs **BIO-1** through **BIO-7**, **BIO-14**, and **HAZ-1**, **AQ-SC3**, and **AQ-SC4** impacts to northwestern pond turtles would be reduced to less than significant.

Project Components Outside CEC's Opt-In Certification

The project site provides low-quality suitable upland habitat for northwestern pond turtles. The site lacks permanent water sources. Aquatic habitat is present within 0.3 miles from the project site in the form of stock ponds. Ground disturbing activities (i.e. excavation and grading) that occur within the project site could result in injury or mortality if northwestern pond turtles were present. Individuals could be run over by vehicles or equipment during construction or be entrapped in pits or trenches if these features are left open overnight. Construction activities would also permanently or temporarily disturb potential habitat.

As part of the standard PG&E Construction Measures, CEC staff recommends that PG&E implement **MM BIO-1** (Annual Training), **MM BIO-2** (Standard Construction

Practices), and **MM BIO-5** (Best Management Practices). In addition, CEC staff recommended the implementation of **MM BIO-7** (General Impact Avoidance and Minimization Measures), and **MM BIO-13** (Biological Monitoring During Construction) to avoid impacts to northwestern pond turtle.

With implementation of CEC staff's recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-4**, **MM BIO-5**, **MM BIO-7**, and **MM BIO-13** impacts to northwestern pond turtle and their habitat would be reduced to less than significant.

San Joaquin coachwhip (*Masticophis flagellum ruddocki*)

Construction

Less Than Significant with Mitigation. Based on the analysis below, the proposed project would not substantially affect San Joaquin coachwhip, either directly or through habitat modifications, and impacts would be less than significant with the implementation of CEC staff's proposed COCs **BIO-1** through **BIO-7**, and **BIO-15**, **HAZ-1**, **AQ-SC3**, **AQ-SC4**, and recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-5**, **MM BIO-13**, and **MM BIO-17**.

Project Components Within CEC's Opt-In Certification

Annual grassland with sparse tree cover within the project site could provide suitable habitat for San Joaquin coachwhip. Ground disturbing activities (i.e., excavation, grading, and stockpiling of soil) that occur within the project site could result in injury or mortality of San Joaquin coachwhip if the species is present. Individuals could be run over by vehicles or equipment during construction or be entrapped in pits or trenches if these features are left open overnight. Individuals seeking shade or refuge under vehicles or equipment could be crushed when vehicles or equipment are moved. Construction activities would also permanently and temporarily disturb potential habitat. To avoid and minimize impacts, CEC staff proposed implementation of general mitigation measures, including COCs **BIO-1** through **BIO-7**. The project owner would implement the following COCs that were developed in coordination with CDFW, including **BIO-8** (Vegetation Restoration and Enhancement Plan) which requires the preparation of a Vegetation Restoration and Enhancement Plan to return the project site to pre-project conditions, **BIO-15** (Coast Horned Lizard and San Joaquin Coachwhip) which requires avoidance and minimization measures for San Joaquin Coachwhip, including pre-construction surveys and **BIO-26** (Habitat Management Land Acquisition). In addition, hazardous waste spill containment would be mitigated by implementation of **HAZ-1**, impacts from fugitive dust would be mitigated by implementation of COC **AQ-SC3**, which include watering roads and or stabilizing them with soil binders. Dust suppressants would be durable non-toxic soil stabilizers, and many other activity specific control measures would be applied to reduce fugitive dust and to ensure activities do not create visible dust emissions during construction. COC **AQ-SC4** would require a qualified dust monitor during dust producing activities and require remedial measures if fugitive dust exceeds authorized limits.

With implementation of staff's proposed COCs **BIO-1** through **BIO-7**, **BIO-8**, **BIO-15**, and **BIO-26**, **HAZ-1**, **AQ-SC3**, and **AQ-SC4** impacts to San Joaquin coachwhip would be reduced to less than significant.

Project Components Outside CEC's Opt-In Certification

Annual grassland within the project site could provide suitable habitat for San Joaquin coachwhip; however, there are limited open areas for sunning and limited loose sandy soils available. Ground disturbing activities (i.e., excavation, grading, and stockpiling of soil) that occur within the project site could result in injury or mortality of San Joaquin coachwhip if the species is present. Individuals could be run over by vehicles or equipment during construction or be entrapped in pits or trenches if these features are left open overnight. Individuals seeking shade or refuge under vehicles or equipment could be crushed when vehicles or equipment are moved. Construction activities would also permanently and temporarily disturb potential habitat.

To avoid impacts, as part of the standard PG&E Construction Measures, PG&E would implement **MM BIO-1** (Annual Training), **MM BIO-2** (Standard Construction Practices), and **MM BIO-5** (Best Management Practices). The applicant also recommended general impact avoidance and minimization measures to reduce construction related impacts to sensitive wildlife. CEC staff reviewed these measures and incorporated them into CEC staff's proposed mitigation measures and enhanced them as necessary to reduce effects on San Joaquin coachwhip. These include **MM BIO-13** (Biological Monitor During Construction), and **MM BIO-17** (Coast Horned Lizard and San Joaquin Coachwhip). These MMs are designed to educate workers of the presence and sensitivity of wildlife that may occur in the project area; provide limitations on the work that may occur during the breeding season; require pre-construction surveys, require inspection for wildlife under vehicles; reducing or controlling fugitive and vehicle speeds; monitoring construction to reduce direct wildlife mortality; and the control of noxious weeds.

With implementation of staff's recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-5**, **MM BIO-13**, and **MM BIO-17** impacts to San Joaquin coachwhip and their habitat would be reduced to less than significant.

Coast horned lizard (*Phrynosoma blainvillii*)

Construction

Less Than Significant with Mitigation Incorporated. Based on the analysis below, the proposed project would not substantially affect coast horned lizard, either directly or through habitat modifications, and impacts would be less than significant with the implementation of staff's proposed COCs **BIO-1** through **BIO-7**, **BIO-8**, **BIO-15**, **BIO-26**, **HAZ-1**, **AQ-SC3**, **AQ-SC4**, and **MM BIO-1**, **MM BIO-2**, **MM BIO-5**, **MM BIO-13**, and **MM BIO-17**.

Project Components Within CEC's Opt-In Certification

Annual grassland within the project site could provide suitable habitat for coast horned lizards; however, there are limited open areas for sunning and limited loose sandy soils available. Ground disturbing activities (i.e., excavation, grading, and stockpiling of soil) that occur within the project site could result in injury or mortality of coast horned lizard if the species is present. Individuals could be run over by vehicles or equipment during construction or be entrapped in pits or trenches if these features are left open overnight. Individuals seeking shade or refuge under vehicles or equipment could be crushed when vehicles or equipment are moved. Construction activities would also permanently and temporarily disturb potential habitat. To avoid and minimize impacts, CEC staff proposed implementation of general mitigation measures, including COCs **BIO-1** through **BIO-7**. The project owner would implement the following COCs, **BIO-8** (Vegetation Restoration and Enhancement Plan) which requires the preparation of a Vegetation Restoration Plan to return the project site to pre-project conditions, **BIO-15** (Coast Horned Lizard and San Joaquin Coachwhip) which requires avoidance and minimization measures for coast horned lizard, including pre-construction surveys and **BIO-26** (Habitat Management Land Acquisition). In addition, hazardous waste spill containment would be mitigated by implementation of **HAZ-1**, impacts from fugitive dust would be mitigated by implementation of COC **AQ-SC3**, which include watering roads and or stabilizing them with soil binders. Dust suppressants would be durable non-toxic soil stabilizers, and many other activity specific control measures would be applied to reduce fugitive dust and to ensure activities do not create visible dust emissions during construction. COC **AQ-SC4** would require a qualified dust monitor during dust producing activities and require remedial measures if fugitive dust exceeds authorized limits.

With implementation of staff's proposed COCs **BIO-1** through **BIO-7**, **BIO-8**, **BIO-15**, and **BIO-26**, **HAZ-1**, **AQ-SC3**, and **AQ-SC4** impacts to coast horned lizards would be reduced to less than significant.

Project Components Outside CEC's Opt-In Certification

Annual grassland within the project site could provide suitable habitat for coast horned lizards; however, there are limited open areas for sunning and limited loose sandy soils available. Ground disturbing activities (i.e., excavation, grading, and stockpiling of soil) that occur within the project site could result in injury or mortality of coast horned lizard if the species is present. Individuals could be run over by vehicles or equipment during construction or be entrapped in pits or trenches if these features are left open overnight. Individuals seeking shade or refuge under vehicles or equipment could be crushed when vehicles or equipment are moved. Construction activities would also permanently and temporarily disturb potential habitat.

To avoid and minimize impacts, as part of the standard PG&E Construction Measures, CEC staff recommends that PG&E implement **MM BIO-1** (Annual Training), **MM BIO-2** (Standard Construction Practices), and **MM BIO-5** (Best Management Practices). The

applicant also recommended general impact avoidance and minimization measures to reduce construction related impacts to sensitive wildlife. CEC staff reviewed these measures and incorporated them into staff's proposed mitigation measures and enhanced them as necessary to reduce effects on coast horned lizard. These include **MM BIO-13** (Biological Monitor During Construction), and **MM BIO-17** (Coast Horned Lizard and San Joaquin Coachwhip). These MMs are designed to educate workers of the presence and sensitivity of wildlife that may occur in the project area; provide limitations on the work that may occur during the breeding season; require pre-construction surveys, require inspection for wildlife under vehicles; reducing or controlling fugitive and vehicle speeds; monitoring construction to reduce direct wildlife mortality; and the control of noxious weeds.

With implementation of staff's recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-5**, **MM BIO-13**, and **MM BIO-17** impacts to coast horned lizard and their habitat would be reduced to less than significant.

White-Tailed Kite and Swainson's Hawk

Construction

Less Than Significant with Mitigation Incorporated. Based on the analysis below, the proposed project would not substantially affect white-tailed kite and Swainson's hawk, either directly or through habitat modifications, and impacts would be less than significant with the implementation of CEC staff's proposed COCs **BIO-1** through **BIO-7**, and **BIO-16** through **BIO-21**, **BIO-26**, **HAZ-1**, **AQ-SC3**, **AQ-SC4**, and recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-5**, **MM BIO-10**, **MM BIO-12**, and **MM BIO-13**.

Project Components Within CEC's Opt-In Certification

Suitable nesting habitat is limited to the few trees within the Patterson Run creek corridor. Due to a recent fire southeast of Patterson Pass Road, satellite imagery indicates fire damage to these trees along Patterson Run. Although not typical nesting sites, Swainson's hawk and white-tailed kites could also nest on electrical transmission towers located throughout the project area. Nonnative annual grassland throughout the project site could provide abundant prey for raptors.

Direct impacts to these species include construction-related mortality, degradation of foraging habitat, disturbance due to increased levels of human presence, noise, vibration, fugitive dust, habitat loss or fragmentation. Indirect impacts include temporary or permanent displacement, and disruption of movement. It is assumed that most mobile animals, both special-status and common, would likely move away from any temporary disturbance. However, species that are less able or inclined to disperse (such as nesting birds and raptors) may remain near the site and experience temporary adverse impacts. Impacts to nesting birds and including special-status species are discussed in the subsections below.

Large aerial foragers, such as golden eagles and other raptors, may have reduced foraging opportunities on the project site during construction and operation of the facility. The loss of foraging habitat for listed species would typically be considered a significant impact, absent mitigation, directly through the removal of vegetation that could support food and prey species, and indirectly due to the long-term alteration of available habitat. Foraging habitat on the project site, however, is moderately suitable. Implementation of the proposed project would result in 60.7 acres of permanent impacts and 6.7 acres of temporary impacts to potential foraging habitat for a variety of resident and migratory birds.

To avoid and minimize impacts, CEC staff proposed implementation of general mitigation measures, including COCs **BIO-1** through **BIO-7**. Furthermore, staff proposed the following species-specific conditions, which also incorporate mitigation measures proposed by the applicant, as appropriate. These include COCs **BIO-16** through **BIO-21** (Nesting birds and bird buffers, Swainson's hawk surveys and avoidance, golden eagle and nest protection buffer, white-tailed kite nesting preconstruction surveys and nest protection buffer, and California condor) which would require the project owner prepare a Nesting Bird Management Plan, avoid project activities during the nesting bird season and identifies preconstruction survey requirements. In addition, they outline specific monitoring and buffers in the event nesting birds are present. CEC staff proposed COC **BIO-26** (Habitat Management Land Acquisition), which requires the project owner to restore temporarily disturbed areas to pre-project conditions and provide compensatory mitigation for permanent impacts to foraging and/or nesting habitat at a 3:1 ratio. These COCs are designed to educate workers of the presence and sensitivity of wildlife that may occur in the project area; provide limitations on the work that may occur during the breeding season; require inspection for wildlife under vehicles; reducing or controlling fugitive and vehicle speeds; monitoring construction to reduce direct wildlife mortality; and the control of noxious weeds. In addition, COCs **HAZ-1**, **AQ-SC3**, and **AQ-SC4** include requirements for hazardous materials spill containment, reducing or controlling fugitive dust, and requiring the presence of a dust monitor.

Implementation of staff's proposed COCs **BIO-1** through **BIO-7**, and **BIO-16** through **BIO-21**, **BIO-26**, **HAZ-1**, **AQ-SC3**, and **AQ-SC4**. would avoid or reduce impacts to white-tailed kites and Swainson's hawk to less than significant.

Project Components Outside CEC's Opt-In Certification

Although not typical nesting sites, white-tailed kites and Swainson's hawk could nest on electrical transmission towers located throughout the project area. Nonnative annual grassland throughout the project site could provide abundant prey for raptors. Construction would impact foraging opportunities for these species.

Direct impacts to these species include construction-related mortality, degradation of foraging habitat, disturbance due to increased levels of human presence, noise, vibration, fugitive dust, habitat loss or fragmentation. Indirect impacts include

temporary or permanent displacement, and disruption of movement. It is assumed that most mobile animals, both special-status and common, would likely move away from any temporary disturbance.

The loss of foraging habitat for listed species would typically be considered a significant impact, absent mitigation, directly through the removal of vegetation that could support food and prey species, and indirectly due to the long-term alteration of available habitat. Foraging habitat on the project site, however, is moderately suitable.

Approximately 1.9 acres of the gen-tie line would be permanently impacted by the installation of transmission and interconnecting facilities and 6.7 acres of temporary impacts to potential foraging habitat for a variety of resident and migratory birds, including white-tailed kites and Swainson's hawk.

To avoid and minimize impacts, as part of the standard PG&E Construction Measures, CEC staff recommends that PG&E implement **MM BIO-1** (Annual Training), **MM BIO-2** (Standard Construction Practices), and **MM BIO-5** (Best Management Practices). In addition, the applicant has recommended general impact avoidance and minimization measures to reduce construction related impacts. CEC staff have reviewed these measures and incorporated them into staff's proposed Mitigation Measures (**MM**) and enhanced them as necessary to reduce effects on white-tailed kites and Swainson's hawk. These include **MM BIO-10** (Swainson's Hawk), **MM BIO-12** (Nesting Bird Surveys Prior to Construction and Bird Buffers), and **MM BIO-13** (Biological Monitor During Construction). These **MM**s are designed to educate workers of the presence and sensitivity of wildlife that may occur in the project area; provide limitations on the work that may occur during the breeding season; require pre-construction surveys, require inspection for wildlife under vehicles; reducing or controlling fugitive and vehicle speeds; monitoring construction to reduce direct wildlife mortality; and the control of noxious weeds.

With implementation of staff's recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-5**, **MM BIO-10**, **MM BIO-12**, and **MM BIO-13** impacts to white-tailed kites and Swainson's hawk and their habitat would be reduced to less than significant.

Operation

Less Than Significant with Mitigation. Based on the analysis below, the proposed project would not substantially affect white-tailed kites and Swainson's hawk, either directly or through habitat modifications, and impacts would be less than significant with the implementation of CEC staff's proposed COCs **BIO-1** through **BIO-7**, and **BIO-16** through **BIO-21**, **BIO-26**, **HAZ-1**, **AQ-SC3**, **AQ-SC4** and **MM** recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-5**, **MM BIO-10**, **MM BIO-12**, and **MM BIO-13**.

Project Components Within CEC's Opt-In Certification

Direct and indirect impacts associated with operational activities would be substantially reduced relative to initial construction activities; however, while the amount of foraging habitat would decrease due to development of the BESS facility, white-tailed kites and/or Swainson's hawk could choose to nest on nearby transmission lines. Operational activities would include inspection of the facilities and other routine activities. During these events it is possible that direct impacts to nesting birds could result if activities occurred within close proximity to nesting birds. Operational noise at the project site is expected to be low and human presence limited.

To avoid and minimize impacts, staff proposed implementation of general mitigation measures, including COCs **BIO-1** through **BIO-7**. In addition, staff proposed COC **BIO-8** (Vegetation Restoration and Enhancement Plan), **BIO-16** (Nesting Birds and Bird Buffers), **BIO-19** (Swainson's hawk Surveys and Avoidance), **BIO-20** (White-Tailed Kite Nesting Preconstruction Surveys and Nest Protection Buffers), and **BIO-26** (Habitat Management Land Acquisition) which provides mitigation for impacts to foraging habitat shall be implemented.

With implementation of CEC staff's proposed COCs **BIO-1** through **BIO-7**, **BIO-8**, **BIO-16**, **BIO-19**, **BIO-20**, and **BIO-26** impacts to white-tailed kites and Swainson's hawk and their habitat would be reduced to less than significant.

Project Components Outside CEC's Opt-In Certification

Direct and indirect impacts associated with operation activities would be substantially reduced relative to initial construction activities. The project site provides moderate quality foraging habitat for white-tailed kites and Swainson's hawks and would continue to provide foraging habitat opportunities after temporarily impacted areas are revegetated.

The applicant has recommended general impact avoidance and minimization measures to reduce construction related impacts to common and sensitive wildlife. CEC staff has reviewed these measures and incorporated them into staff's proposed mitigation measures and enhanced them as necessary to reduce effects on common wildlife. To avoid and minimize impacts, as part of the standard PG&E Construction Measures, staff recommends that PG&E implement **MM BIO-1** (Annual Training), and **MM BIO-2** (Standard Construction Practices). PG&E Construction Measures did not include mea-sures to avoid white-tailed kites and Swainson's hawks therefore, staff recommended the implementation of **MM BIO-10** (Swainson's Hawk), **MM BIO-12** (Nesting Bird Surveys Prior to Construction and Bird Buffers), and **MM BIO-13** (Biological Monitor During Construction). These measures are designed to educate workers of the presence and sensitivity of wildlife that may occur in the project area; provide limitations on the work that may occur during the breeding season; require inspection for wildlife under vehicles; reducing or controlling fugitive and vehicle speeds; monitoring construction to reduce direct wildlife mortality; and the control of noxious weeds.

With implementation of CEC staff's recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-5**, **MM BIO-10**, **MM BIO-12**, and **MM BIO-13** impacts to white-tailed kites and Swainson's hawk and their habitat would be reduced to less than significant.

Golden Eagle

Construction

Less Than Significant with Mitigation. Based on the analysis below, the proposed project would not substantially affect golden eagle, either directly or through habitat modifications, and impacts would be less than significant with the implementation of CEC staff's proposed COCs **BIO-1** through **BIO-7**, **BIO-16**, **BIO-17**, **BIO-26**, and recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-5**, **MM BIO-10**, **MM BIO-12**, and **MM BIO-13**.

Project Components Within CEC's Opt-In Certification

Direct impacts to golden eagle include the loss or degradation of foraging habitat resulting from vegetation clearing or ground disturbance, and removal of vegetation, including mowing. Transmission towers and trees within 1-mile of the project area could provide nesting habitat.

The project owner proposed a 0.5 mile no disturbance buffer; however, to comply with the BGEPA, CEC staff, in coordination with USFWS, determined a 1-mile nest protection buffer shall be implemented through the breeding season starting on December 15. If there are no eggs or young as of April 15, the buffer could be safely removed. If eggs and young are present, the buffer shall be maintained until August 31 (USFWS 2025b). Biological monitors shall not be substituted for disturbance buffers and staff recommended that the project owner coordinate with the USFWS Migratory Bird Program to determine the best approach to golden eagle monitoring prior to commencing construction related activities. This approach would avoid inadvertent disturbance by duplicative monitoring efforts in the area.

To avoid and minimize impacts, staff proposed implementation of general mitigation measures, including COCs **BIO-1** through **BIO-7**, and would implement **BIO-16** which requires the preparation of a Nesting Bird Management Plan and **BIO-17** which includes golden eagle protection measures, including pre-construction surveys within 30 days of the commencement of activities. In addition, these measures require no-disturbance buffers ranging from 150 feet for passerines, 500 feet for raptors, and 1 mile for golden eagles. Additionally, **BIO-8** requires the restoration of temporary impacts and **BIO-26** requires a 3:1 mitigation ratio for permanent impacts to foraging and/or nesting habitat.

Implementation of CEC staff's proposed COCs **BIO-1** through **BIO-8**, **BIO-16**, **BIO-17**, and **BIO-26** would avoid or reduce impacts to foraging golden eagle to less than significant.

Project Components Outside CEC's Opt-In Certification

Direct impacts to golden eagle include the loss or degradation of foraging habitat resulting from vegetation clearing or ground disturbance, and removal of vegetation, including mowing. Transmission towers and trees within 1-mile of the project area could provide nesting habitat; another potential direct impact to golden eagle is nest abandonment caused by project activities.

The project owner proposed a 0.5 mile no disturbance buffer; however, to comply with the BGEPA, CEC staff, in coordination with USFWS, determined a 1-mile nest protection buffer shall be implemented through the breeding season starting on December 15. If there are no eggs or young as of April 15, the buffer could be safely removed. If eggs and young are present, the buffer shall be maintained until August 31 (USFWS 2025b). Biological monitors shall not be substituted for disturbance buffers and staff recommended that the project owner coordinate with the USFWS Migratory Bird Program to determine the best approach to golden eagle monitoring prior to commencing construction related activities. This approach would avoid inadvertent disturbance by duplicative monitoring efforts in the area.

To avoid and minimize impacts, as part of the standard PG&E Construction Measures, CEC staff recommends that PG&E implement mitigation measures **BIO-1** (Annual Training), **MM BIO-2** (Standard Construction Practices), and **MM BIO-5** (Best Management Practices). In addition, the applicant has recommended general impact avoidance and minimization measures to reduce construction related impacts to common and sensitive wildlife. CEC staff has reviewed these measures and incorporated them into staff's proposed mitigation measures and enhanced them as necessary to reduce effects on common wildlife. These include **MM BIO-11** (Golden Eagle) which requires pre-construction surveys within 30 days prior to the start of ground disturbance and coordination with USFWS if the species is found within a 1-mile radius of the project site, **MM BIO-12** (Nesting Bird Surveys Prior to Construction and Bird Buffers), and **MM BIO-13** (Biological Monitor During Construction). These measures are designed to educate workers of the presence and sensitivity of wildlife that may occur in the project area; provide limitations on the work that may occur during the breeding season; require inspection for wildlife under vehicles; reducing or controlling fugitive and vehicle speeds; monitoring construction to reduce direct wildlife mortality; and the control of noxious weeds.

With implementation of staff's recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-5**, **MM BIO-10**, **MM BIO-12**, and **MM BIO-13** impacts to golden eagle would be reduced to less than significant.

Operation

Less Than Significant with Mitigation. Based on the analysis below, the operations associated with the proposed project would not substantially adversely affect golden eagle, either directly or through habitat modification, and impacts would be less than

significant with the implementation of staff's proposed COCs **BIO-1** through **BIO-7**, **BIO-17**, and recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-5**, **MM BIO-12**, and **MM BIO-13**.

Project Components Within CEC's Opt-In Certification

Direct and indirect impacts associated with operational activities would be substantially reduced relative to initial construction activities; however, while foraging habitat would be lacking due to the developed BESS facility, golden eagle could choose to nest on nearby transmission lines. Operational activities would include inspection of the facilities and other routine activities. During these events it is possible that direct impacts to nesting birds could result if activities occurred within close proximity. Operational noise at the project site is expected to be low and human presence limited.

To avoid and minimize impacts, both direct and indirect, from operation on golden eagle, CEC staff proposed implementation of general mitigation measures, including COCs **BIO-1** through **BIO-7**. These proposed measures would require the project owner to employ a DB and, if necessary, a biological monitor. They also require the implementation of minimization measures and best management practices to reduce wildlife mortality, and control fugitive dust. In addition, **BIO-17** (Golden Eagle and Nest Protection Buffers), which would also apply during operation, as needed.

With implementation of CEC staff's proposed COCs **BIO-1** through **BIO-7**, and **BIO-17**, impacts to golden eagle during operation would be reduced to less than significant.

Project Components Outside CEC's Opt-In Certification

To avoid and minimize impacts to golden eagle during operations, and as part of the standard PG&E Construction Measures, CEC staff recommends that PG&E implement **MM BIO-1** (Annual Training), **MM BIO-2** (Standard Construction Practices), and **MM BIO-5** (Best Management Practices). In addition, the applicant has recommended general impact avoidance and minimization measures to reduce construction related impacts to golden eagle. CEC staff has reviewed these measures and incorporated them into staff's proposed mitigation measures and enhanced them as necessary to reduce effects on common wildlife. These include **MM BIO-11** (Golden Eagle) which requires pre-construction surveys within 30 days prior to the start of ground disturbance and coordination with USFWS if the species is found within a 1-mile radius of the project site, **MM BIO-12** (Nesting Bird Surveys Prior to Construction and Bird Buffers), and **MM BIO-13** (Biological Monitor During Construction). These measures are designed to educate workers of the presence and sensitivity of wildlife that may occur in the project area; provide limitations on the work that may occur during the breeding season; require inspection for wildlife under vehicles; reducing or controlling fugitive and vehicle speeds; monitoring construction to reduce direct wildlife mortality; and the control of noxious weeds.

With implementation of staff's recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-5**, **MM BIO-12**, and **MM BIO-13**, impacts to golden eagle during operation would be reduced to less than significant.

Burrowing Owl

Construction

Less Than Significant with Mitigation. Based on the analysis below, the proposed project would not substantially affect burrowing owl, either directly or through habitat modifications, and impacts would be less than significant with the implementation of staff's proposed COCs **AQ-SC3**, **AQ-SC4**, **BIO-1** through **BIO-7**, **BIO-18**, **BIO-26**, and recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-7**, **MM BIO-9**, and **MM BIO-13**.

Project Components Within CEC's Opt-In Certification

Direct impacts to burrowing owls include the loss or degradation of foraging habitat resulting from vegetation clearing or ground disturbance, removal or disturbance of vegetation, including mowing, injury or mortality from collisions with vehicles or construction equipment. Other direct impacts include disturbance from increased noise levels from heavy equipment, increased vehicle traffic, increased human presence, and exposure to fugitive dust, and long-term human presence associated with the approximately 18-month construction schedule. Indirect impacts include the loss or degradation of foraging habitat due to the spread of noxious and invasive weeds, soil erosion, exposure to hazardous materials from construction, and altered plant community composition caused by operation of the proposed project. Direct impacts to burrowing owls or their nests could be significant without mitigation. Any action that results in direct impacts to burrowing owls that result in harm would constitute take under CESA.

Table 5.2-7 identifies restricted activity dates and setback distances by level of disturbance for burrowing owls. These buffers would be implemented by the DB and/or Biological Monitor as identified in COC **BIO-18** if burrowing owls are discovered during construction activities.

TABLE 5.2-7 BURROWING OWL BUFFERS

Location	Time of Year	Level of Disturbance		
		Low	Med	High
Nesting Sites	April 1–Aug 15	656 feet	1640 feet	1640 feet
Nesting Sites	Aug 16–Oct 15	656 feet	656 feet	1640 feet
Nesting sites	Oct 16–Mar 31	164 feet	328 feet	1640 feet

CEC staff determined that mitigation for impacts to foraging habitat for burrowing owl, a state-listed candidate species, is necessary under CESA and CEQA to offset habitat loss and fully address project-related impacts to the species. The project owner has requested take authorization for burrowing owls, which, as a candidate species for

listing under CESA, is afforded the same protection as a threatened or endangered species under CESA. CEC staff, in coordination with CDFW, have developed the following mitigation metrics that are proposed to reduce impacts from the proposed project to less than significant levels and comport with CDFW requirements to meet the standard of full mitigation required by CESA.

- Mitigation Ratio: 3:1 ratio for permanent and temporary impacts that result in the loss of ecological value and remove habitat from the project site.
- Impact Calculation: There are 60.7 acres of permanent impacts and 6.7 acres of temporary impacts. At the proposed 3:1 ratio 188.8 acres would be required to offset these impacts.

CEC staff incorporated incidental take permit conditions in coordination with CDFW, consistent with applicable LORS, as part of the take authorization under the CEC's in-lieu permitting authority for the burrowing owl. These measures have been incorporated into staff's proposed COC **BIO-18**, (Burrowing Owl Impact Avoidance, Minimization, and Take Mitigation Measures), which includes specific survey, monitoring, and relocation methods. These include preparing detailed burrowing owl maps, a Burrowing Owl Mortality Reduction Plan, and a Burrowing Owl Burrow Replacement Plan, among other measures. In addition, COC **BIO-26** (Habitat Management Land Acquisition), require the project owner to obtain mitigation lands to replace habitat lost from the development of the project. In addition, Table 3-2 and 3-3, in the EACCS list specific avoidance and minimization measures to reduce effects on focal species. CEC staff incorporated these measures into COCs identified below.

Impacts from fugitive dust would be mitigated by implementation of COC **AQ-SC3**, which include watering roads and or stabilizing them with soil binders. Dust suppressants would be durable non-toxic soil stabilizers, and many other activity specific control measures would be applied to reduce fugitive dust and to ensure activities do not create visible dust emissions during construction. COC **AQ-SC4** would require a qualified dust monitor during dust producing activities and require remedial measures if fugitive dust exceeds authorized limits.

To avoid and minimize impacts, staff proposed implementation of general mitigation measures, including COCs **AQ-SC3**, **AQ-SC4**, **BIO-1** through **BIO-7**, **BIO-18**, and **BIO-26**.

With implementation of staff's proposed COCs **AQ-SC3**, **AQ-SC4**, **BIO-1** through **BIO-7**, **BIO-18**, and **BIO-26** impacts to burrowing owl and their foraging habitat would be reduced and full mitigation under CESA would be provided. Staff concluded that this mitigation approach mitigates for impacts to foraging habitat for this species and impacts would be less than significant.

Project Components Outside CEC's Opt-In Certification

Direct impacts to burrowing owls include the loss or degradation of foraging habitat resulting from vegetation clearing or ground disturbance, removal or disturbance of vegetation, including mowing, injury or mortality from collisions with vehicles or construction equipment. Other direct impacts include disturbance from increased noise levels from heavy equipment, increased vehicle traffic, increased human presence, and exposure to fugitive dust, and long-term human presence associated with the construction schedule. Indirect impacts include the loss or degradation of foraging habitat due to the spread of noxious and invasive weeds, soil erosion, exposure to hazardous materials from construction, and altered plant community composition caused by operation of the proposed project. Direct impacts to burrowing owls or their nests could be significant without mitigation. Any action that results in direct impacts to burrowing owls that result in harm would constitute take under CESA.

CEC staff determined that mitigation for impacts to foraging habitat for burrowing owl, a state-listed candidate species, is necessary under CESA and CEQA to offset habitat loss and fully address project-related impacts to the species. The PG&E Standard Construction Measures did not specifically address burrowing owl or its habitat. Therefore, staff developed **MM BIO-9** (San Joaquin Kit Fox, American Badger, Burrowing Owl) which requires pre-construction surveys of areas proposed for disturbance within work areas and within a 500-foot buffer, where legally accessible. This measure also includes no-disturbance buffers if burrowing owls are found within or near the project site to avoid take. If impacts to the species is unavoidable, the qualified biologist would coordinate with PG&E and CDFW to determine if take coverage is necessary.

In addition, to further avoid and minimize impacts, both direct and indirect, from construction activities on burrowing owl the applicant has recommended general impact avoidance and minimization measures to reduce impacts. CEC staff has reviewed these measures and incorporated them into staff's proposed mitigation measures and enhanced them as necessary to reduce effects on burrowing owl should they be present during operation activities. These include **MM BIO-7** (General Impact Avoidance and Minimization Measures), and **MM BIO-13** (Biological Monitor During Construction). These measures are designed to educate workers of the presence and sensitivity of wildlife that may occur in the project area; provide limitations on the work that may occur during the breeding season; require inspection for wildlife under vehicles; reducing or controlling fugitive dust and vehicle speeds; monitoring construction to reduce direct wildlife mortality; and the control of noxious weeds.

With implementation of staff's recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-7**, **MM BIO-9**, and **MM BIO-13**, impacts to burrowing owls during construction would be reduced to less than significant.

Operation

Less Than Significant with Mitigation. Based on the analysis below, the operations associated with the proposed project would not substantially adversely affect burrowing owl, either directly or through habitat modification, and impacts would be less than significant with the implementation of CEC staff's proposed COCs **AQ-SC3**, **AQ-SC4**, **BIO-1** through **BIO-5**, **BIO-7**, **BIO-18**, and **MM BIO-1**, **MM BIO-2**, **MM BIO-5**, **MM BIO-7**, **MM BIO-9**, and **MM BIO-13**.

Project Components Within CEC's Opt-In Certification

Operational impacts are expected to result in minimal impacts, largely because the project site would be a developed facility lacking suitable habitat within its boundaries. To maintain this minimal impact, any necessary maintenance or facility augmentation should follow all required avoidance and minimization measures if a burrowing owl were to enter the facility. Therefore, CEC staff recommended implementation of COCs **AQ-SC3**, **AQ-SC4**, **BIO-1** through **BIO-5**, **BIO-7**, and **BIO-18**.

Project Components Outside CEC's Opt-In Certification

Direct and indirect impacts associated with operation activities would be substantially reduced relative to initial construction activities. There is a potential for burrowing owls to enter the unfenced area prior or during operation activities. Depending on the operational activities direct impacts could include loss of foraging habitat from vegetation clearing or ground disturbance, removal or disturbance of vegetation, including mowing, injury or mortality from collisions with vehicles or construction equipment. Other direct impacts include disturbance from increased noise levels from heavy equipment, increased vehicle traffic, increased human presence, and exposure to fugitive dust, and long-term human presence associated with the construction schedule. Indirect impacts include the loss or degradation of foraging habitat due to the spread of noxious and invasive weeds, soil erosion, exposure to hazardous materials from construction, and altered plant community composition caused by operation of the proposed project. Direct impacts to burrowing owls or their nests could be significant without mitigation.

During operation activities, including routine maintenance, the standard PG&E Construction Measures are included as CEC staff's recommended mitigation measures **MM BIO-1** (Annual Training), **MM BIO-2** (Standard Construction Practices), and **MM BIO-5** (Best Management Practices). The PG&E Standard Measures did not specifically address burrowing owl or its habitat. Therefore, staff developed **MM BIO-9** (San Joaquin Kit Fox, American Badger, Burrowing Owl) which requires pre-construction surveys of areas proposed for disturbance within work areas and within a 500-foot buffer, where legally accessible. This measure also includes no-disturbance buffers if burrowing owls are found within or near the project site to avoid take during operations. If impacts to the species are unavoidable, the qualified biologist would coordinate with PG&E and CDFW to determine if take coverage is necessary.

In addition, to further avoid and minimize impacts, both direct and indirect, from operations activities on burrowing owl the applicant has recommended general impact avoidance and minimization measures to reduce impacts. CEC staff has reviewed these measures and incorporated them into staff's recommended mitigation measures and enhanced them as necessary to reduce effects on burrowing owl should they be present during operation activities. These include **MM BIO-7** (General Impact Avoidance and Minimization Measures), and **MM BIO-13** (Biological Monitor During Construction). These measures are designed to educate workers of the presence and sensitivity of wildlife that may occur in the project area; provide limitations on the work that may occur during the breeding season; require inspection for wildlife under vehicles; reducing or controlling fugitive dust and vehicle speeds; monitoring construction to reduce direct wildlife mortality; and the control of noxious weeds.

With implementation of staff's recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-5**, **MM BIO-7**, **MM BIO-9**, and **MM BIO-13**, impacts to burrowing owls during operations would be reduced to less than significant.

Jeopardy Analysis

The 2024 CESA listing petition reports that western burrowing owls have been lost from approximately 16 percent of their former range, including the coastal Bay Area and parts of the northern Central Valley. An additional 13 percent of their range is nearing extirpation. The proposed project will permanently affect 60.7 acres and temporarily impact 6.7 acres of potential grassland habitat. Despite the presence of suitable nesting areas, no burrowing owls were found during the 2023 through 2025 field surveys. Therefore, the project would not jeopardize the continued existence of the species.

San Joaquin Kit Fox

Construction

Less Than Significant with Mitigation. Based on the analysis below, the operations associated with the proposed project would not substantially adversely affect San Joaquin kit fox, either directly or through habitat modification, and impacts would be less than significant with the implementation of staff's proposed COCs **BIO-1** through **BIO-7**, **BIO-22**, **BIO-26**, and recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-5**, **MM BIO-9**, and **MM BIO-13**.

Project Components Within CEC's Opt-In Certification

The project area is located at the northern extent of the San Joaquin kit fox range (USFWS 2025d) but provides suitable habitat and likely serves as a connectivity corridor through the Altamont Hills, a corridor partially compromised by existing infrastructure development, notably I-580 (EACCS 2010). The project area occurs within the EACCS CZ10, designated as "SJKF East" and the goal is to increase San Joaquin kit fox populations while protecting and enhancing suitable habitat and important regional linkages for the species within this area. While no kit fox were observed during daytime

surveys—consistent with the species' primarily nocturnal behavior—kit foxes may explore and forage within the project area.

If San Joaquin kit fox were to migrate through or forage within the project area, direct impacts to this species could include injury or death resulting from vehicle collision damage or destruction of occupied burrows, disturbance from construction noise or vibration, entrapment of individuals in excavation areas, and loss or degradation of foraging habitat due to soil compaction. Additionally, human-related subsidies—such as food waste, trash, and water sources—could inadvertently attract kit foxes to active construction areas, increasing the risk of vehicle strikes and predation. Indirect impacts could include disruption of movement due to increased traffic and human activity which could potentially alter foraging patterns and habitat use.

The Army Corps of Engineers initiated Section 7 consultation with the USFWS (SPK-2024-00486) regarding potential project effects on the federally endangered San Joaquin kit fox and other identified species. The USFWS determined that the proposed project may affect but is not likely to adversely affect the kit fox. The USFWS stated in the PBO that potential adverse effect to the kit fox from the proposed project were unlikely to occur and therefore were discountable for purposes of the consultation based on the project area being within the northern limits of the known kit fox dispersal and migration boundary, and minimal impacts would occur, and the conservation measures proposed would minimize adverse effects to the species. These conservation measures have been incorporated into staff's COCs.

The project owner has requested take authorization for San Joaquin kit fox which is afforded protections under CESA. Staff incorporated incidental take permit conditions, consistent with applicable LORS, as part of the take authorization under the CEC's in-lieu permitting authority for the San Joaquin kit fox. CEC staff, in coordination with CDFW, have developed the following mitigation metric that are proposed to reduce impacts from the proposed project to less than significant levels and comport with CDFW requirements to meet the fully mitigate standard required by CESA. This approach also follows the EACCS Standardized Mitigation Ratios for San Joaquin Kit Fox Table 3-11 (EACCS 2010) for impacts located inside the SJKF East mitigation area.

- Mitigation Ratio: 3:1 ratio for permanent and temporary impacts that result in the loss of ecological value and remove habitat from the project site.
- Impact Calculation: There are 60.7 acres of permanent impacts and 6.7 acres of temporary impacts. At the proposed 3:1 ratio 188.8 acres would be required to offset these impacts.

These measures have been incorporated into staff's proposed COC **BIO-22**, (San Joaquin kit fox Impact Avoidance, Minimization, and Take Mitigation Measures), which requires pre-construction surveys, monitoring during construction, among other measures to minimize harm to the kit fox. In addition, COC **BIO-26** (Habitat

Management Land Acquisition) which require the project owner to obtain mitigation lands to replace habitat lost from the development of the project.

To avoid and minimize impacts, staff proposed implementation of general mitigation measures, including COCs **BIO-1** through **BIO-7**.

With implementation of CEC staff's proposed COCs **BIO-1** through **BIO-7**, **BIO-22**, and **BIO-26** impacts to San Joaquin kit fox and their habitat would be reduced and full mitigation under CESA would be provided. CEC staff concluded that this mitigation approach mitigates for impacts to habitat for this species and impacts would be less than significant.

Project Components Outside CEC's Opt-In Certification

The project area is located at the northern extent of the San Joaquin kit fox range (USFWS 2025d) but provides suitable habitat and likely serves as a connectivity corridor through the Altamont Hills, a corridor partially compromised by existing infrastructure development, notably I-580 (EACCS 2010). The project area occurs within the EACCS CZ10, designated as "SJKF East" and the goal is to increase San Joaquin kit fox populations while protecting and enhancing suitable habitat and important regional linkages for the species within this area. While no kit fox were observed during daytime surveys—consistent with the species' primarily nocturnal behavior—kit foxes may explore and forage within the project area.

If San Joaquin kit fox were to migrate through or forage within the project area, direct impacts to this species could include injury or death resulting from vehicle collision damage or destruction of occupied burrows, disturbance from construction noise/ vibration, entrapment of individuals in excavation areas, and loss or degradation of foraging habitat due to soil compaction. Additionally, human-related subsidies—such as food waste, trash, and water sources—could inadvertently attract kit foxes to active construction areas, increasing the risk of vehicle strikes and predation. Indirect impacts could include disruption of movement due to increased traffic and human activity which could potentially alter foraging patterns and habitat use.

To avoid and minimize impacts to San Joaquin kit fox during operations, and as part of the standard PG&E Construction Measures, staff recommends that PG&E implement **MM BIO-1** (Annual Training), **MM BIO-2** (Standard Construction Practices), and **MM BIO-5** (Best Management Practices). The PG&E Standard Construction Measures did not specifically address San Joaquin kit fox or its habitat. Therefore, CEC staff developed **MM BIO-9** (San Joaquin Kit Fox, American Badger, Burrowing Owl) which requires pre-construction surveys of areas proposed for disturbance within work areas and within a 500-foot buffer, where legally accessible. This measure also includes no-disturbance buffers if San Joaquin kit fox are found within or near the project site to avoid take. If impacts to the species is unavoidable, the qualified biologist would coordinate with PG&E and CDFW to determine if take coverage is necessary.

To further avoid and minimize impacts, both direct and indirect, from construction activities on San Joaquin kit fox the applicant has recommended general impact avoidance and minimization measures to reduce impacts. CEC staff has reviewed these measures and incorporated them into staff's recommended mitigation measures and enhanced them as necessary to reduce effects on San Joaquin kit fox should they be present during operation activities. This includes **MM BIO-13** (Biological Monitor During Construction). These measures are designed to educate workers of the presence and sensitivity of wildlife that may occur in the project area; provide limitations on the work that may occur during the breeding season; require inspection for wildlife under vehicles; reducing or controlling fugitive dust and vehicle speeds; monitoring construction to reduce direct wildlife mortality; and the control of noxious weeds.

With implementation of CEC staff's recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-5**, **MM BIO-9**, and **MM BIO-13**, impacts to San Joaquin kit fox during construction would be reduced to less than significant.

Operation

Less Than Significant with Mitigation. Based on the analysis below, the operations associated with the proposed project would not substantially adversely affect San Joaquin kit fox, either directly or through habitat modifications, and impacts would be less than significant with the implementation of CEC staff's proposed COCs **BIO-1** through **BIO-7**, **BIO-22**, **BIO-25**, **BIO-27**, and recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-5**, **MM BIO-9**, and **MM BIO-13**.

Project Components Within CEC's Opt-In Certification

Operational impacts are expected to result in minimal impacts, largely because the project site would be a developed facility lacking suitable habitat within its boundaries. To maintain this minimal impact, any necessary maintenance or facility augmentation should follow all required avoidance and minimization measures if a San Joaquin kit fox were to enter the facility. Therefore, CEC staff recommended implementation of COCs **BIO-1** through **BIO-7**, **BIO-22** to reduce impacts to San Joaquin kit fox to less than significant.

Project Components Outside CEC's Opt-In Certification

Direct and indirect impacts associated with operation activities would be substantially reduced relative to initial construction activities. There is a potential for San Joaquin kit fox to enter the unfenced area prior or during operation activities. Depending on the operational activities direct impacts could include loss of foraging habitat from vegetation clearing or ground disturbance, removal or disturbance of vegetation, including mowing, injury or mortality from collisions with vehicles or construction equipment. Other direct impacts include disturbance from increased noise levels from heavy equipment, increased vehicle traffic, increased human presence, and exposure to fugitive dust, and long-term human presence associated with the construction schedule. Indirect impacts include the loss or degradation of foraging habitat due to the spread of

noxious and invasive weeds, soil erosion, exposure to hazardous materials from construction, and altered plant community composition caused by operation of the proposed project. Direct impacts to San Joaquin kit fox or their dens could be significant without mitigation.

To avoid and minimize impacts to San Joaquin kit fox during operations, and as part of the standard PG&E Construction Measures, CEC staff recommends that PG&E implement **MM BIO-1** (Annual Training), **MM BIO-2** (Standard Construction Practices), and **MM BIO-5** (Best Management Practices). To further avoid and minimize impacts, both direct and indirect, from operations activities on San Joaquin kit fox the applicant has recommended general impact avoidance and minimization measures to reduce impacts. CEC staff has reviewed these measures and incorporated them into staff's proposed mitigation measures and enhanced them as necessary to reduce effects on San Joaquin kit fox should they be present during operation activities. These include **MM BIO-9** (San Joaquin Kit Fox, American Badger, Burrowing Owl), and **MM BIO-13** (Biological Monitor During Construction). These **MMs** are designed to educate workers of the presence and sensitivity of wildlife that may occur in the project area; provide limitations on the work that may occur during the breeding season; require inspection for wildlife under vehicles; reducing or controlling fugitive dust and vehicle speeds; monitoring construction to reduce direct wildlife mortality; and the control of noxious weeds.

With implementation of staff's recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-5**, **MM BIO-9**, and **MM BIO-13**, impacts to San Joaquin kit fox during operations would be reduced to less than significant.

Jeopardy Analysis

According to federal conservation guidelines from the USFWS, San Joaquin kit fox populations are naturally volatile, fluctuating based on environmental conditions and prey availability. However, widespread habitat loss from farming and urban expansion has fragmented their territory, making protected movement corridors essential for genetic health and long-term survival. The proposed project will permanently affect 60.7 acres and temporarily impact 6.7 acres of grassland used for dispersal and migration. Because the site lacks suitable dens or breeding grounds, the project would not jeopardize the continued existence of the species.

American Badger

Construction

Less Than Significant with Mitigation. Based on the analysis below, the proposed project would not substantially affect American badger, either directly or through habitat modifications, and impacts would be less than significant with the implementation of CEC staff's proposed COCs **BIO-1** through **BIO-7**, **BIO-23**, **BIO-26**, and recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-5**, **MM BIO-9**, and **MM BIO-13**.

Project Components Within CEC's Opt-In Certification

American badger is known to occur in the project vicinity but was not detected during the applicant's surveys. This species has a high potential to occur within the project area.

The American badger is a covered focal species under the EACCS, which has the goal of maintaining the badger population while protecting and enhancing important regional linkages the conservation area. The project area occurs within the EACCS CZ10, which has been identified as having a total of 20,793 acres of modeled suitable habitat for the badger.

If a den is documented on the project site, direct and indirect impacts on the den should be avoided during construction and post-project activities (EACCS 2010). Direct impacts may include the loss of habitat, loss of individuals of this species due to construction activities, including the risk of crushing or entombing in burrows, vehicle and construction equipment strikes, increased levels of fugitive dust, noise, and increased human presence. Indirect impacts to American badger include alterations of soils, such as compaction that could preclude burrowing, alteration in prey base, and the spread of invasive plants and noxious weeds, as well as night lighting. These potential impacts would be considered significant and therefore require mitigation.

To avoid and minimize impacts, staff proposed implementation of general mitigation measures, including COCs **BIO-1** through **BIO-7**. In addition, staff proposed COC **BIO-23** (American Badger Avoidance and Minimization Measures) and **BIO-26** (Habitat Management Land Acquisition) which provides mitigation for impacts to denning, foraging and dispersal habitat for American badger shall be implemented.

With implementation of CEC staff's proposed COCs **BIO-1** through **BIO-7**, **BIO-23**, and **BIO-26** impacts to American badger and their habitat would be reduced to less than significant.

Project Components Outside CEC's Opt-In Certification

To avoid and minimize impacts to American badger during construction, and as part of the standard PG&E Construction Measures, CEC staff recommends that PG&E implement **MM BIO-1** (Annual Training), **MM BIO-2** (Standard Construction Practices), and **MM BIO-5** (Best Management Practices). The PG&E Standard Construction Measures did not specifically address American Badger or its habitat. Therefore, staff developed **MM BIO-9** (San Joaquin Kit Fox, American Badger, Burrowing Owl) which requires pre-construction surveys of areas proposed for disturbance within work areas and within a 500-foot buffer, where legally accessible. This measure also includes no-disturbance buffers if American Badger are found within or near the project site to avoid take. If impacts to the species is unavoidable, the qualified biologist would coordinate with PG&E and CDFW to determine if take coverage is necessary.

To further avoid and minimize impacts, both direct and indirect, from construction activities on American badger the applicant has recommended general impact

avoidance and minimization measures to reduce impacts. Staff has reviewed these measures and incorporated them into staff's proposed mitigation measures and enhanced them as necessary to reduce effects on American badger should they be present during operation activities. This includes **MM BIO-13** (Biological Monitor During Construction). These **MMs** are designed to educate workers of the presence and sensitivity of wildlife that may occur in the project area; provide limitations on the work that may occur during the breeding season; require inspection for wildlife under vehicles; reducing or controlling fugitive dust and vehicle speeds; monitoring construction to reduce direct wildlife mortality; and the control of noxious weeds.

With implementation of CEC staff's recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-5**, **MM BIO-9**, and **MM BIO-13**, impacts to American badger during construction would be reduced to less than significant.

Operation

Less Than Significant with Mitigation. Based on the analysis below, the operations associated with the proposed project would not substantially adversely affect American badger, either directly or through habitat modifications, and impacts would be less than significant with the implementation of staff's proposed COCs **BIO-1** through **BIO-7**, **BIO-23**, **BIO-25**, and recommended mitigation measures **MM BIO-1**, **MM BIO-4**, and **MM BIO-9**.

Project Components Within CEC's Opt-In Certification

Operational impacts are expected to result in minimal impacts, largely because the project site would be a developed facility lacking suitable habitat within its boundaries. To maintain this minimal impact, any necessary maintenance or facility augmentation should follow all required avoidance and minimization measures if a badger were to enter the facility. Therefore, staff recommended implementation of COCs **BIO-1** through **BIO-7**, **BIO-23** to reduce impacts to American badger to less than significant.

Project Components Outside CEC's Opt-In Certification

Direct and indirect impacts associated with operation activities would be substantially reduced relative to initial construction activities. There is a potential for American badger to enter the unfenced area prior or during operation activities. Depending on the operational activities direct impacts could include loss of foraging habitat from vegetation clearing or ground disturbance, removal or disturbance of vegetation, including mowing, injury or mortality from collisions with vehicles or construction equipment. Other direct impacts include disturbance from increased noise levels from heavy equipment, increased vehicle traffic, increased human presence, and exposure to fugitive dust, and long-term human presence associated with the construction schedule. Indirect impacts include the loss or degradation of foraging habitat due to the spread of noxious and invasive weeds, soil erosion, exposure to hazardous materials from construction, and altered plant community composition caused by operation of the proposed project. Direct impacts to American badger or their dens could be significant without mitigation.

To avoid and minimize impacts, both direct and indirect, from operations activities on American badger the applicant has recommended general impact avoidance and minimization measures to reduce impacts. CEC staff has reviewed these measures and incorporated them into staff's recommended mitigation measures and enhanced them as necessary to reduce effects on American badger fox should they be present during operation activities. These include **MM BIO-1** (Worker Environmental Awareness Training), **MM BIO-2** (Standard Construction Practices), **MM BIO-9** (San Joaquin Kit Fox, American Badger, Burrowing Owl), and **MM BIO-13** (Biological Monitor During Construction). These **MM**s are designed to educate workers of the presence and sensitivity of wildlife that may occur in the project area; provide limitations on the work that may occur during the breeding season; require inspection for wildlife under vehicles; reducing or controlling fugitive dust and vehicle speeds; monitoring construction to reduce direct wildlife mortality; and the control of noxious weeds.

With implementation of staff's recommended mitigation measures **MM BIO-1**, **MM BIO-4**, and **MM BIO-9**, impacts to American badger during operations would be reduced to less than significant.

Nitrogen Deposition

Nitrogen deposition is the input to an ecosystem of nitrogen-based atmospheric pollutants resulting primarily from vehicle, agriculture, and industrial emissions. This deposition acts as artificial fertilization, particularly impacting sensitive, naturally nitrogen-limited ecosystems such as serpentine soils. Increased nitrogen can shift species composition by favoring the growth of invasive annual grasses, which may eventually displace native species and alter the habitat type.

Mechanisms by which nitrogen deposition can lead to impacts on sensitive species and vegetation communities include changes in species composition among native plants and the enhancement of invasive species such as grasses (Fenn et al. 2003 and CEC 2006). The increased dominance and growth of invasive annual non-native species is especially prevalent in low biomass vegetation communities that are naturally nitrogen-limited (in certain soils such as serpentine soils). Nitrogen deposition artificially fertilizes the soil and creates better conditions for non-native species to persist and to ultimately displace native species, resulting in type conversion (conversion of one habitat type to another). Increased nitrogen deposition in nitrogen poor soils has allowed for the proliferation of non-native species that can crowd out native species. Other studies have found that nitrogen enrichment promotes eutrophication in wetlands and reduces biodiversity, undermining habitat stability (Yousef et al. 2021). This suggest that nitrogen deposition has the potential to adversely affect a variety of aquatic species including California red-legged frog.

Griffis-Kyle (2007) found that nitrite (NO_2^-) is highly toxic to amphibians, especially during early life stages. In experiments with wood frogs and tiger salamanders (species similar to those present in project area), exposure to nitrite at concentrations as low as 0.5 mg/L NO_2-N caused significant mortality in early larval stages. The study found that

embryos exposed to nitrite showed delayed mortality, with most deaths occurring after hatching, indicating that traditional toxicity tests (which often focus on a single life stage) may underestimate risk. However, Meredith & Whiteman (2008) found that embryos of three amphibian species (axolotl (*Ambystoma mexicanum*), Cope's gray treefrog (*Hyla chrysoscelis*), and green frog (*Rana clamitans*)) exposed to nitrate concentrations ranging from 0 to 500 mg/L did not show significant differences in mortality even at concentrations far exceeding those typically found in agricultural runoff. Only at extremely high concentrations (300–500 mg/L) was early hatching observed in *Ambystoma mexicanum*, which may have minor fitness implications, but no significant effect on larval length at hatching was detected. The study suggests that these amphibian embryos are highly tolerant to nitrate, likely due to physiological or developmental mechanisms that limit nitrate uptake or conversion to toxic nitrite during early development. Daam et al. (2020) found that that while acute lethal effects from nitrate and ammonium are unlikely at typical environmental concentrations, chronic and sublethal effects, as well as synergistic effects with other stressors, remain a concern.

One approach for quantifying nitrogen deposition is through "critical load" which is defined as the input of a pollutant below which no detrimental ecological effects have been documented to occur over long-term studies.

CEC staff evaluates nitrogen deposition impacts by considering protected areas within a 6-mile radius of the project site. These areas include CDFW sensitive natural communities and USFWS designated critical habitat. There is designated critical habitat within the project site. For a baseline nitrogen deposition estimate, CEC staff used the Community Multiscale Air Quality (CMAQ) modeling system, which provides estimates of ozone, particulates, toxics, and acid deposition. Staff considered the most recent CMAQ-predicted value as the best available data to determine baseline nitrogen deposition, which ranges from 3.01 to 6.02 kg/ha/yr (CMAQ 2019).

During operation, there would be emissions of NOx from the testing, maintenance, and emergency use of two diesel backup generators. These emissions would result in nitrogen deposition around the project site. The proposed project would include two Rolls Royce generators rated at 4,680 horsepower each. Each generator is fitted with an ecoCUBE with a selective catalytic reduction (SCR), diesel particulate filter, and diesel oxidation catalyst allowing the generators to meet the U.S. Environmental Protection Agency (EPA) Tier 4 standard.

In order to determine the potential impacts during operation, the American Meteorological Society/U.S. Environmental Protection Agency Regulatory Model (AERMOD) Version 23132 was used to model the concentration of nitrogen around the project site using wet and dry deposition algorithms. The emissions from the generators were estimated assuming compliance with the U.S. EPA Tier 4 standard and operation of up to 200 hours per year (100 hours for maintenance and testing and 100 hours for emergency use) (BAAQMD 2022). Ammonia (NH3) is a product of combustion with

equipment having SCR equipment. As the generators are equipped with SCR, emissions of NH3 were estimated and added to the NOx emissions for total nitrogen emissions.

To determine potential environmental impacts, the AERMOD model is used to calculate the annual total nitrogen deposition rates within 6 miles of the project site. This calculation involves modeling both the dry settling (using a resistance model) and wet removal by rain (using washout coefficients) of nitrogen compounds, specifically HNO3 parameters. The final output, initially in g/m2, is converted to kg/ha/yr for direct comparison with established nitrogen critical loads for biological resources.

Use of emergency backup generators onsite would introduce a new source of nitrogen deposition. The modeling showed that the highest nitrogen loading from operation of the project would occur just outside the southern boundary as shown in Figure 3.2.9 and Appendix 3.2G of the docketed application (Dudek 2025hh). The maximum nitrogen loading directly adjacent to the source is 2.75 kg/ha/yr. However, the nitrogen load reduces significantly with distance from the source and is less than 1 kg/ha/yr at the closest freshwater pond approximately 0.4 mile west of the project site.

Although precise, species-specific critical loads are not universally established, a standard threshold of 5 kg/ha/yr is generally applied for analysis as the maximum level an ecosystem can receive without experiencing significant harmful effects on sensitive plants and wildlife or other ecological processes (CEC 2006). The baseline nitrogen loading for the project area ranges from 3.01 to 6.02 kg/ha/yr (CMAQ 2019) which exceeds the critical load in some locations. Areas with baseline data of 6.02 kg/ha/yr are closely associated with the I-580 transportation corridor and other developed areas. With the exception of the project site, modeling data concludes that testing of the backup generators is not expected to increase baseline levels of nitrogen above the 5 kg/ha/yr threshold for areas supporting designated critical habitat for California red-legged frog or increase baseline loads at the known breeding pond.

Impacts to designated critical habitat for California red-legged frogs and other species would be mitigated through COC **BIO-26** (Habitat Management Land Acquisition) which requires the acquisition of 182 acres of habitat to offset project related impacts. Similarly, the nitrogen loading beyond the 5 kg/ha/yr threshold is not expected to adversely affect other sensitive biological resources, including California red-legged frog, California tiger salamander, Crotch's bumble bee, big tarplant, birds, and aquatic resources found (Patterson Run). While there may be other biological species within 6 miles of the project site that are not listed here, the annual nitrogen deposition is well below the maximum threshold indicated above and would not be above other species' critical nitrogen loads. Therefore, impacts from nitrogen deposition would be less than significant.

Thermal Runaway and BESS Fires

As described in **Section 5.7, Hazards, Hazardous Materials/Waste, and Wildfire**, the risk of thermal runaway or BESS fire is low and considering the infrequent,

irregular, and unplanned nature of such events and the short exposure duration, the potential for adverse impact would be a very low probability event. Although the risk is low during operation of the project, it is possible that the BESS system could be subject to thermal runaway and result in a battery fire. Fires at battery storage facilities can be difficult to extinguish and can result in the discharge of hydrogen fluoride, heavy metals such as lithium, cobalt, nickel and copper, and semi-volatile organic compounds (SVOCs) (TEEX 2024). Should a thermal runaway event occur, the BESS enclosures are designed to prevent fire from spreading to adjacent units.

Potential impacts from a BESS fire on special status plant and wildlife species could occur from smoke and fine particles contaminating habitat and water sources (Claassen et al., 2024). Impacts could include risks from chemical exposure, smoke inhalation, soil and water contamination, mortality, and habitat degradation. A BESS fire would be expected to pose a high risk to special status species if the smoke plume deposits chemicals in the project area for species with limited ranges, species that forage on plants that would contain harmful chemicals, and species that rely on ephemeral water sources that could concentrate harmful chemicals should a fire occur. Fossorial species could be exposed to contaminated soil when burrowing.

Chemicals from firefighting runoff can contaminate forage and water, while noise and human activity may disrupt critical behaviors for special status species such as foraging and burrow use. Soil contamination and habitat degradation in adjacent areas may also persist long after the fire event. Post fire clean up or soil sampling could result in disturbance to burrows and animals in adjacent habitat and contaminated spoils could transport dust far from the initial source of the fire. To reduce these impacts the applicant has proposed a series of mitigation measures to reduce fire risk, contain BESS fires, and ensure access to local firefighting personnel via a Fire Management and Prevention Plan. Project design features include on-site fire hydrants, multiple fire detection systems within individual BESS enclosures (including infrared camera system to trigger an alarm in case of an onsite fire, include monitors to shut down and mitigate hazards, ensures compliance with California Fire Code, and requires landscape fabric be installed under the surface of all laydown yards to prevent vegetation growth to comply with fire prevention standards.

Per **Section 4.4, Worker Safety and Fire Protection**, staff recommended COCs **WORKER SAFETY-1** and **WORKER SAFETY-2** which require Fire Management and Prevention Plans for construction and operation, **WORKER SAFETY-7** and **WORKER SAFETY-8** which include several actions to reduce the effects of accidents related to the BESS and require fire responder training for BESS fires. In addition, COC **HAZ-9** would require an air and water sampling plan and would require the project owner to develop an air sampling plan to ensure that information can be relayed to first responders in a timely manner. Additionally, water quality testing would be conducted prior to any disposal of water used for an incident. To further reduce and manage the risk of BESS fires to biological resources staff recommend COC **BIO-27** (Post BESS Fire Monitoring and Management Plan) which includes soil testing and remedial actions

including pre- and post-fire ecological monitoring, runoff containment, and restrictions on cleanup activities during sensitive biological periods. See **Section 4.4, Worker Safety and Fire Protection** and **Section 5.7 Hazards, Hazardous Materials/Waste, and Wildfire** for further information.

In addition, CEC staff recommended COC **BIO-27**, which would require that any special status species found within the project area be translocated to adjacent habitat, thereby reducing the risk of incidental take or injury during potential wildfire events.

With the implementation of proposed COCs, **WORKER SAFETY-1** and **WORKER SAFETY-2, WORKER SAFETY-7** and **WORKER SAFETY-8, HAZ-9** and **BIO-27** impacts from a potential BESS fire would likely be reduced to less than significant level.

b. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Construction

No Impact. Based on the analysis below, the proposed project would not cause substantial adverse effects on any riparian habitat or other sensitive natural community Although no riparian habitat or other sensitive natural communities are present, staff proposed the implementation of COCs as a standard protective measure. CEC staff's proposed COCs include **BIO-1** through **BIO-8**, **BIO-25**, **BIO-26**, and **BIO-27**. There would be no impact to riparian habitat or sensitive natural communities.

Project Components Within CEC's Opt-In Certification

Patterson Run within the project site is characterized as a degraded ephemeral waterway with flows typically limited to March through May. While the presence of a few cottonwood and willows confirms a higher water table, its ecological integrity is considered poor due to historic and recent livestock use, invasive annual grasses (Avena fatua and Bromus sp.) present along the banks and extending out through upland grassland habitat, and damage from a late 2025 wildfire.

WORKER SAFETY-7 and **WORKER SAFETY-8** which include several actions to reduce the effects of accidents related to the BESS and require fire responder training for BESS fires. In addition, COC **HAZ-9** would require an air and water sampling plan and would require the project owner to develop an air sampling plan to ensure that information can be relayed to first responders in a timely manner. Additionally, water quality testing would be conducted prior to any disposal of water used for an incident. To further reduce and manage the risk of BESS fires to biological resources staff recommend COC **BIO-27** (Post BESS Fire Monitoring and Management Plan) which includes soil testing and remedial actions including pre- and post-fire ecological

monitoring, runoff containment, and restrictions on cleanup activities during sensitive biological periods.

No Impact. Based on the analysis below, the proposed project would not cause substantial adverse effects on any riparian habitat or other sensitive natural community Although no riparian habitat or other sensitive natural communities are present, staff proposed the implementation of COCs as a standard protective measure. CEC staff's proposed COCs include **BIO-1** through **BIO-8**, **BIO-25**, **BIO-26**, and **BIO-27**. There would be no impact to riparian habitat or sensitive natural communities.

Project Components Outside CEC's Opt-In Certification

No Impact. There are no sensitive natural communities or riparian habitat in the project area.

Operation

No Impact. Based on the analysis below, operation of the project would have no effect on any riparian habitat or other sensitive natural community and there would be no impact.

Project Components Within CEC's Opt-In Certification

Proposed project design features of a low water crossing and outfall structure to be placed within the Patterson Run corridor is discussed in section c) below.

Project Components Outside CEC's Opt-In Certification

There are no sensitive natural communities or riparian habitat in the project area. Direct and indirect impacts to native vegetation communities from operation would be similar in type but greatly reduced in magnitude compared to those discussed for construction. Vegetation removal and grading activities would occur during the construction phase of the project. During operation, all activities would occur in previously developed areas within the project area or along existing access roads. Periodic vegetation maintenance would be required to maintain defensible space around the project facilities and to comply with vegetation management requirements. See **Section 4.4, Worker Safety and Fire Protection** and **Section 5.7 Hazards, Hazardous Materials/Waste, and Wildfire** for further information.

c. Would the project 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?

Construction

Less Than Significant with Mitigation. Based on the analysis below, the proposed project would not substantially affect state and federally protected wetland and non-wetland

waters, and impacts would be less than significant with the implementation of CEC staff's proposed COCs **AQ-SC3**, **AQ-SC4**, **HAZ-1**, **WATER-1**, **WATER-2**, **WATER-4**, **BIO-1** through **BIO-7**, **BIO-8**, **BIO-25**, **BIO-26**, **BIO-27**, and recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-4**, **MM BIO-5**, **MM BIO-7**, and **MM BIO-13**.

Project Components Within CEC's Opt-In Certification

A preliminary wetland assessment was first conducted on August 2, 2023, during the initial reconnaissance survey. The purpose of this initial survey was to generally identify and coarsely map potential aquatic resources that might necessitate more formal, protocol-level jurisdictional delineations. Subsequently, a complete aquatic resources delineation was carried out on January 18, 2024, concurrent with a reconnaissance-level biological field survey. This delineation identified and mapped the full extent of aquatic resources throughout the project site that could be federal waters under the jurisdiction of USACE, non-wetland waters of the state under the RWQCB, or considered streambeds regulated by CDFW.

The project owner evaluated aquatic resources within the jurisdictional study area (project site and a 250-foot buffer) for a preliminary jurisdictional determination. One jurisdictional feature was identified within the gen-tie alignment. Patterson Run Creek is an ephemeral drainage and is subject to Sections 404 and 401 of the Clean Water Act. Under the Warren Alquist Act, the CEC has in-lieu permitting authority to issue a Lake and Streambed Alteration Agreement when project activities would result in impacts to waters regulated under Fish and Game Code section 1600 et seq.

The proposed project would include two features requiring the placement of fill material into areas identified as jurisdictional waters: a new 36-inch diameter corrugated metal pipe designed to link the southwestern detention basin with the existing Patterson Pass Road culvert inlet, and a proposed low water crossing within Patterson Run Creek. Approximately 10 cubic yards (270 cubic feet) of clean rip rap would be installed at the pipe outfall to control discharge velocity and prevent erosion. The low water crossing would include minor grading to the bed and banks of Patterson Run Creek and placement of rip rap to create a stable point of crossing for maintenance activities within the gen-tie alignment. The project owner did not include approximately 150 square feet near the top of bank in the original Lake and Streambed Notification included with the application; however, staff, in coordination with CDFW, determined that the entirety of the 1,600 square feet impacted by construction of the low water crossing is within their jurisdiction, as described below. Work would occur between May 1 and October 31.

Direct impacts to state and federal waters would include the removal of native vegetation, the discharge of fill, degradation of water quality, and increased erosion and sediment transport. Permanent impacts to Patterson Run would result from improvements to an existing stormwater outfall and the installation of a low water crossing. The stormwater outfall improvements would impact approximately 80 square feet of Patterson Run Creek and 8 linear feet parallel to the flow of Patterson Run

caused by the excavation of approximately 16 cubic yards of material from the stream and placement of approximately 3 cubic yards of native fill and 5 cubic yards of riprap below the top of bank. The low water crossing will impact approximately 1,600 square feet and 30 linear feet of Patterson Run for the excavation of approximately 18 cubic yards of material and placement of approximately 17 cubic yards of imported fill and 30 cubic yards of riprap below top of bank. A total of approximately 1,680 square feet and 38 linear feet of the Patterson Run Creek would be permanently impacted by these activities. No temporary impacts are anticipated, as access routes are in upland areas adjacent to Patterson Run Creek.

Indirect impacts would include inadvertent spillover impacts outside of the construction footprint, dust accumulation on adjacent native habitats, chemical spills, stormwater erosion and sedimentation and increased wildfire risk. To reduce fugitive dust resulting from project construction and to minimize adverse air quality impacts, the project would employ dust control measures in accordance with the Air Quality Management District's Rules 401 and 403.2, which would limit the amount of fugitive dust generated during construction. Indirect impacts to waters of the state may include changes to erosion and sedimentation patterns around the outfall and ford locations due to increased surface roughness and altered channel dimensions; increased turbidity due to ground disturbance associated with the overall project; and increased risk of pollutants reaching Patterson Run due to the low water crossing installation and vehicle/equipment use for project construction and operation. Indirect impacts associated with erosion and pollutants would be minimized with the implementation of various best management practices.

Project construction requires adherence to multiple permits and plans to manage stormwater effectively. The Construction General Permit (CGP) mandates the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP), which outlines specific Best Management Practices (BMPs) to control run-on and runoff during construction activities. Additionally, CEC staff recommended the project owner implement a comprehensive Drainage, Erosion, and Sediment Control Plan (DESCP). This plan would cover runoff mitigation throughout the construction, operation, maintenance, and decommissioning phases of the project.

The final grading plan would incorporate specific erosion control facilities designed to contain silt deposits and ensure the safe discharge of silt-free stormwater into existing and proposed drainage facilities during the rainy season (October 1 to April 15), once rough grading is complete. The project would also integrate stormwater detention and Low Impact Development (LID) features designed in compliance with the Stormwater Technical Guidance Manual. Several LID features are proposed to minimize off-site impacts:

- Bioretention Basins: These features would consist of permeable gravel with a perforated underdrain pipe, topped by a permeable bioretention soil mix to filter and slow water flow. A riser outlet structure would be included to manage overflow from excessive storm events.

- Perimeter Outlets: Ten stormwater outlets are planned around the facility's perimeter (excluding the southwest boundary). These outlets would utilize riprap, which in combination with the basins, would further reduce the velocity of off-site stormwater flow.

The goal of these measures is to maintain minimal off-site stormwater flow velocities. This prevents erosive scour of sediments, thereby avoiding downstream siltation, off-site flooding, and overcapacity issues in existing drainage infrastructure. As a result, these controls would ensure that the project prevents water quality impacts from non-stormwater discharges.

The following BMPs would be implemented during construction to reduce potential indirect impacts to sensitive and protected resources to a less than significant level:

- Erosion and Sediment Control: Develop and implement erosion control measures per RWQCB Construction General Permit requirements to prevent increased siltation and pollutant release into receiving waters.
- Area Limitations: Confine the disturbance footprint to the maximum extent feasible, prioritizing the use of pre-existing access routes. Staging, storage, and excavation shall be positioned within previously disturbed areas and limited to the smallest footprint.
- Wildlife Protection (Trenches): Cover all open trenches exceeding 2 feet in depth with rigid materials (e.g., plywood) at the end of each workday or install earthen/wooden escape ramps. Conduct thorough inspections for trapped wildlife before backfilling operations. Contact the DB(s) and/or Designated Monitor(s) immediately for handling injured animals.
- Wildlife Protection (Pipes): Inspect all stored pipes/culverts daily for sensitive species (burrowing owls, California tiger salamander, California red-legged frog, nesting birds, etc.) before use. Capping pipe ends overnight is the preferred preventative measure. If wildlife is found within a pipe, movement is prohibited until the animal leaves voluntarily or is relocated by the Designated Biologist and/or Designated Monitor.

The project owner engaged in pre-application coordination with the Central Valley RWQCB (Dudek 2025nnn). The project owner, in the application, stated the project would result in 0.04 acres of permanent fill impacts to Patterson Run Creek (approximately 34 cubic yards of excavation, 55 cubic yards of fill, and 38 linear feet of impact). The project owner agreed to provide compensatory mitigation, which, in no case, will be reduced below 0.12 acre of preserved waters. The project owner also submitted an ACOE Nationwide Permit (NWP) application in July 2024 (AMLGMN 2024xx). The project owner has committed to a 3:1 mitigation ratio, preserving a total of 2.80 acres of various aquatic habitats, including ephemeral drainage (0.74 acres), pond (0.73 acres), swale (0.97 acres), and wetlands (0.36 acres). The proposed mitigation area is located within the 213-acre Mulqueeney Ranch, immediately west of the proposed project.

CEC staff, in coordination with CDFW, has developed the following mitigation metrics proposed to reduce impacts from the proposed project to less than significant levels and comport with CDFW requirements.

- Mitigation Ratio: 1:1 ratio for permanent impacts that result in the loss of ecological value to plants and wildlife. These features include rip rap placement at the outfall structure and installation of the low water crossing.
- Impact Calculation: The project owner shall provide compensation for permanent impacts to 2,100 square feet of stream habitat through creation, restoration and/or enhancement of aquatic habitat within CZ10 subject to CPM approval.

This includes the implementation of COC **BIO-25** (Lake and Streambed Equivalency Conditions) which was drafted in coordination with CDFW to meet in-lieu permitting authority. For projects under the exclusive jurisdiction of the CEC, measures included in Lake and Streambed Alteration Agreements may be granted through the CEC's certification instead of ("in-lieu of") a Lake and Streambed Alteration Agreement by CDFW. This condition includes measures which would be included in a typical CDFW Lake and Streambed Alteration Agreement for a similar project. These conditions would address the construction of the project and require the acquisition of compensatory mitigation lands at the prescribed ratios. In addition, impacts to jurisdictional features and their associated resources are protected by staffs recommended COCs required to protect biological resources and water quality. This includes proposed COC **BIO-26** (Habitat Management Land Acquisition) which would offset the permanent loss of and degradation to jurisdictional waters, including riparian habitat, by mitigating at a 3:1 ratio (protected: impacted). Mitigation shall include permanent protection of habitat through placement of a conservation easement and funding of an endowment for long-term management of the mitigation site as outlined in COC **BIO-26**.

In addition, proposed COCs **AQ-SC3**, **AQ-SC4**, **HAZ-1**, **WATER-1**, **WATER-2**, and **WATER-4** would be required. These measures include pre-construction surveys, monitoring, habitat restoration, weed and invasive species control, storm water management (SWPPP), worker training, spill containment and reporting, dust control, and verification of Waste Discharge Requirements (WDR) permit requirements. The implementation of the SWPPP would also ensure that the development of the site would not cause substantial degradation in the quality, or an increase in the rate or volume, of stormwater runoff from the site during construction. Staff recommended COC **WATER-1** to ensure the project complies with the requirements contained in the State Water Resources Control Board's National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities. A project operations Drainage, Erosion, and Sedimentation Control Plan (DESCP) should be prepared to monitor and manage both onsite and offsite stormwater events during construction, operation, maintenance, and decommissioning, per proposed COC **WATER-2**. In addition, implementation of **WATER-4** (Compliance with Clean Water Act Sections 401 & 404) would ensure compliance with Sections 401 and 404 of the Clean Water Act.

With implementation of staff's proposed COCs **AQ-SC3**, **AQ-SC4**, **HAZ-1**, **WATER-1**, **WATER-2**, **WATER-4**, **BIO-1** through **BIO-7**, **BIO-8**, **BIO-25**, **BIO-26**, and **BIO-27** adverse impacts to jurisdictional waters would be reduced. CEC staff concluded that this mitigation approach mitigates for impacts to jurisdictional waters and impacts would be less than significant.

Project Components Outside CEC's Opt-In Certification

Focused field surveys determined that no wetlands or other waters are present within the construction footprint of the gen-tie and related components outside the CEC's Opt-in Certification. Therefore, implementation of the proposed project would not result in impacts to state or federally protected wetlands.

However, the gen-tie line would be installed crossing Patterson Run, an ephemeral stream channel. Impacts to this stream could occur if machinery is required in the creek, or if the cables are placed on the ground over the creek before prior to stretching and cause erosion of banks or streambed. Machinery would be placed above and outside of the stream, and cable placement would cause minimal if any erosion.

To avoid and minimize impacts to jurisdictional waters, as part of the standard PG&E Construction Measures, CEC staff recommends that PG&E implement **MM BIO-1** (Annual Training), **MM BIO-2** (Standard Construction Practices), **MM BIO-4** (Patterson Run), and **MM BIO-5** (Best Management Practices). In addition, staff recommends the implementation of **MM BIO-7** (General Impact Avoidance and Minimization Measures), and **MM BIO-13** (Biological Monitor During Construction) to further reduce impacts to jurisdictional waters.

With implementation of CEC staff's recommended mitigation measures **MM BIO-1**, **MM BIO-2**, **MM BIO-4**, **MM BIO-5**, **MM BIO-7**, and **MM BIO-13** adverse impacts to jurisdictional waters would be less than significant.

Operation

Less Than Significant with Mitigation. Based on the analysis, the operation associated with the proposed project would not substantially adversely affect jurisdictional waters, and impacts would be less than significant with the implementation of staff's proposed COCs **AQ-SC3**, **AQ-SC4**, **HAZ-1**, **WATER-1**, **WATER-2**, **WATER-4**, **BIO-1** through **BIO-7**, **BIO-8**, **BIO-25**, **BIO-26**, and **BIO-27**.

Project Components Within CEC's Opt-In Certification

The low water crossing is part of a transmission structure access path for construction and maintenance activities, and the expected operation activities would be access management and any structural upkeep necessary over the life of the facility. The expected operation activities related to the outfall structure would include inspection, any necessary cleaning, and structural upkeep to ensure compliance with environmental regulations.

The low water crossing and outfall structure will remain in place during operations for the life of the project. Any routine maintenance would be done in accordance with staff proposed COCs **AQ-SC3**, **AQ-SC4**, **HAZ-1**, **WATER-1**, **WATER-2**, **WATER-4**, **BIO-1** through **BIO-7**, **BIO-8**, **BIO-25**, and **BIO-26**.

With implementation of staff's proposed COCs **AQ-SC3**, **AQ-SC4**, **HAZ-1**, **WATER-1**, **WATER-2**, **WATER-4**, **BIO-1** through **BIO-7**, **BIO-8**, **BIO-25**, **BIO-26**, and **BIO-27** adverse impacts to jurisdictional waters during operation would be reduced. CEC staff concluded that this mitigation approach mitigates for impacts to jurisdictional waters and impacts would be less than significant.

Project Components Outside CEC's Opt-In Certification

Operation

Focused field surveys determined that no wetlands or other waters are present within the project components outside the CEC's Opt-in Certification. Therefore, implementation of the proposed project would not result in impacts to state or federally protected wetlands. There would be no impact.

d. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?

Construction

Less Than Significant with Mitigation. Based on the analysis below, project construction and operation could affect wildlife movement, wildlife corridors, or nursery sites and impacts would be less than significant with the implementation of staff's proposed COCs **BIO-1** through **BIO-28**, and recommended mitigation measures **MM BIO-1** through **MM BIO-18**.

Project Components Within CEC's Opt-In Certification

The project site and surrounding area is characterized by undeveloped annual grassland habitats and grazing lands, barbed wire perimeter fences, and an existing PG&E Tesla substation to the east. These habitats may provide localized wildlife functions, including foraging, nursery use, and short-distance dispersal for common and special status wildlife species.

The undeveloped grassland habitat within the project site supports potential lifecycle functions, including nursery and dispersal activities for various wildlife species. Based on an evaluation of the project site using the California Essential Habitat Connectivity Project, CEC staff determined the project area is within a Natural Landscape Block that extends from Alameda County south through the Diablo Range and Southern Coastal Ranges, terminating north of the Transverse Ranges (BIOS 2025g). Construction of the

project would not change these designations as it would not significantly impact habitat connectivity or introduce substantial barriers to wildlife movement.

The project area likely provides localized habitat movement value but is of limited linkage value in the broader landscape due to the existing vegetation being surrounded on three sides by similar open, undeveloped grassland habitat and its proximity to the existing PG&E Tesla substation. Local wildlife may utilize the project area as movement habitat, however regional connectivity is somewhat limited by Patterson Pass Road, the gravel access road directly to the north, Interstates (I) 580 and I-5 to the north and east, and the railroad to the south. The railroad to the south is likely permeable to movement; however, I-580 and I-5 have very limited areas for wildlife crossings. There are no known wildlife nursery sites in the project area and no active wildlife nursery sites were observed during field surveys within the project site.

The installation of perimeter fencing around the BESS facility is anticipated to have an impact on wildlife movement and foraging within the facility. However, local species usually exhibit established, short-range territorial movements and would still be able to utilize surrounding open, undeveloped grassland for movement during construction. The proposed installation of a low water crossing would maintain habitat connectivity during construction as this crossing type tends to have a lower profile than a traditional crossing. Patterson Run Creek is an ephemeral stream and therefore, no impacts to migratory fish would occur. Therefore, project related effects on local movement are anticipated during construction but would not result in significant impacts.

To reduce these impacts the applicant has proposed measures which would establish species-specific buffers around active nests during construction, restore areas disturbed during construction to their original habitat condition, minimize disruption to Patterson Run creek, and conduct pre-construction surveys and monitoring. CEC staff reviewed the applicant's proposed mitigation and incorporated the measures, as appropriate, into staff's proposed COCs **BIO-1** to **BIO-28** to ensure potential impacts are reduced to less than significant. These measures include implementing mandatory worker training, conducting preconstruction surveys, monitoring and reporting requirements, restoring temporarily disturbed areas, and provide compensatory mitigation for the loss of foraging and denning habitat.

Implementation of CEC staff's proposed COC **BIO-1** through **BIO-28** during construction would reduce impacts to native resident or migratory wildlife species, including use of established wildlife movement corridors and nearby breeding or nursery areas, to less than significant.

Project Components Outside CEC's Opt-In Certification

The construction of the proposed gen-tie line construction would impact migration routes primarily through habitat disturbance and physical barriers in the form of footings. Loss of foraging habitat could occur; however, all temporarily impacted areas would be revegetated. Disruption of species movement could also occur from heavy

equipment and overland travel along the project footprint. The transmission line infrastructure would not form an impassable barrier for most wildlife, meaning any regional movement patterns would persist.

Implementation of staff's recommended mitigation measures **MM BIO-1** through **MM BIO-18** during construction would reduce impacts to native resident or migratory wildlife species, including use of established wildlife movement corridors and nearby breeding or nursery areas, to less than significant.

Operation

Less Than Significant with Mitigation. Based on the analysis, the operation associated with the proposed project would not substantially adversely affect wildlife movement, wildlife corridors, or nursery sites and impacts would be less than significant with the implementation of staff's proposed COCs **BIO-1** through **BIO-28**, and recommended mitigation measures **MM BIO-1** through **MM BIO-18**.

Project Components Within CEC's Opt-In Certification

Operational impacts would be substantially reduced from construction levels, with wildlife movement limited to the gen-tie corridor or adjacent open areas surrounding the proposed BESS site. The proposed installation of a low water crossing would maintain habitat connectivity after construction as this crossing type tends to have a lower profile than a traditional crossing. Patterson Run Creek is an ephemeral stream and therefore, no impacts to migratory fish would occur.

Thermal Runaway and BESS Fires. The risk to movement of special-status species could be compounded should a BESS fire occur. Potential impacts would be similar to those described in the Thermal Runaway and BESS Fires section above; these could include risks from chemical exposure, smoke inhalation, soil and water contamination, mortality, and habitat degradation. Human disturbance and smoke could displace special-status species and or inhibit movement across important dispersal corridors.

To reduce these impacts the applicant has proposed measures which would establish species-specific buffers around active nests during any operations related construction, restore areas disturbed during construction to their original habitat condition, minimize disruption to Patterson Run creek, and conduct pre-construction surveys and monitoring. CEC staff reviewed the applicant's proposed mitigation and incorporated the measures, as appropriate, into staff's proposed COCs **BIO-1** to **BIO-28** to ensure potential impacts are reduced to less than significant. These measures include implementing mandatory worker training, conducting preconstruction surveys, monitoring and reporting requirements, restoring temporarily disturbed areas, and providing compensatory mitigation for the loss of foraging and denning habitat.

With implementation of staff's proposed COCs **BIO-1** through **BIO-28** adverse impacts to wildlife movement during operations would be reduced. Staff concluded that this

mitigation approach mitigates for impacts to wildlife movement and impacts would be less than significant.

Project Components Outside CEC's Opt-In Certification

Operational impacts would be substantially reduced from construction levels, with wildlife movement limited to the gen-tie corridor or adjacent open areas surrounding the proposed BESS site. During the operation of the facility, the primary activities and associated impacts on wildlife migration or nursery sites would be limited to routine maintenance and the inherent presence of the infrastructure itself. The proposed installation of a low water crossing would maintain habitat connectivity after construction as this crossing type tends to have a lower profile than a traditional crossing.

To avoid and minimize impacts, both direct and indirect, and as part of the standard PG&E Construction Measures, CEC staff recommends that PG&E implement mitigation measures **MM BIO-1** (Annual Training), **MM BIO-2** (Standard Construction Practices), **MM BIO-3** (California Tiger Salamander), **MM BIO-4** (Patterson Run), **MM BIO-5** (Best Management Practices), and **MM BIO-6** (California Tiger Salamander Specific Conditions). In addition, the applicant has proposed avoidance and minimization measures which staff have reviewed and enhanced them as necessary to reduce effects on wildlife movement and nursery sites should they be present during operation activities. These include **MM BIO-7** (General Impact Avoidance and Minimization Measures), **MM BIO-8** (Special-Status Plants), **MM BIO-9** (San Joaquin Kit Fox, American Badger, Burrowing Owl), **MM BIO-10** (Swainson's Hawk), **MM BIO-11** (Golden Eagle), **MM BIO-12** (Nesting Bird Surveys Prior to Construction and Bird Buffers), **MM BIO-13** (Biological Monitor During Construction), **MM BIO-14** (California Red-Legged Frog), **MM BIO-15** (Crotch's Bumble Bee), **MM BIO-16** (Western Spadefoot), **MM BIO-17** (Coast Horned Lizard and San Joaquin Coachwhip), and **MM BIO-18** (Monarch Butterfly). These recommended mitigation measures are designed to educate workers of the presence and sensitivity of wildlife that may occur in the project area; provide limitations on the work that may occur during the breeding season; provide species specific avoidance and minimization measures, require inspection for wildlife under vehicles; reducing or controlling fugitive dust and vehicle speeds; monitoring construction to reduce direct wildlife mortality; and the control of noxious weeds.

With implementation of CEC staff's recommended mitigation measures **MM BIO-1** through **MM BIO-18**, impacts to wildlife movement and nursery sites during operations would be reduced to less than significant.

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

Construction and Operation

Less Than Significant with Mitigation. Based on the analysis below, construction and operation of the project would not conflict with any local policies or ordinances protecting biological resources with the implementation of staff's proposed COCs **BIO-1** through **BIO-28**, and recommended mitigation measures **MM BIO-1** through **MM BIO-18**.

Project Components Within CEC's Opt-In Certification

The proposed project would not conflict with any local plans, policies, and regulations protecting biological resources. As summarized in **Table 5.2-8**, the proposed project would be consistent with applicable federal and state plans, policies and regulations during construction and operations.

This proposed project is located in unincorporated Alameda County where there are no countywide ordinances regulating trees on private property. The existing ordinance (County Ordinance No. O-2016-66) solely protects and regulates trees within the County right-of-way.

Due to a recent fire southeast of Patterson Pass Road, satellite imagery indicates fire damage to trees along Patterson Run. These trees are located within the County right-of-way and would require an encroachment or tree permit from the Alameda County Public Works Agency, if not for the CEC's in-lieu permitting authority. However, no tree removal is proposed.

The project would restore temporarily disturbed areas, provide compensatory mitigation for habitat disturbance, and require specific conditions for mitigating impacts to Patterson Run Creek as discussed in checklist items (a) and (c) above.

Table 5.2-8 also includes any proposed Conditions of Certification, where applicable, to ensure the project would not conflict with any federal or state plans, policies, and regulations. With implementation of CEC staff proposed COCs **BIO-1** through **BIO-28** construction of the project would not conflict with any local policies or ordinances and impacts would be reduced to less than significant.

Project Components Outside CEC's Opt-In Certification

Construction and operations activities are not expected to conflict with any local, state, or federal plans, policies, and regulations protecting biological resources because PG&E would coordinate and comply with all applicable plans, policies, and regulations. In addition, PG&E would coordinate with applicable resource agencies and implement **MM BIO-1** through **MM BIO-18** to reduce impacts to less than significant.

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

Construction

Less Than Significant with Mitigation. Based on the analysis below, the proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan, and impacts would be less than significant with the implementation of staff's proposed COCs **BIO-1** through **BIO-28**, and recommended mitigation measures **MM BIO-1** through **MM BIO-18**.

Project Components Within CEC's Opt-In Certification

The project site is not located within the boundary of a formally adopted conservation plan area; however, it lies within the broader geographic scope of the EACCS planning area. The EACCS provides a streamlined framework for natural resource conservation and environmental permitting within eastern Alameda County. The project area is located within the EACCS Conservation Zone (CZ) 10, which includes conservation priorities such as the protection of big tarplant occurrences and critical habitat for California red-legged frogs. The proposed project site constitutes a very small percentage (0.27%) of the total land inventory (26,144 acres) within CZ 10.

The proposed project would be consistent with and would not conflict with the goals of the EACCS through compliance with applicable regulatory requirements and implementation of avoidance, minimization, and mitigation measures that meet or exceed EACCS guidelines. The applicant would obtain all necessary permits and approvals from relevant agencies, including the USACE, and RWQCB, and adhere to the same regulatory standards these agencies used to approve the EACCS.

The applicant has applied for a Clean Water Act Section 404 Nationwide Permit docketed on July 30, 2024 (TN258199) and a Clean Water Act Section 401 Water Quality Certification from the Central Valley RWQCB docketed on June 19, 2025 (TN264361). The USACE completed Section 7 consultation under the federal ESA with the USFWS on June 25, 2025.

In addition, CEC staff has coordinated directly with CDFW to ensure CESA compliance through the CEC's in-lieu permitting authority.

- Avoidance and Minimization measures proposed by the applicant and recommended by CDFW would be implemented that meet or exceed EACCS guidelines.
- Compensatory mitigation would be provided for impacts to aquatic resources and EACCS-covered species via the acquisition of credits from approved mitigation banks, utilizing the standard mitigation ratios defined by the EACCS based on habitat quality evaluations as required by staff proposed COCs **BIO-10**, **BIO-11**, **BIO-18**, **BIO-22**, and **BIO-26**.

Implementation of staff's proposed COCs **BIO-1** through **BIO-28** would ensure compliance with the EACCS and meet the requirements of permitting agencies USACE and RWQCB. With implementation of these proposed COCSs impacts would be reduced to less than significant.

Project Components Outside CEC's Opt-In Certification

CEC staff recommends implementation of mitigation measures **MM BIO-1** through **MM BIO-18**, which would ensure compliance with the EACCS and meet the requirements of permitting agencies USACE and RWQCB. With implementation of these proposed **MMs**, impacts would be reduced to less than significant.

Operation

No Impact. Based on the analysis below, the operation of the project would not conflict with the provisions of any adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan and there would be no impact.

Project Components Within and Outside CEC's Opt-In Certification

There is no adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other local, regional or state plans, on or adjacent or next to the project site or the PG&E utility switchyard. Therefore, the project would not conflict with any such plans and there would be no impact.

5.2.2.3 Cumulative Impacts

The following analysis considers the potential impacts of the proposed project in the context of the cumulative projects and conditions described in this report. The objective is to determine if the proposed project's incremental effect, when combined with other present and probable future projects, is "cumulatively considerable" (CEQA Guidelines Section 15064(h)(1)).

Construction and Operation

Project Components Within CEC's Opt-In Certification

Less Than Significant with Mitigation. The geographic scope of CEC staff's preliminary analysis of cumulative effects to special status wildlife encompasses portions of San Joaquin and Alameda County, including the City of Tracy and City of Mountain House. During construction and operation of the proposed project, cumulative impacts to biological resources would primarily result from permanent habitat loss, temporary disturbance, noise, and increased human activity.

As of May 2025, a portion of the gen-tie line area has been cleared, compacted, and graveled as part of the Mulqueeney Wind Project's staging area and underground gen-tie corridor. The Mulqueeney Wind Project obtained the necessary federal, state, and local permits required to clear the staging area, and as part of those permit

requirements, it is assumed that they would be required to restore these disturbed areas back to pre-project conditions. Construction activities on the Mulqueeney Wind Project would likely be complete prior to the commencement of construction of the proposed project.

The area around Patterson Pass Road and the I-580/I-205 interchange has been and continues to be subject to intense development pressures, including commercial growth, infrastructure improvements, and numerous energy projects (wind and battery storage). The following active and reasonably foreseeable projects, in combination with existing environmental stressors such as ongoing urban and agricultural conversion, have the potential to contribute to significant cumulative impacts on biological resources:

- Golden Hills Wind Energy Project (Repowering): This existing facility is located adjacent to the project area and has documented mortality of golden eagles, burrowing owls, and tricolored blackbirds due to turbine collisions.
- Interstate 580/Patterson Pass Road/International Parkway Interchange Improvements: A Caltrans and City of Tracy project involving construction of a new Diverging Diamond Interchange to accommodate increased traffic, which has undergone prior environmental review and habitat mitigation.
- Kola Energy Storage Project: This planned 700 MW BESS facility near the PG&E Tesla Substation involves the development of approximately 42 acres of vacant agricultural land, resulting in permanent impacts to habitat for Crotch's bumble bee, California tiger salamander, and San Joaquin kit fox.
- Griffith Energy Storage Project: Located approximately 0.9 miles southwest of I-580 in San Joaquin County, this project involves grading and developing a 400 MW BESS facility on roughly 45 acres of habitat for the same special-status species as the Kola project.
- Viracocha Hill BESS Project: Located in the Altamont Pass Wind Resource Area (APWRA), this project would convert approximately 17 acres of grassland habitat for the new facility and gen-tie line.
- Mulqueeney Wind Ranch Project (Repowering): This project, located south of I-580 in northeastern Alameda County, involves repowering existing wind infrastructure and has identified significant and unavoidable impacts to avian species, including golden eagles and other raptors.
- Sand Hill Wind Project/Rooney Ranch – Viracocha Wind Project (Repowering): This project involves replacing hundreds of old turbines with up to 40 modern turbines over 2,600 acres in the APWRA. While reducing overall turbine numbers, it involves significant construction disturbance and ongoing operational impacts to avian species.
- Summit Wind Repower Project: Located in the eastern Altamont Hills, this project involves replacing older turbines within a 3,363-acre boundary, contributing to

ongoing habitat modification and potential avian mortality within the sensitive wind resource area.

- Urban and Agricultural Conversion: The ongoing, region-wide conversion of grasslands and agricultural land to urban landscapes (e.g., Mountain House expansions) and orchards/vineyards contributes broadly to cumulative habitat loss for species like the Swainson's hawk and tricolored blackbird.

Special-Status Species

The proposed project would permanently impact 60.7 acres of special status species habitat and temporarily impact 6.7 acres. This includes the permanent loss and temporary disturbance of grassland habitat for special status wildlife, including foraging habitat for raptors, western burrowing owl, golden eagle, Swainson's hawk, and tricolored blackbird. Other cumulative projects considered below also impact similar vegetation communities and special status plant and wildlife species resulting in a net regional loss of grassland habitat. Without mitigation and conservation planning, cumulative effects to these species may result in population declines and reduced genetic viability. The framework of the EACCS provide regional conservation planning and coordinated avoidance, minimization, and mitigation for covered species, which reduces potential cumulative impacts.

Aquatic Resources

Proposed impacts to Patterson Run include installation of a new stormwater basin outfall and a low water crossing. These impacts are minor and would not alter the flow of water through the system. Additionally, the impacts would be fully mitigated with preservation of similar habitat and CEC staff proposed COCs.

Wildlife Corridors and Habitat Connectivity

The region provides important connectivity between larger habitat blocks. Cumulative development could impair landscape permeability and increase the risk of wildlife collisions. The proposed project close to existing development and roadways and will not introduce additional roads. Wildlife movement would be preserved in the open grassland to the south, west and north of the project area.

The project's incremental impact is considered cumulatively considerable prior to mitigation. This contribution exacerbates a regional trend of intense grassland conversion for energy and urban development, leading to a significant collective effect on critical avian and special status species habitats, including those supporting the Crotch's bumble bee, golden eagle, Swainson's hawk, burrowing owl, tricolored blackbird, California tiger salamander, California red-legged frog, and San Joaquin kit fox.

However, the implementation of a comprehensive suite of mitigation measures, specifically COCs **BIO-1** through **BIO-28** (detailed in **Section 5.2.5**), ensures that the project implements all feasible measures to minimize its habitat impact and provide adequate compensation. These COCs require substantial off-site mitigation and

adherence to stringent avian protection protocols. Through adherence to the required COCs, the project's contribution to the significant cumulative impact would be reduced to less than significant.

5.2.3 Project Conformance with Applicable LORS

Table 5.2-8 presents CEC staff's determination of conformance with applicable local, state and federal LORS, including any proposed COCs, where applicable, to ensure the project would conform with LORS. As shown in this table, CEC staff concluded that the project would be consistent with all applicable LORS. The subsection below, "5.2.5 Staff Proposed Conditions of Certification," contains the full text of the referenced COCs.

TABLE 5.2-8 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Consistency and Basis For Determination
Federal	
Federal Endangered Species Act (16 USC §§ 1531 et seq. and 50 CFR part 17.1 et seq.)	
Designates and protects federally threatened and endangered plants and animals and their critical habitat. Applicants for projects that could result in adverse impacts on any federally listed species are required to mitigate potential impacts in consultation with USFWS.	**Yes.** The applicant is seeking take coverage for California tiger salamander, Western burrowing owl, San Joaquin kit fox and Crotch's bumble bee through the in-lieu permitting process to ensure compliance with CESA. The additional implementation of COCs **BIO-1** through **BIO-28** would further ensure that impacts to state-listed species are less than significant.
Bald and Golden Eagle Protection Act (16 USC §§ 668 to 668c)	
Provides for the protection of the bald and golden eagle by prohibiting, except under certain specified conditions, the take, possession, and commerce of such birds. The 1972 amendments increased penalties for violating provisions of the Act or regulations issued pursuant thereto and strengthened other enforcement measures.	**Yes.** The proposed project would include COCs **BIO-11**, **BIO-18**, **BIO-19**, **HAZ-9**, **WORKER SAFETY-1**, **WORKER SAFETY-2**, **WORKER SAFETY-6**, **WORKER SAFETY-7**, and **WORKER SAFETY-10** to protect golden eagles and ensure consistency with the BGEPA.
Migratory Bird Treaty Act (16 USC §§ 703 to 711)	
Makes it unlawful to take or possess any migratory nongame bird (or any part of such a migratory nongame bird as designated in the Act.	**Yes.** The proposed project would include COCs **BIO-1** through **BIO-5**, **BIO-7**, **BIO-8**, **BIO-9**, **BIO-11**, **BIO-17**, **BIO-19**, **AQ-SC3**, **AQ-SC4**, **HAZ-1**, **HAZ-9**, **WORKER SAFETY-1**, **WORKER SAFETY-2**, **WORKER SAFETY-6**, **WORKER SAFETY-7**, and **WORKER SAFETY-10** to reduce impacts to resident and migratory birds and ensure consistency with the MBTA.
Noxious Weed Act of 1974 (7 U.S.C. §2801 et seq.)	
The Noxious Weed Act created a national framework to control harmful non-native plants, empowering the Secretary of Agriculture to regulate their movement, enforce quarantines, and manage them on federal lands.	**Yes.** The proposed project includes COCs **BIO-8**, **BIO-9**, and **BIO-10** to minimize the introduction and spread of noxious weeds and ensure consistency with the Noxious Weed Act.
Executive Order 13112	
Executive Order 13112 (1999) created the National Invasive Species Council, directing federal agencies to prevent, monitor, and control invasive species	**Yes.** The proposed project includes COCs **BIO-8**, **BIO-9**, and **BIO-10** to minimize the introduction and spread of invasive species and ensure consistency with Executive Order 13112.

TABLE 5.2-8 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Consistency and Basis For Determination**
while coordinating efforts across departments and stakeholders.	
Clean Water Act §§ 401 and 404 (33 USC §§ 1251 to 1376)	
Requires the permitting and monitoring of all discharges to surface water bodies. Section 404 requires a permit from the ACOE for a discharge of dredged or fill materials into waters of the U.S., including wetlands. Section 401 requires a permit from RWQCB for the discharge of pollutants. By federal law, every applicant for a federal permit or license for an activity that may result in a discharge into a California water body, including wetlands, must request state certification that the proposed activity will not violate state and federal water quality standards.	**Yes.** The project area includes Patterson Run creek, which is a jurisdictional waterway. The project owner applied for a Clean Water Act Section 404 Nationwide Permit from the ACOE and a CWA Section 401 Water Quality Certification from the RWQCB. The project would include COCs **WATER-1**, **WATER-2**, **WATER-4**, **HAZ-1**, **AQ-SC3**, **AQ-SC4**, **BIO-1** through **BIO-7**, and **BIO-8** and **BIO-25**, which provides conditions, such as installation of BMPs to control erosion and sedimentation, refueling requirements, spill prevention plan and weed control, would further reduce impacts to Patterson Run creek.
State	
California Endangered Species Act (Fish and Game Code, §§ 2050 to 2098)	
Species listed under this act cannot be "taken" or harmed, except under specific permit.	**Yes.** The applicant is seeking take coverage for California tiger salamander, Western burrowing owl, San Joaquin kit fox and Crotch's bumble bee through the in-lieu permitting process to ensure compliance with CESA. The additional implementation of COCs **BIO-1** through **BIO-28** would further ensure that impacts to state-listed species are less than significant.
Fully Protected Species (Fish and Game Code, §§ 3511, 4700, 5050, and 5515)	
Lists animal species that are fully protected in California and states that these species may not be "taken" or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species. However, California Senate Bill 147 (SB 147), passed in July 2023, authorizes CDFW to issue permits for the incidental take of fully protected species for certain projects including renewable energy.	**Yes.** Fully-protected species with the potential to occur within the project area include the golden eagle, white-tailed kite and the California condor. The implementation of COCs **BIO-1** through **BIO-7**, **BIO-17**, **BIO-16** and **BIO-26** would reduce impacts to less than significant and ensure compliance with Fish and Game Code sections 3511, 4700, 5050, and 5515.
California Migratory Birds Protection Act (Fish and Game Code, §§ 3503, 3503.5, 3513, and 3800)	
Makes it unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any migratory bird.	**Yes.** The project would include COCs **BIO-1** through **BIO-7**, **BIO-8** and **BIO-16** through **BIO-21**, and **BIO-26** to reduce impacts to resident and migratory birds and ensure compliance with Fish and Game Code sections 3511, 4700, 5050, and 5515.
Furbearing Mammals (Fish and Game Code, §251.1 and Title 14 §460)	
Contains regulations for taking furbearing mammals, including prohibiting the harassment or unapproved take of furbearing mammals, including San Joaquin kit fox and American badger.	**Yes.** The project would include COCs **BIO-1** through **BIO-7**, **BIO-8**, **BIO-22**, **BIO-23**, and **BIO-26** to reduce impacts to fur-bearing mammals, specifically American badger and San Joaquin kit fox, and ensure compliance with Fish

TABLE 5.2-8 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Consistency and Basis For Determination**
	and Game Code section 251.1 and Cal. Code Regs., Title 14, § 460.
Native Plant Protection Act (Fish and Game Code, §§ 1900 et seq.)	
Designates state rare and endangered plants and provides specific protection measures for identified populations. The Act also prohibits take of rare and endangered native plants with exceptions for agricultural and nursery operations, emergencies, or in proper coordination with CDFW under specific circumstances.	**Yes.** Big tarplant is the only state rare or endangered plant occurring in the project area. The project would avoid these plants. The project would include COCs **BIO-1** through **BIO-7**, and **BIO-9** to ensure plants are avoided and ensure compliance with Fish and Game Code, §§ 1900 et seq.
Porter-Cologne Water Quality Control Act (California Water Code Division 7)	
Directs responsibility to RWQCBs for granting Waste Discharge Requirements (WDRs) or National Pollutant Discharge Elimination System (NPDES) permits for discharges to waters of the state. The Act also establishes water quality objectives to protect the beneficial uses of surface and groundwater resources.	**Yes.** The project owner would obtain the appropriate WDRs or NPDES permits through the CVRWQCB prior to impacting any jurisdictional features. The project would include COCs **WATER-1**, **WATER-2**, **WATER-4**, **HAZ-1**, and **BIO-25** to ensure compliance with water quality objectives.
California Lake and Streambed Alteration Notification/Agreement (Fish and Game Code, § 1602)	
Prohibits alteration of any water body meeting the CDFW jurisdictional requirements of the Fish and Game Code without the appropriate permits	**Yes.** The project owner would seek coverage for impacts to CDFW jurisdictional streambeds through the in-lieu permitting program to ensure compliance with Fish and Game Code, § 1602. The project would include COCs **BIO-1** through **BIO-7**. The additional implementation of COCs **BIO-8**, **BIO-25**, **WATER-1**, **WATER-2**, **WATER-4**, and **HAZ-1** which provides conditions, such as installation of BMPs to control erosion and sedimentation, refueling requirements, spill prevention and weed control, would further reduce impacts to these features.
Local	
Alameda County General Plan	
Applicable LORS	**Conformance and Basis For Determination**
Alameda County Code of Ordinances	
Chapter 13.12.090 requires anyone to obtain a written permit from the Director of Public Works before doing anything that could alter a watercourse. This includes connecting pipes, changing water flow, developing within setback areas, adding or removing materials, modifying structures, or placing loose materials that could divert flow or be washed away during storms.	**Yes.** The proposed project would include COCs **AQ-SC3**, **AQ-SC4**, **WATER-1**, **WATER-2**, **WATER-4**, **HAZ-1**, and **BIO-1** through **BIO-7**, **BIO-25**, and **BIO-26** to reduce impacts to Patterson Run Creek.

TABLE 5.2-8 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Consistency and Basis For Determination**
Under Policy 123, any land use outside the Urban Growth Boundary that impacts biological resources must provide mitigation that aligns with East County Area Plan (ECAP) goals, specifically by prioritizing restoration or preservation in Resource Management areas to ensure long-term habitat connectivity. Furthermore, Policies 125 and 126 mandate the active preservation of habitats for special-status species and enforce a strict "no net loss" standard for critical riparian and seasonal wetlands. Together, these policies ensure that development in East County does not fragment the ecosystem but instead contributes to a protected, high-functioning natural landscape.	**Yes.** The proposed project would include COCs **BIO-1** through **BIO-28** to ensure that impacts to threatened and endangered plants and wildlife and other sensitive biological resources are reduced and ensure compliance with the Alameda County General Plan.

5.2.4 Conclusions and Recommendations

As discussed above, with implementation of COCs, the project would have a less than significant impact related to biological resources and would conform with applicable LORS. CEC staff recommended adopting the conditions of certification as detailed in subsection "5.2.5 Proposed Conditions of Certification" below.

5.2.5 Proposed Conditions of Certification

BIO-1 Designated Biologist Selection The project owner shall assign at least one DB to the project (multiple personnel may be required to ensure compliance with conditions of certification). The project owner shall submit the resume of the proposed DB, with at least three references and contact information, to the California Energy Commission (CEC) Compliance Project Manager (CPM) for review and approval.

The Designated Biologist must meet the following minimum qualifications:

1. Bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field;
2. Three years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society; and
3. At least three years of field experience with biological resources found in or near the project area, or as specified below for listed species:

In lieu of the above requirements, the resume shall demonstrate to the satisfaction of the CPM that the proposed DB or alternate has the appropriate training and background to effectively implement the conditions of certification.

For work related to Swainson's hawk, the above qualifications shall also apply. In addition, the DB(s) shall have conducted at least two complete years of protocol-

level Swainson's hawk surveys during which they have detected Swainson's hawk.

For work related to Crotch's bumble bee and/or burrowing owl, the above qualifications shall also apply. In addition, the DB(s) must meet the following minimum qualifications:

1. Knowledgeable in the life history and ecology of Crotch's bumble bee or burrowing owl, or both, exclusion and/or monitoring techniques as applicable, construction and operational impact monitoring;
2. Demonstrable experience implementing exclusion and/or monitoring techniques and construction and operational impact monitoring for Crotch's bumble bee or burrowing owl, or both;
3. Demonstrable experience implementing conditions of a CDFW Incidental Take Permit or acting as a DB, or other experience implementing a CDFW Incidental Take Permit as a Biological Monitor.

Verification: The project owner shall submit to the CPM resumes and any other relevant documentation for DB(s) approval at least 75 days prior to the start of site mobilization and/or construction-related ground disturbance activities. No site mobilization or construction related activities shall commence until a DB has been approved by the CPM.

If a DB needs to be replaced, the specified information regarding the proposed replacement must be submitted to the CPM at least ten working days prior to the termination or release of the preceding DB. In an emergency, the project owner shall immediately notify the CPM to discuss the qualifications and approval of a short-term replacement while a permanent DB is proposed to the CPM for consideration.

BIO-2 Designated Biologist Duties The project owner shall ensure that the DB performs the following during any site (or related facilities) mobilization, ground disturbance, grading, construction, operation, and decommissioning activities. The project owner may request approval from the CPM to terminate the DB's function during plant operation in writing and provide justification of the request. However, the project owner shall appoint a replacement DB at any time as directed by the CPM and would ensure the same duties are performed during closure activities.

If no DB is available at any time during the life of the project (including operation phase) and the CPM determines project-related actions may affect biological resources, the CPM may direct the project owner to assign a replacement DB, for short-term or long-term monitoring and reporting. The DB may be assisted by the approved Biological Monitor(s) but remains the primary contact for the project owner and CPM.

The Designated Biologist Duties shall include the following:

1. Advise the project owner's Construction and Operation Managers on the implementation of the biological resource conditions of certification;
2. Ensure that all conditions of certification are met and that all reporting standards for each COC are completed and submitted to the CPM and any other regulatory agencies in compliance with specified timelines;
3. Consult on the preparation of the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) to be submitted by the project owner;
4. Be available to supervise other biological resource staff, conduct and coordinate mitigation, monitoring, and other biological resources compliance efforts, particularly in areas requiring avoidance or containing sensitive biological resources, such as special status species or their habitat;
5. Ensure that all sensitive biological resource areas are flagged, delineated, or marked, and inspect these areas at appropriate intervals for compliance with regulatory terms and conditions;
6. Notify the CPM and CDFW of any observation of an unanticipated sensitive biological resource(s) encountered during all phases of the project. Unanticipated resources include sensitive species not addressed in the environmental document because of a perceived low potential to occur, species that are known to occur but have been proposed as a candidate for state or federal listing after the approval of the project, and common species whose range is unexpected in the project area. Notifications shall occur immediately and no later than the following morning, or Monday morning in the case of a weekend, or the next business day in the case of a state or federal holiday. The initial notification shall be followed by a formal written notification submitted to the CPM and CDFW within 48 hours of the observation;
7. Inspect or direct the site personnel how to inspect active construction areas where animals may have become trapped prior to construction commencing each day. Inspect or direct the site personnel how to inspect the installation of structures that prevent entrapment or allow escape during periods of construction inactivity. If site personnel perform these inspections, then they shall be trained by the DB and the name of the personnel and date of training shall be included in a log in the Monthly Compliance Report;
8. Periodically inspect areas with high vehicle activity (e.g., parking lots) for animals in harm's way. Inspect soil or spoil stockpiles and dust abatement watering for compliance with **BIO-7**. Inspect erosion control materials (e.g., hay bales) to confirm weed-free certification. Inspect weed infestations and monitor eradication measures to determine success. Inspect trash

receptacles, monitor site personnel compliance with trash handling, pet prohibitions, and all other WEAP components (**BIO-5**);

9. Ensure the implementation of the post construction conditions of certification for biological resources;
10. Notify the project owner and the CPM and CDFW directly per the requirements of **BIO-4** of any non-compliance with any biological resources conditions of certification during all phases of the project. Notifications shall occur immediately and no later than the following morning, or Monday morning in the case of a weekend, or the next business day in the case of a state or federal holiday. The initial notification shall be followed by a formal written notification submitted to the CPM and CDFW within 48 hours of the non-compliance incident;
11. Notify the project owner, the CPM, and CDFW directly of any special-status species injury or mortality (notifications for Crotch's bumble bee, California tiger salamander, California red-legged frog, San Joaquin kit fox, or burrowing owl, are addressed per **BIO-10**, **BIO-11**, **BIO-12**, **BIO-18**, and **BIO-22**). Notifications shall occur immediately and no later than the following morning, or Monday morning in the case of a weekend, or the next business day in the case of a state or federal holiday. The initial notification shall be followed by a formal written notification submitted to the CPM and CDFW within 48 hours of the observation;
12. Respond directly to inquiries of the CPM regarding biological resource issues by phone, email, or other correspondence;
13. Maintain written records of the tasks specified above and those included in the BRMIMP. Summaries of these records shall be submitted in the Monthly Compliance Reports and the Annual Compliance Report;
14. Maintain a record of all fish/amphibians captured and moved, and the record shall be provided to the CPM, and CDFW (c/o 1600 program, 2825 Cordelia Road, Suite 1000, Fairfield, CA 94534) with the appropriate project name and certification number as part of the Monthly Compliance Reports and the Annual Compliance Report;
15. Train the Biological Monitors as appropriate, and ensure their familiarity with the BRMIMP, Worker Environmental Awareness Program (WEAP) training, and all permits; and
16. Maintain the ability to be in regular, direct communication with the CPM and representatives of CDFW, and USFWS, including notifying these agencies of dead or injured listed species and reporting special-status species observations to the California Natural Diversity Database.

Verification: The DB shall submit in the Monthly Compliance Reports to the CPM copies of all written reports and summaries that document construction activities

that have the potential to affect biological resources and document compliance with all biological resources conditions of certification. The DB's written records would be made available for the CPM's inspection on request at any time during normal business hours. During project operation, the DB(s) shall submit record summaries in the Annual Compliance Reports unless their duties cease, as approved by the CPM.

BIO-3 Biological Monitor Selection The project owner's CPM-approved DB shall submit the resume, at least three references, and contact information of the proposed Biological Monitor(s) to the CPM for approval and CDFW for review and comment. The resume shall demonstrate, to the satisfaction of the CPM, the appropriate education and experience to accomplish the assigned biological resource tasks.

Verification: The project owner shall submit the specified information to the CPM for review and approval at least 45 days prior to the start of any site mobilization activities. Within 10 days of completion of training, the DB shall submit a written statement to CPM confirming that individual Biological Monitor(s) have been trained including the date when training was completed. If additional biological monitors are needed during construction or for species specific surveys, the specified information shall be submitted to the CPM for approval at least 10 days prior to their first day of monitoring activities.

BIO-4 Designated Biologist and Biological Monitor Authority The project owner's construction/operation manager shall act on the advice of the DB and Biological Monitor(s) to ensure conformance with the biological resource conditions of certification.

If required by the DB and/or Biological Monitor(s), the project owner's construction/operation manager shall halt all site mobilization, ground disturbance, grading, construction, and operation activities in areas specified by the DB and/or Biological Monitor. The DB shall:

1. Require a halt to all activities in any area when determined that there would be an unauthorized adverse impact to biological resources if the activities continued;
2. Inform the project owner and the construction/operation manager when to resume activities;
3. The DB or Biological Monitor shall notify the project owner and the CPM of any work stoppage of site mobilization, ground disturbance, grading, construction, and operation activities and associated non-compliance incidents; notifications shall occur immediately and no later than the following morning, or Monday morning in the case of a weekend, or the next business day in the case of a state or federal holiday;

4. Notify and advise the CPM of any corrective actions that have been taken or would be instituted as a result of the work stoppage; and
5. The CPM, in coordination with CDFW, as appropriate, would determine if corrective action has been effective and would direct the project owner to take further corrective action as needed.
6. If the DB is unavailable for direct consultation, the Biological Monitor shall act on behalf of the DB.

Verification: The project owner shall ensure that the DB or Biological Monitor notifies the CPM immediately (and no later than the morning following the incident, or Monday morning in the case of a weekend, or the next business day in the event of a state or federal holiday) of any non-compliance or a halt of any site mobilization, ground disturbance, grading, construction, and operation activities. The project owner shall notify the CPM, in writing, of the circumstances and actions being taken to resolve the problem within one (1) working day of initiating the corrective action.

BIO-5 Worker Environmental Awareness Program (WEAP) The project owner shall develop and implement a project-specific Worker Environmental Awareness Program (WEAP) and shall submit the draft WEAP for review and approval from the CPM. The WEAP shall be administered to all onsite personnel who would enter the project site including but not limited surveyors, construction engineers, employees, contractors, contractor's employees, supervisors, inspectors, subcontractors (but excluding delivery personnel), biologists, cultural, tribal, and paleontological monitors. An abbreviated WEAP (WEAP Light) can be provided to vendors, such as delivery personnel (e.g., building materials, concrete, heavy equipment, etc.), who periodically enter the project site and are limited to areas such as existing access roads and/or lay down areas. The WEAP Light shall also be submitted for review and approval from the CPM. The WEAP shall be implemented during site mobilization, vegetation clearing, preconstruction, construction, commissioning, operation, non-operation, and closure. All workers must complete the WEAP prior to commencing work on the project. The WEAP and the WEAP Light may be recorded for later electronic viewing by new workers who begin work after the initial presentations.

The WEAP shall:

1. Be developed by or in consultation with the DB (See **BIO-1**) and consist of an on-site or training center presentation in which supporting written material and electronic media in English, as well as Spanish or other languages, as applicable, including photographs of protected species and their habitat, is made available to all participants;
2. Identify the lead agencies, provide an overview of the conditions of certifications, other regulatory permit requirements, and applicable LORS

that must be complied with and the ramifications of non-compliance which may include fines, imprisonment, work stoppages, or loss of employment depending on the violation;

3. Identify the roles of environmental staff and define communication protocols and chain of command between environmental and construction staff. Define what actions monitors can approve such as stopping work under specific circumstances, providing guidance to comply with conditions, conducting surveys, and what actions monitors cannot approve such as directing work, expanding work areas from approved limits, changing conditions of certification requirements, or approving variances to permit conditions. Identify key field contacts and ensure that this information is posted in all break areas;
4. Provide examples of environmental signage and flagging that would be used to delineate work limits; areas for avoidance, state and or federal drainages, or other protected areas, evacuation routes, and approved staging areas;
5. Discuss the locations and types of sensitive biological resources on the project site and adjacent areas, and explain the reasons for protecting these resources; provide information to participants that no snakes or other wildlife shall be intentionally harmed (unless posing a reasonable and immediate threat to humans);
6. Describe standard environmental commitments and best management practices that apply to the project including but not limited to: storing trash in closed receptables and removing weekly to prevent attracting animals, capping pipes and other cavities that could be used by birds and small mammals; collecting and removing the carcasses of dead animals; limiting work to daytime hours, limiting work during periods of high rainfall, preventing vehicles and equipment from operating within a stream unless specifically authorized by other permits or conditions of certification; restricting smoking to designated areas; storing chemicals and fuel in designated areas; spill prevention measures; and reporting requirements.
7. Identify project vehicle speeds on paved and unpaved access roads;
8. Place special emphasis on the protection of nesting birds, Species of Special Concern and listed species including pictures and information on physical characteristics, distribution, behavior, ecology, sensitivity to human activities, legal protection, penalties for violations, reporting requirements, and protection measures;
9. Provide pictures of the sensitive plants and wildlife known to occur in the project area, including Crotch's bumble bee, Swainson's hawk, California horned lark, golden eagles, burrowing owl, loggerhead shrike, American badger, San Joaquin kit fox, California red-legged frog, California tiger salamander, and other sensitive plants and wildlife. Provide information on sensitivity to human activities, legal protection, reporting requirements, and

how to identify construction avoidance zones for these species as marked by flagging, staking, or other means, as described above;

10. Provide an overview for all personnel of the risk of potential impacts to small mammals, birds, amphibians and reptiles from vehicle strikes on all project roads (paved and unpaved) during construction, operations, closure phases, reporting requirements, and protection measures;
11. Describe the risk of wildfires in grassland communities and the measures that would be taken to reduce these risks such as avoiding parking in tall vegetation, limits to where workers can smoke; the locations of fire safety equipment, contact information and the procedure should a wildfire be ignited, required tools for each piece of equipment such as a shovel, Pulaski, and fire extinguisher, restrictions on welding and controlled detonations, use of the Project Activity Level (PAL) system that describes what activities can occur based on specific weather conditions including Red Flag days;
12. Provide an overview of potential impacts to avian and bat species from collisions with the cooling towers, generation tie-line, and other features associated with the operations phase, reporting requirements, and protection measures;
13. Identify whom to contact if there are further comments and questions about the material discussed in the program;
14. Include a training acknowledgment form to be signed by each worker indicating that they received training and shall abide by the guidelines. A small wallet card or pamphlet with key contacts and resource information shall be prepared and provided after the training. A hard hat sticker shall also be provided to each worker to demonstrate to the monitors that they have participated in the training; and
15. The WEAP Light shall include a summary of the items above as they relate to the limited areas that vendors need to access such as existing access roads and/or lay down areas. The specific program can be administered by a competent individual(s) acceptable to the DB and documented within the Monthly Compliance Reports.

Verification: At least 45 days prior to start of site mobilization the project owner shall provide to the CPM for review and approval the draft WEAP and all supporting written materials and electronic media prepared or reviewed by the DB and a resume of the person(s) administering the program. At least 10 days prior to site mobilization the project owner shall submit the approved final WEAP and implement the training for all workers.

The project owner shall provide in the Monthly Compliance Report the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date. Training

acknowledgement forms signed during construction shall be kept on file by the project owner for at least 6 months after the start of commercial operation.

Throughout the life of the project, the WEAP shall be repeated annually for permanent operational employees and shall be routinely administered to any new construction or operation personnel, foremen, contractors, subcontractors, and other personnel potentially working within the project area prior to being authorized to perform work in the project area. Training acknowledgement forms shall be maintained by the project owner and shall be made available to the CPM upon request. Workers shall receive and be required to visibly display a hard-hat sticker or certificate that they have completed the training.

During project operation, signed statements for operational personnel shall be kept on file for 6 months following the termination of an individual's employment.

BIO-6 Biological Resources Mitigation Implementation and Monitoring Plan

The project owner shall develop a Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP). The project owner shall provide the draft BRMIMP to the CPM for review and comment. No site mobilization or construction activities may occur prior to approval of the final BRMIMP by the CPM. Under no circumstances shall ground disturbance proceed without implementation of all applicable permit conditions.

The BRMIMP shall be prepared in consultation with the DB and shall include the following:

1. All biological resources mitigation, monitoring, and compliance measures proposed and agreed to by the project owner;
2. All biological resources conditions of certification identified as necessary to avoid or mitigate impacts;
3. All biological resource mitigation, monitoring, and compliance measures required in state or federal agency terms and conditions, such as those provided in the National Pollution Discharge Elimination System (NPDES) Construction Activities Stormwater General Permit and Waste Discharge Certification;
4. A discussion of all sensitive biological resources that could be impacted by project site mobilization, construction, operation, and decommissioning;
5. A detailed description of measures that shall be taken to avoid or mitigate impacts on each special-status species potentially impacted by construction and operation, including remedial actions;
6. All required mitigation measures for each sensitive biological resource;
7. All locations on a map, at an approved scale (typically 1:6,000 or other scale with CPM approval), of special-status biological resource areas subject to

disturbance and areas requiring temporary protection and avoidance during construction and operation;

8. Aerial photographs, at an approved scale (typically 1:6,000 or other scale with CPM approval), of all areas to be disturbed during project construction activities; include one set prior to any site or related facilities mobilization disturbance and one set subsequent to completion of project construction. The aerial photographs shall include a reference map that shows the aerial map location in reference to the project site, reference key on each aerial, and displays the project boundary. Provide planned timing of aerial photography and a description of why times were chosen;
9. Provide a final accounting of the before/after whole acreages and a determination of whether more or less habitat compensation is necessary;
10. All measures that shall be taken to avoid or mitigate temporary disturbances from construction activities;
11. Duration for each type of monitoring and a description of monitoring methodologies and frequency;
12. Performance standards to be used to help decide if/when proposed mitigation is or is not successful;
13. All performance standards and remedial measures to be implemented if performance standards are not met;
14. A process for proposing plan modifications to the CPM and appropriate agencies for review and approval;
15. All final versions of required plans including BRMIMP, WEAP, Vegetation Management Plan, Weed Control Plan, Nesting Bird Management Plan, Crotch's Bumble Bee Mortality Reduction and Relocation Plan, California Tiger Salamander Relocation Plan, Burrowing Owl Mortality Reduction Plan, American Badger Eviction Plan, Post BESS Fire Monitoring and Management Plan, Compensation Lands Management Plan, and all other individual biological mitigation and/or monitoring plans associated with the project shall be included as attachments; and
16. A requirement to submit any sightings of any special-status species that are observed on or in proximity to the project site, or during project surveys, to the California Natural Diversity Database (CNDDB), per CDFW requirements; and
17. Final Report. The project owner shall provide a construction termination report to the CPM after the project is fully completed. The construction termination report at a minimum shall contain, list of all species, including fish or amphibians, relocated from the project area, photographs of work area, low water crossing, and photographs of the site after the project is completed.

Verification: The project owner shall submit the draft BRMIMP to the CPM for review and approval at least 45 days prior to start of any site mobilization. The project owner shall provide the final BRMIMP to the CPM at least 10 days prior to start of any site mobilization.

If any federal permits have not yet been received when the final BRMIMP is submitted, these permits shall be submitted to the CPM within 5 days of their receipt, and the BRMIMP shall be revised or supplemented to reflect the permit condition(s). The project owner shall submit to the CPM and CDFW the revised or supplemented BRMIMP within 10 days following the project owner's receipt of any additional federal permits. Any changes to the approved BRMIMP shall be submitted to the CPM at least 10 days prior to implementation and must be approved by the CPM in consultation with CDFW prior to implementation.

Implementation of BRMIMP measures shall be reported in the Monthly Compliance Reports by the DB (e.g., survey results, construction activities that were monitored, non-compliance incidences and resolution, species observed, etc.). Within 30 days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written construction termination report identifying which items of the BRMIMP have been completed, a summary of all CPM-approved modifications to mitigation measures made during the project's site mobilization and construction activities, and which mitigation and monitoring items are still outstanding.

To verify that the extent of construction disturbance does not exceed that described in these conditions, the project owner shall submit aerial photographs, at an approved scale, taken before and after construction to the CPM and CDFW. The first set of aerial photographs shall reflect site conditions prior to any preconstruction site mobilization and construction activities and shall be submitted prior to initiation of such activities. The second set of aerial photographs shall be taken subsequent to completion of construction and shall be submitted to the CPM for review and approval, and CDFW for review and comment, no later than 30 days after completion of construction. The project owner shall also provide a final accounting in whole acres of vegetation communities/cover types present before and after construction no later than 30 days after completion of construction. Construction acreages shall be rounded to the nearest acre. The project owner shall also provide GIS shapefiles of all pre- and post-disturbance areas no later than 30 days after completion of construction.

BIO-7 General Impact Avoidance and Minimization Measures The project owner shall ensure implementation of the following measures during site mobilization, construction, operation, and closure to manage their project site and related facilities in a manner to avoid or minimize impacts to biological resources:

1. Limit Disturbance Areas. The boundaries of all areas to be temporarily or permanently disturbed (including staging areas, access roads gen-tie line

pole locations, etc.) shall be delineated with stakes and flagging prior to any site mobilization, vegetation clearing, ground disturbance, or construction activities in consultation with the DB. All construction sites, laydown areas, and parking locations shall be fenced to prevent potential access to the site by small animals. Fencing shall not be required around generation tie-line line pole locations; however full-time biological monitoring would be required for work in any unfenced areas. Any deviations of the fencing requirements shall be approved by the CPM. Spoils shall be stockpiled away from the edges of drainages and stabilized to ensure sediment laded water does not enter the drainage. All disturbances, vehicles, and equipment shall be confined to the flagged areas.

2. Minimize Road Impacts. New and existing roads that are planned for construction, widening, or other improvements shall not extend beyond the flagged impact area as described above. All vehicles passing or turning around would do so within the planned impact area or in previously disturbed areas. Where new access is required outside of existing roads or the construction zone, the route shall be clearly marked (i.e., flagged and/or staked) prior to the onset of construction.
3. Minimize Traffic Impacts. Vehicular traffic during project site mobilization, construction and operation shall be confined to existing routes of travel to and from the project site, and cross-country vehicle and equipment use outside designated work areas shall be prohibited. The speed limit shall not exceed 15 miles per hour on paved or stabilized unpaved roads within the project area, on maintenance roads for linear facilities, or on access roads to the project site. Project vehicles shall abide by posted speed limits on paved public roads outside the project site.
4. Inspect Pipes and Trenches. At the end of each workday, the DB, Biological Monitor, and/or site personnel (approved and trained by the DB, as described under **BIO-2**) shall ensure that all potential wildlife pitfalls (trenches, bores, and other excavations) have been backfilled. If site personnel are inspecting trenches, bores, and other excavations and wildlife is trapped, they shall immediately notify the DB and/or Biological Monitor. If backfilling is not feasible, all trenches, bores, and other excavations shall be covered to prevent wildlife entrapment or sloped at a 3:1 (protected: impacted) ratio at the ends to provide wildlife escape ramps.

   Should wildlife become trapped, the DB or Biological Monitor shall remove and relocate the animal to a safe location. Any wildlife encountered during construction shall not be harassed and shall be allowed to leave the construction area unharmed. If needed, a qualified biologist possessing the appropriate state and federal scientific collecting permits may guide, handle, or capture an individual non-CESA-listed wildlife species to move it to a nearby safe location within nearby refugium, or it shall be allowed to leave

the project area of its own volition. Capture methods may include hand, dip net, lizard lasso, snake tongs and snake hook.

5. Prevent Wildlife Entrapment. All pipes, tubes, ducting, or other cavities, 2 inches or greater, shall be capped to prevent wildlife entrapment. Portable toilets shall require vent pipes to be screened to prevent cavity using birds from becoming trapped in the pipe.
6. Unexpected Wildlife. The DB or Biological Monitor shall ensure that any unexpected special-status wildlife species such as California condor, or other species are fully avoided during construction. Should an unexpected wildlife species be detected a non-disturbance buffer shall be implemented based on the species ecology or species-specific condition of certification, and work shall be suspended in that area until the animal leaves on its own volition. Any observations of unexpected wildlife should comply with notification requirements provided in **BIO-2**, Item 6.
7. Prepare a Wildlife Protection and Relocation Plan. The project owner, in coordination with the DB, shall prepare a Wildlife Protection and Relocation Plan (WPRP) and submit to the CPM for review and approval, prior to start of site mobilization. The WPRP shall provide guidance and protocols when avoiding or handling common and sensitive species that are located within the project area. The WPRP shall include measures for handling rattlesnakes or other snakes found in or near work areas and access roads and provide these guidelines to all Biological Monitors, safety staff, and other personnel. Killing or harming rattlesnakes or other wildlife is not authorized, unless there is an immediate and unavoidable threat to human safety and relocation is not feasible. The WPRP shall include methods to salvage or relocate common and sensitive wildlife during ground disturbance activities including clearing, grubbing, and grading operations when feasible to off-site habitat or out of harm's way. Specific plans for the handling of California red-legged frog, California tiger salamander, Crotch's bumble bee, and burrowing owl are included in COCs **BIO-10**, **BIO-11**, **BIO-12**, and **BIO-18**. The species shall be salvaged or relocated when conditions would not jeopardize the health and safety of the DB or Biological Monitor.
8. Minimize Lighting Impacts. To minimize adverse effects of artificial light on wildlife, exterior lighting fixtures associated with project construction shall be downward facing, fully shielded, and designed and installed to minimize backscatter, reflection, minimize skyward illumination, minimize spillover onto adjacent wildlife habitat. Lights used shall be lower on the light spectrum (lower Kelvins with fewer short-wavelength blue light emissions).
9. Use Non-toxic Soil Binders. Soil bonding and weighting agents used on unpaved surfaces shall be non-toxic to wildlife and plants and shall be approved by the CPM prior to use.

10. Minimize Impacts from Pest Control. Anticoagulants shall not be used for rodent control. Pre-emergent and other herbicides with documented residual toxicity shall not be used. Herbicides shall be applied consistent with federal, state, and local laws and according to the guidelines for wildlife-safe use of herbicides in Item 20.
11. Minimize Standing Water. Water applied to dirt roads and construction areas (trenches or spoil piles) for dust abatement shall use the minimal amount needed to meet safety and air quality standards to prevent the formation of puddles, which could attract predators of special-status species to construction sites. During construction, site personnel shall patrol these areas to ensure water does not puddle and attract crows and other wildlife to the site, and shall take appropriate action to reduce water application rates where necessary.
12. Handling of Road-killed Animals. Report all inadvertent deaths of special status species to the appropriate project representative, including roadkill. Species name, identifiable physical characteristics of the animal (sex, age class, length, weight), and other pertinent information shall be noted and reported in the Monthly Compliance Reports. During construction, injured or dead animals detected by personnel in the project area shall be reported immediately to the DB and/or Biological Monitor, who shall remove the carcass or injured animal promptly. During operations, the Environmental Compliance Manager, or equivalent position, for the project owner shall be notified and they shall contact the DB and/or Biological Monitor for further instructions. The DB shall notify the project owner, the CPM, and CDFW directly of any special-status species injury or mortality. Notifications shall occur immediately and no later than the following morning, or Monday morning in the case of a weekend, or the next business day in the case of a state or federal holiday per **BIO-2**. Additionally, the DB shall contact the CPM, CDFW and/or USFWS within 1 working day of receipt of the carcass for guidance on disposal or storage of the carcass. The project owner shall follow instructions that are provided by the appropriate agency contact. The veterinary fees for the treatment of injured wildlife shall be covered by the project owner for project-related injuries or wildlife found injured on the project site.
13. Minimize Spills of Hazardous Materials. All vehicles and equipment shall be maintained in proper working conditions to minimize the potential for fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials or wastes. The DB and/or Biological Monitor shall be informed immediately of any hazardous spills. Any on-site servicing of vehicles or construction equipment shall take place only at a designated area approved by the DB. Service/maintenance vehicles shall carry a bucket and pads to absorb leaks or spills.

14. Remove Trash Weekly. During construction all trash and food-related waste including micro-trash shall be placed in secure, self-closing containers to prevent access by wildlife and removed weekly or more frequently from the site. Workers shall not feed wildlife or bring pets to the project site.
15. No Firearms. Except for law enforcement or security personnel, no workers or visitors to the site shall bring firearms or weapons to the project site.
16. Avoid Use of Toxic Substances. Soil bonding and weighting agents used on unpaved surfaces shall be non-toxic to wildlife and plants.
17. Minimize Disturbance Areas. Limit the size of any vegetation and/or ground disturbance to the minimum area needed for safe completion of project activities, and limit ingress and egress to defined routes; Vegetation marked for protection may only be trimmed with hand tools to the extent necessary to gain access to work sites. The project owner shall ensure that mower blade heights are set no lower than 4 inches, unless otherwise approved by the CPM in writing.
18. Weed and Monofilament Free Wattles. All materials used for erosion control and sediment barriers (e.g. straw, hay bales, and seed) shall be certified as weed free. Monofilament plastic shall not be used for erosion control. In addition, non-native species shall not be used in landscaping plans and erosion control;
19. Consistent with APLIC Guidelines. The generation tie-line and all associated components shall be designed, installed, and maintained in accordance with the Avian Power Line Interaction Committee's (APLIC's) Suggested Practices for Avian Protection on Power Lines (APLIC 2006) and Reducing Avian Collisions with Power Lines (APLIC 2012), or most recent APLIC guidance, to reduce the likelihood of large bird electrocutions and collisions;
20. Herbicide and Pesticide Use. During construction and operation, the project owner shall conduct pesticide management in accordance with standard BMPs. The BMPs shall include non-point source pollution control measures. The project owner shall use a licensed herbicide applicator and obtain recommendations for herbicide use from a licensed Pest Control Advisor. The project owner shall minimize use of rodenticides and herbicides in the project area and prohibit the use of chemicals and pesticides known to cause harm to non-target plants and wildlife. Prior to any such use of herbicides or pesticides, the project owner shall consult with the CPM and may only use herbicides or pesticides upon the CPM's express written approval for each type of use. The project owner shall ensure that any herbicide use only occurs when Crotch's bumble bees are dormant, or when flowers within the application area are no longer in bloom, unless authorized by the CPM to control weeds.

The project owner shall not use pesticides, including herbicides, insecticides, fungicides, or rodenticides within the project area without prior consultation with and written approval from the CPM. Herbicides may be used if needed for noxious weed control or habitat restoration and enhancement.

Areas identified as sensitive by the DB, or with suspected occupied nesting or denning habitats, shall not be treated with pesticides or herbicides. Through this consultation, the CPM, in coordination with CDFW, may approve limited use of herbicides through targeted spray (e.g., backpack sprayer) at a buffer from covered species habitat. Herbicide-mixing sites shall be located in areas devoid of vegetation, and where there is no potential of a spill reaching a vegetated area or waters of the state. Use of neonicotinoid pesticides will not be approved by the CPM within the project area. If approved by the CPM, application would be in accordance with federal, state, and Alameda County regulations, as directed by the manufacturer, and shall be applied by a California state-licensed pesticide applicator.

The project owner shall ensure that pesticide use only occurs when Crotch's bumble bee are dormant or when flowers are no longer in bloom. Pesticides (including insecticides) may only be applied post construction in indoor areas where contact with wildlife and foraging Crotch's bumble bee could not occur. The project owner shall only use pesticides for which a "no effect" determination has been issued by the EPA's Endangered Species Protection Program for any species likely to occur within the project area, per **BIO-13** if rodent control must be conducted, zinc phosphide or an equivalent product shall be used.

21. Minimize Stormwater Impacts. Standard best management practices (BMPs) from the project Storm Water Pollution Prevention Plan shall be implemented during all phases of the project (construction, operation, and decommissioning) where storm water run-off from the site could enter adjacent drainages. Sediment and other flow-restricting materials shall be moved to a location where they shall not be washed back into the jurisdictional waters. All disturbed soils within the project site shall be stabilized to reduce erosion potential, both during and following construction. Impacts from grading shall be minimized by ensuring that existing drainage areas and patterns be maintained in their pre-project conditions, as feasible.
22. Storage of Project Materials. Work crews shall store all project materials, tools, hardware, equipment and all loose items in a manner that shall prevent their removal or ingestion by California condors and other wildlife.

Verification: All general impact avoidance and minimization measures shall be included in the BRMIMP and implemented. Implementation of the measures shall be reported by DB in the Monthly Compliance Reports during construction and

reported in Annual Compliance Reports during operation, including but not limited to the requirements cited above and in **BIO-2**.

The project owner shall submit the draft WPRP to the CPM for review and comment at least 45 days prior to the start of project site mobilization. The project owner shall provide the final WPRP to the CPM for approval at least 10 days prior to project site mobilization.

Within 30 days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written construction termination report identifying how measures were completed.

BIO-8 Vegetation Restoration and Enhancement Plan The project owner shall develop and implement a Vegetation Restoration and Enhancement Plan (Restoration Plan) to restore 6.7 acres of habitat subject to temporary impacts. The restoration activities shall not be implemented until the project owner has received written approval from the CPM of the Restoration Plan. The Restoration Plan shall be prepared in consultation with the DB or qualified restoration specialist and shall include, but not be limited to, the following:

1. Performance Standards. The Restoration Plan shall include the following performance standards that project owner shall meet:
    a. Gravel and other non-native substrate shall be removed from restoration areas;
    b. To the maximum extent feasible, topsoil shall be salvaged from within on-site work areas prior to construction. Imported fill soils shall be limited to weed-free and pathogen-free topsoil similar in texture, chemical composition and pH to soils found at the project area;
    c. Minor re-contouring may be conducted; however, project owner shall limit grading compaction, fill, and other earthmoving activities to the project Area. Soils shall be protected from wind erosion using a biodegradable erosion control blanket or appropriate mulch cover, or other appropriate methods approved by the CPM, until vegetation is established. Seed shall be applied in the early fall, typically between October 15 and October 31, or outside of this window with CPM approval. If feasible, seed shall be applied immediately prior to the first rain event. Mulch and seed shall be weed free and pathogen free;
    d. Seed mixes shall be approved by the CPM prior to application and shall include a mix of locally native species and non-native forage species (no species designated by Cal-IPC as high or moderate invasive species may be used), including diverse assemblages of native and non-native flora, with an emphasis on native bunchgrasses and other grassland species including local, native wildflowers. Seed may be collected from within the Project Area. Additional seed shall be sourced from within 50 miles

of the Project Area, and within level 4 eco-regions as seed zones, to the extent feasible (original genetic material collected within this radius); however, the seed may be purchased from a seed farm outside of this area. For seeding and mulching exposed slopes, the seed blend may include one or two sterile non-native perennial grass species. Seed mixes shall not have been treated with pesticides and shall be pathogen-free.

e. The project owner shall complete seeding prior to winter rains, but no later than October 31 of the year of the impact (or by December 31 of the year of the impact with prior approval from the CPM). At the discretion of the CPM, all exposed areas where seeding is unsuccessful after 90 days shall receive appropriate soil preparation and a second application of seeding, straw, or mulch as soon as is practical on a date mutually agreed upon. Straw and/or mulch used shall be weed and pathogen free.

f. No more than 15 percent of the vegetation shall consist of species designated as high or moderate invasive plants in the Cal-IPC California Invasive Plant Inventory Database (CAL-IPC). If the presence of invasive species exceeds this threshold, the project owner is responsible for conducting appropriate control activities in coordination with the CPM.

2. Monitoring and Maintenance. The project owner is responsible for monitoring and maintaining the restored areas for a period of three years or until the Restoration Plan success criteria have been met, whichever is longer. Following the initial six-month period after restoration activities conclude, the project owner shall submit a brief monitoring report (10 pages or less, not including figures) to the CPM. This report detailing vegetation establishment, percent invasive plant cover, and other observations regarding restoration success.

   The report shall include the following: i) monitoring results (including methods and a discussion of modifications since the previous monitoring period); ii) evaluation of conditions relative to success criteria; iii) remedial measures identified and implemented following the previous monitoring period; and iv) overall site progress. Any proposed changes to the performance criteria or timelines shall require the CPM's written approval. The report shall include photos from designated photo stations at the mitigations site. Annual reports must be submitted thereafter.

   If the survival and/or cover requirements are not meeting the performance standards outlined in Item 5, the project owner is responsible for replace-ment planting, additional watering, weeding, invasive plant eradication, or any other practice necessary to achieve these requirements. Project owner shall submit annual restoration reports by December 31 to the CPM until the

standards have been met. Replacement plantings shall be monitored with the same survival and growth requirements for three years after planting.

3. Pollen and Nectar Resources. The Restoration Plan shall include a list of pollen and nectar resources that specifies a palette of drought-tolerant, locally native (eastern San Francisco Bay Area) species of which at least three species can be expected to be blooming at any given time throughout the active season for Crotch's bumble bee (approximately February 1 through October 31). Nectar- and pollen-producing plants that may be used by Crotch's bumble bee include, but are not limited to, the genera *Asclepias, Chaenactis, Lupinus, Phacelia*, and *Salvia*, and plants in the families Fabaceae, Apocynaceae, Asteraceae, Lamiaceae, Hydrophyllaceae, Plantaginaceae, Onograceae, Papaveraceae, Polygonaceae, Boraginaceae, including non-native flowering plants. The plan shall also identify a revised list of locally native pollen and nectar resources appropriate for incorporation in the grassland seed mix to be used for restoration. The Restoration Plan shall specify that pollen and nectar resources imported to the project area shall not have been treated with pesticides and shall be pathogen-free.

4. Photo Monitoring. The DB shall establish no less than 10 photo monitoring stations to provide representative views of project construction and restoration activities. Photo monitoring station results shall contribute to the CPM's assessment of temporary impacts and restoration work; therefore, the DB should ensure that photo monitoring stations numbers and locations are sufficient to document temporary impacts and restoration success. Photo monitoring shall be done as follows:

   Stations should be located in areas that allow for unobstructed views and a field of vision of approximately 2,000 feet.

   a. At least one photograph shall be taken at all stations prior to ground-disturbing activities, and each month thereafter until construction and initial restoration are complete. Photo documentation of restoration success shall occur every three months following initial restoration until restoration success criteria are reached.

   b. Photo monitoring station locations shall be provided to the CPM in a geographic format with the coordinate system and horizontal error identified. If the CPM determines, in coordination with the DB (as necessary), that additional monitoring stations are necessary, the locations shall be added to the inventory of photo monitoring stations.

      During each photo monitoring cycle, the project owner shall take photographs at all stations within two consecutive days.

Verification: The project owner shall submit a draft Vegetation Restoration Plan to the CPM for review and approval at least 30 days prior to the start of restoration activities, or within 6 months of certification, whichever occurs first.

After the first 6 months of restoration activities, the project owner shall submit to the CPM for review and approval a monitoring report. The project owner shall submit an Annual Restoration report to the CPM for review and approval before December 31st each year until all performance standards are met.

BIO-9 Special-Status Plant Avoidance Measures The DB and/or Biological Monitor(s) shall conduct floristic pre-construction surveys for special-status plants prior to the start of ground or vegetation disturbing project activities, including site mobilization or construction. Surveys shall be conducted with the appropriate protocols approved by the CPM during the appropriate season in all suitable habitat within the project disturbance areas and access roads and within 100 feet of disturbance areas, where accessible. Surveys shall be conducted by qualified botanists or biologists approved by the CPM, pursuant to **BIO-1** and/or **BIO-3**.

The field surveys and reporting shall be consistent with current CDFW botanical field survey protocol (CDFW 2018) or more recent updates. With respect to areas potentially directly disturbed during the construction of the generation tie-line, protocol surveys shall be consistent with current CDFW botanical field survey protocol (CDFW 2018) and are required for areas that have not previously been surveyed by the project owner to date. During each year of construction, and prior to site mobilization and ground disturbance, the project owner shall identify proposed survey areas to the CPM for review and approval prior to initiating annual botanical surveys. The survey plan shall identify proposed survey areas and the rationale for any areas not proposed for surveys. The survey plan shall include maps, at an approved scale, clearly defining each proposed survey area.

Any special-status plant species (including state and federally listed threatened or endangered species, candidates for listing, and all CRPR 1A, 1B, 2, 3, and 4 ranked species) detected shall be documented in the pre-construction survey reports. The results shall be submitted to CPM for review and approval, as well as CDFW and USFWS (should federally listed plants be discovered). The reports shall describe any conditions that may have prevented target species from being located or identified, even if they are present as dormant seeds or below-ground root stock (e.g., poor rainfall, disturbance, or wildfire). In some cases, follow-up surveys may be necessary to adequately evaluate impacts. Pre-construction field survey reports shall include maps, at an approved scale, showing locations of survey areas, reference populations, and special-status plants.

The results of these surveys would inform the implementation of appropriate avoidance and minimization measures, as outlined below:

1. Avoidance. Where feasible, any special status plant shall be protected by establishment of a minimum 50-foot non-disturbance buffer. The buffer area shall be clearly staked, flagged, and signed for avoidance prior to the beginning of site mobilization and maintained throughout the construction

phase. The buffer zone shall be of sufficient size to prevent direct or indirect disturbance to the plants from site mobilization and construction activities, erosion, inundation, or dust.

The final buffer distance shall be determined by a qualified biologist or botanist, approved under **BIO-1** and/or **BIO-3**, based upon the proposed use of the immediately adjacent areas and the plant's ecological requirements (e.g., sunlight, moisture, shade tolerance, water availability, edaphic physical and chemical characteristics).

For tree or shrub species, the buffer shall be no less than twice the drip line (i.e., two times the distance from the trunk to the canopy edge) to protect and preserve the root systems. For herbaceous species, the buffer shall be a minimum of 50 feet from the outer edge of the occupied habitat or the individual.

If a smaller buffer is necessary due to other site-specific constraints, the project owner, in coordination with the DB or qualified botanist shall develop and implement site-specific protection measures, such as monitoring, to avoid the impacts to the species, if possible. The measure shall be subject to approval from the CPM, in consultation with CDFW. Such measures may include placing decking or pads above dormant species to prevent their loss and limit soil compaction.

2. Compensatory Mitigation. If avoidance is not feasible, the project owner shall mitigate impacts to any state or federally listed plants that are subject to disturbance from project activities. Should a State listed plant be subject to disturbance the project owner would be required to implement standard categories of mitigation applicable for take coverage through CESA which includes seed salvage, propagation, and the preservation of lands occupied by the species. The measures shall be subject to approval from the CPM, in consultation with CDFW. In addition, the project owner shall provide compensatory mitigation for CRPR 1 or 2 ranked species if project activities result in the loss of more than 10 percent of a defined occurrence due to direct or indirect impacts to soils, vegetation, or water transport that could affect the species' viability.

   An occurrence, or local population, shall be defined as the number of individuals occurring on the project site or all plants within a 0.25-mile buffer.

   a. For perennial species, percent avoidance shall be based on population size or number of individuals avoided.

   b. For annuals, avoidance shall be based on occupied habitat, which include habitat containing the species' micro-habitat preferences (e.g., such as "soil types and moist depressions").

Occupied habitat shall be calculated on both the project site and compensation lands as including each special status plant occurrence and a surrounding 100-foot buffer area to account for seed bank. The project owner shall provide compensation lands at the following minimum ratios:

a. 3:1 (protected: impacted) for any state or federally listed plants and CRPR 1 or 2 ranked species; and

b. 2:1 (protected: impacted) ratio for CRPR 1 or 2 ranked species.

3. Compensatory Mitigation by Acquisition. The requirements for the acquisition, initial protection and habitat improvement, and long-term maintenance and management of special-status plant compensation lands shall include the following:

   a. Selection Criteria for Acquisition Lands. The compensation lands selected for acquisition may include any of the following three categories:

      i. Occupied Habitat, No Habitat Threats. The compensation lands selected for acquisition shall be occupied by the target plant population and shall be characterized by site integrity and habitat quality that are required to support the target species and shall be of equal or better habitat quality than that of the affected occurrence. The occurrence of the target special-status plant on the proposed acquisition lands should be viable, stable, or increasing (in size and reproduction).

      ii. Occupied Habitat, Habitat Threats. Occupied compensation lands characterized by habitat threats may also be acquired if the population could be reasonably expected to recover with habitat restoration efforts (e.g., OHV or grazing exclusion, or removal of invasive non-native plants) and is accompanied by a Habitat Enhancement/Restoration Plan.

      iii. Unoccupied but Adjacent. The project owner may also acquire habitat for which occupancy by the target species has not been documented, if the proposed acquisition lands are adjacent to occupied habitat. The project owner shall provide evidence that acquisitions of such unoccupied lands would improve the defensibility and long-term sustainability of the occupied habitat by providing a protective buffer around the occurrence and by enhancing connectivity with undisturbed habitat. This acquisition may include habitat restoration efforts where appropriate, particularly when these restoration efforts would benefit adjacent habitat that is occupied by the target species.

4. Review and Approval of Compensation Lands Prior to Acquisition. The project owner shall submit a formal acquisition proposal that discusses the suitability

of the proposed parcel(s) as compensation lands for special-status plants in relation to the criteria listed above. The formal acquisition proposal shall be submitted for review and approval to the CPM, in coordination with CDFW and/or USFWS.

5. Compensation Lands Management Plan. The project owner shall prepare a management plan for the compensation lands in consultation with the entity that would be managing the lands. The objective of the management plan shall be to support and enhance the long-term viability of the target special status plant occurrences. The Compensation Lands Management Plan shall be submitted for review and approval to the CPM, in coordination with the CDFW and/or USFWS.
6. Integrating Special-Status Plant Mitigation with Other Mitigation Lands. If all or any portion of the acquired compensation lands for Crotch's bumble bee, burrowing owl, waters of the state, or other required compensation lands meets the criteria above for special-status plant compensation lands, the portion of the other species or habitat compensation lands that meets any of the criteria above may be used to fulfill that portion of the obligation for special-status plant mitigation.
7. Compensation Lands Acquisition Requirements. The project owner shall comply with the following requirements relating to acquisition of the compensation lands after the CPM has approved the proposed compensation lands:
    a. Preliminary Report. The project owner, or an approved third party, shall provide a recent preliminary title report, initial hazardous materials survey report, biological analysis, and other necessary or requested documents for the proposed compensation land to the CPM and CDFW. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the CPM. For conveyances to the State, approval may also be required from the California Department of General Services and the Wildlife Conservation Board.
    b. Title/Conveyance. The project owner shall acquire and transfer fee title to the compensation lands, a conservation easement over the lands, or both fee title and conservation easement, as required by the CPM. Any transfer of a conservation easement or fee title shall be to CDFW if accepted by CDFW, a non-profit organization qualified to hold title to and manage compensation lands (pursuant to California Government Code section 65965), or other public agency approved by the CPM. If an approved non-profit organization holds fee title to the compensation lands, a conservation easement shall be recorded in favor of CDFW or another entity approved by the CPM. If an entity other than CDFW holds a conservation easement over the compensation lands, the CPM may require that CDFW or another entity approved by the CPM, in

consultation with CDFW, be named a third-party beneficiary of the conservation easement. The project owner shall obtain approval of the CPM of the terms of any transfer of fee title or conservation easement to the compensation lands.

c. Initial Protection and Habitat Improvement. The project owner shall fund activities that the CPM requires for the initial protection and habitat improvement of the compensation lands. These activities would vary depending on the condition and location of the land acquired, but may include trash removal, construction and repair of fences, invasive plant removal, and similar measures to protect habitat and improve habitat quality on the compensation lands.

   The habitat improvement funds may be held and expended by a qualified non-profit organization, CDFW or another public agency, provided that the entity is qualified to manage compensation lands (pursuant to California Government Code section 65965) and is authorized to participate in implementing the required activities on the compensation lands, upon approval of the CPM, in consultation with CDFW. If CDFW accepts fee title to the compensation lands, the project owner shall provide the habitat improvement fund directly to CDFW or its designee.

d. Property Analysis Record. Upon identification of the compensation lands, the project owner shall conduct a Property Analysis Record (PAR) or PAR-like analysis to establish the appropriate amount of the long-term maintenance and management fund to pay the in-perpetuity management of the compensation lands. The PAR or PAR-like analysis must be approved by the CPM before it can be used to establish funding levels or management activities for the compensation lands.

e. Long-term Maintenance and Management Funding. The project owner shall deposit a capital long-term maintenance and management fee in a dedicated interest-bearing account held by governmental entity, special district, or nonprofit organization or other CPM approved entity, in the amount determined through the Property Analysis Record (PAR) or PAR-like analysis conducted for the compensation lands. The CPM, in consultation with CDFW, may designate another non-profit organization to hold the non-refundable, long-term maintenance and management fee if the organization is qualified to manage the compensation lands in perpetuity. If CDFW takes fee title to the compensation lands, CDFW shall determine whether it would hold the long-term management fee in the special deposit fund or designate another entity to manage the long-term maintenance and management fee under CDFW oversight.

   In addition to the costs listed above under Measures Items a-d, the project owner shall be responsible for all other costs related to acquisition of compensation lands and conservation easements, including but

not limited to: title and document review costs incurred from other state agency reviews, overhead related to providing compensation lands to CDFW or an approved third party, escrow fees or costs, environmental contaminants clearance, and other site cleanup measures.

f. Mitigation Security. The project owner shall provide financial assurances to the CPM to guarantee that an adequate level of funding is available to implement any of the mitigation measures required by this condition that are not completed prior to the start of site mobilization and ground-disturbing activities.

Financial assurances shall be provided to the CPM, and copy to the CDFW, in the form of an irrevocable letter of credit, a pledged savings account or another form of security ("Security") approved by the CPM. The actual costs to comply with this condition will vary depending on the actual costs of acquiring compensation habitat, the costs of initially improving the habitat, and the actual costs of long-term management as determined by a PAR report.

Prior to submitting the evidence of Security, the project owner shall obtain the CPM's approval of the form of the Security. The CPM may draw on the Security or approve of the security beneficiary to draw on the security, if the CPM determines the project owner has failed to comply with the requirements specified in this condition. Funds from the Security may solely be used for implementation of the requirements of this condition. Use of the Security by the CPM or other approved entity does not relieve the project owner of its obligations under this condition if the Security is insufficient to fully cover required measures. Any unused portion of Security shall be returned to the project owner, in whole or in part, upon successful completion of the associated requirements in this condition.

8. Monitoring. Annual monitoring and documentation of salvaged plants shall include, but not be limited to, details of plants salvaged, stored, and transplanted (salvage and transplanting locations, species, number, size, condition, etc.); adaptive management efforts implemented (date, location, type of treatment, results, etc.); and evaluation of success of transplantation. Transplanted species may not be placed in areas subject to future land disturbance and must be protected by a conservation easement that prohibits disturbance and ensures conservation of the site in perpetuity. Conservation lands would be acquired consistent with the specifications identified above under Section b. Title /Conveyance. Annual monitoring shall occur for a minimum of three years post-relocation to ensure the plants become established and are not at risk from weeds or other impacts, unless approved by the CPM. The results of annual monitoring shall be reported in an Annual Monitoring Report specific to salvaged of propagated plants for a minimum of three years of annual reports. Additional monitoring may be

necessary if determined upon review of the annual reports by the CPM that the success criteria are not met. Success criteria shall include maintaining habitat occupied by the impacted species at the identified ratios and number of plants for any occupied habitat affected by the project.

9. Propagation and Relocation Strategy. If salvage and relocation is not believed to be feasible for special-status plants, then the project owner shall consult with California Botanic Garden, or another qualified entity, to develop an appropriate propagation and relocation strategy, based on the life history of the species affected. The Special-Status Plant Propagation and Relocation Plan shall include at minimum: (a) collection and salvage measures for plant materials (e.g., cuttings), seed, or seed banks, to maximize success likelihood; (b) details regarding storage of plant, plant materials, or seed banks; (c) location of the proposed propagation facility, and proposed methods; (d) time of year that the salvage and other practices will occur; (e) success criteria; and (f) a detailed monitoring program, commensurate with the plan's goals. The draft Special-Status Plant Propagation and Relocation Plan shall be submitted to the CPM for review and approval and to the CDFW for review and comment. The final plan approved by the CPM shall be submitted prior to any salvage or relocation.

Verification: The project owner shall submit the proposed annual survey plan 45 days prior to commencing the surveys to the CPM for review and approval. The project owner shall submit the results of each annual survey to the CPM for review and approval no more than 45 days after the completion of the surveys.

Should mitigation be required the project owner shall submit the Habitat Enhancement/Restoration Plan, Formal Acquisition Proposal, Compensation Lands Management Plan, Recent Preliminary Title Report, and Property Analysis Record (PAR) and Security to the CPM for review and approval and the CDFW/USFWS if applicable for review and comment no later than 45 days prior to construction. If plant propagation is proposed as mitigation the project owner shall submit the Special-Status Plant Propagation and Relocation Plan to the CPM for review and approval and the CDFW/USFWS if applicable for review and comment no later than 45 days prior to construction. The project owner shall submit the Annual Monitoring Reports to the CPM for review and approval no more than 30 days after each reporting period.

BIO-10 Crotch's Bumble Bee Measures for Take The project owner shall implement the following measures to avoid, minimize and offset impacts to Crotch's bumble bee during site mobilization, construction, and operation:

The DB and/or Biological Monitor(s) shall conduct preconstruction surveys and monitoring for Crotch's bumble bee. Surveys shall be conducted by a qualified entomologist(s) or biologist(s) familiar with the life history and ecology of

Crotch's bumble bee. All proposed surveyors shall be approved by the CPM, in coordination with the CDFW, pursuant to **BIO-1** and/or **BIO-3**.

Surveys shall cover all project work areas, including staging and parking areas. Surveys shall follow the non-invasive protocols established by CDFW in "Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species" or more recent CDFW-approved methods, as available (CDFW 2023).

1. Crotch's Bumble Bee Mortality Reduction and Relocation Plan. The project owner shall submit a Crotch's Bumble Bee Mortality Reduction and Relocation Plan to the CPM for review and approval, and to the CDFW for review and comment, prior to beginning any site mobilization or ground disturbing activities. The Crotch's Bumble Bee Mortality Reduction and Relocation Plan shall include a map of the project area indicating where Crotch's bumble bee are likely to occur; a detailed description of the survey methodology (survey details shall be in accordance with the Colony Active Period Season - Pre-Construction Survey described below under Item 3); bumble bee identification and handling methods; measures that would be implemented to minimize impacts to foraging bees during ground disturbing and vegetation removal activities; measures to minimize impacts to overwintering bees during overwintering habitat removal; and measures to minimize impacts to bumble bee nests that are discovered during project activities. The plan shall identify nest relocation techniques and locations where Crotch's bumble bee nests would be relocated to; an assessment of the habitat and floristic resources found within the relocation sites; and a detailed description of the relocation process including method of removal, transport, and relocation.

   The Mortality Reduction and Relocation Plan shall provide the name and contact information for a native bumble bee researcher who would assist and/or consult on techniques to relocate Crotch's bumble bee nests and the procedure for notification, collection, and salvage of Crotch's bumble bee carcasses. Only the CPM-approved DB(s), or personnel following direction from and under the supervision of the CPM-approved DB(s), are authorized to handle and transport Crotch's bumble bee individuals and Crotch's bumble bee nests for salvage. Handling of Crotch's bumble bee individuals and nests by any personnel not specifically authorized by the CPM is prohibited.

   Upon written approval of the Crotch's Bumble Bee Mortality Reduction and Relocation Plan by the CPM, it shall be implemented and remain in effect for the duration of the project license. The plan may be updated by the project owner, in consultation with and subject to the approval of the CPM, to reflect best available science, address unanticipated issues associated with implementation, or update mitigation and conservation strategies. In such cases, the CPM will contact the project owner to discuss needs to update the plan. Any proposed changes to the Crotch's Bumble Bee Mortality Reduction

and Relocation Plan shall be submitted, in writing, to the CPM for approval prior to the implementation of any proposed modifications.

2. Overwintering Season Surveys (Pre-Construction and During Operation). If initial ground disturbing construction activities in any given work area occurs during the overwintering season (November 1 through January 31), the CPM approved DBs(s) and/or Biological Monitor(s) shall conduct overwintering season surveys within areas of suitable habitat (i.e., where vegetation and floral resources occur) in each area planned for project activities no more than 10 days in advance of vegetation removal or ground disturbance in that area of the project site. If ground disturbing activities during operation occur within areas of suitable habitat (i.e., where vegetation and floral resources occur) during the overwintering season, the CPM-approved DB(s) shall conduct overwintering season surveys throughout the project site in areas planned for ground disturbance no more than 10 days in advance of ground or vegetation removal activities, unless approved by the CPM.

   Overwintering season surveys shall look for potential Crotch's bumble bee overwintering queens and hibernacula such as leaf litter, logs, and rodent burrows. If overwintering queens or other Crotch's bumble bee are found utilizing hibernacula during surveys, the project owner shall implement the Overwintering Site Buffer (see Item 5, below).

3. Colony Active Period Season (Pre-Construction and Pre-Maintenance). If initial ground disturbing construction activities, including site mobilization, in any given work area occur during the Colony Active Period (February 1 to October 31), the CPM-approved DB(s) and/or Biological Monitor(s) shall search for Crotch's bumble bee throughout the area planned for project activities in accordance with the Crotch's Bumble Bee Mortality Reduction and Relocation Plan.

   Survey efforts for each area shall include at least two visual surveys consisting of meandering transects occurring no more than 10 days prior to the start of ground and vegetation disturbing activities in that area. The CPM approved DB(s) and/or Biological Monitor(s) shall conduct the surveys at least four days apart, with the second survey occurring within two days prior to starting ground and/or vegetation removal activities in that area. The survey duration shall be appropriate to the size of the area planned for project activities plus 50 feet based on the metric of a minimum of one person-hour of searching per three acres of suitable habitat. The CPM approved DB(s) and/or Biological Monitor(s) shall conduct surveys between 7:00 AM and 6:00 PM (Pacific Time) on sunny days between 55- and 95-degrees Fahrenheit with sustained wind speeds measuring less than 10 miles per hour. Survey efforts are further detailed in the Crotch's Bumble Bee Mortality Reduction and Relocation Plan, and any variances to the Survey

Protocol, including variances to survey temperatures or timing, shall be submitted to the CPM for review and approval prior to implementation.

If ground disturbing activities occur during operation within areas of suitable habitat during the colony active period, the CPM-approved DB(s) and/or Biological Monitor(s) shall search for Crotch's bumble bee throughout the areas planned for ground disturbance in accordance with the Crotch's Bumble Bee Mortality Reduction and Relocation Plan.

If ground disturbing activities are halted for longer than three days within a work area supporting suitable habitat during the Queen Flight Season (February 1 through March 31), the CPM approved DB(s) and/or Biological Monitor(s) shall perform a minimum of one additional survey in the work area in accordance with the Crotch's Bumble Bee Mortality Reduction and Relocation Plan prior to reinitiating project activities in the work area.

If a Crotch's bumble bee nest is detected during project surveys or any project activities, the project owner shall implement the Crotch's Bumble Bee Mortality Reduction and Relocation Plan unless the nest can be avoided per the Crotch's Bumble Bee Nest Site Buffer measures (Item 6).

4. Pre-Construction Survey and Observation Submittal (Construction and Operation). The project owner shall provide the Colony Active Period Season - Pre-Construction Survey (Item 3) results or Overwintering Survey Results (to the CPM no more than ten days prior to initiating or resuming (Item 2) if initial disturbance not complete) project activities in each work area, unless alternate timing is approved by the CPM. The CPM-approved DB(s) and/or Biological Monitor(s) shall notify the CPM if an overwintering individual and/or nest is observed within 100 feet of the project site during site mobilization, construction, or operation. Pre-construction surveys and observational submittals shall include a Keyhole Markup Language (KML) map, or KML-Zipped (KMZ) map, and Geographic Information System (GIS) shapefiles of all Crotch's bumble bee detections and/or nests found during survey efforts or during any incidental observations, and photographs of the individual or nest. The map shall include an outline of the project site, and any distinct work area(s) surveyed within the project site, title, north arrow, scale bar, and legend.
5. Overwintering Site Buffer (Construction and Operation). If any overwintering Crotch's bumble bee are found during focused overwintering surveys, during ground and/or vegetation disturbing activities, including site mobilization or construction activities, or during operation of the project, the project owner, in consultation with the CPM approved DB(s) and/or Biological Monitor(s) shall immediately stop and prohibit all ground disturbing activities within 50 feet of the queen and/or hibernaculum. The project owner shall delineate the 50-foot buffer and notify all workers not to enter the environmentally

sensitive area. This buffer may be adjusted with the approval of the CPM based on project activities and potential to disturb the nest.

If an overwintering queen is exposed, the CPM approved DB(s) shall implement the Crotch's Bumble Bee Mortality Reduction and Relocation Plan. The CPM-approved DB(s) and/or Biological Monitor(s) shall record the queen's location with a GPS (including datum and horizontal accuracy in feet) and include photographs and a map of the queen's location as detailed in Item 4 (Pre-Construction Survey and Observation Submittal). Upon notice from the CPM, the project owner shall increase the size and modify the environmentally sensitive area buffer accordingly.

6. Crotch's Bumble Bee Nest Site Buffer (Construction and Operation). If a Crotch's bumble bee nest is identified during Colony Active Period Season focused surveys, during ground and/or vegetation disturbing site mobilization or construction activities, or during operation of the project, the project owner shall ensure establishment of a 50-foot no disturbance buffer around each nest. Buffers shall remain in place until the nest has senesced, project activities are complete, or the nest has been relocated in accordance with the Crotch's Bumble Bee Mortality Reduction and Relocation Plan. This buffer may be adjusted with the approval of the CPM based on project activities and potential to disturb the nest.

   To determine if a nest has senesced, the CPM-approved DB(s) and/or Biological Monitor(s) shall monitor the nest for senescence in late summer and fall (September-October). Nest senescence can typically be denoted after the presence of reproductives (gynes and males) are observed. Nests shall be monitored for a minimum of one hour per day for three consecutive days during optimal weather conditions (i.e., from 7:00 AM to 6:00 PM, low wind, and low cloud cover conditions, etc.). If there has been no nest activity after the above conditions are met, or the nest has been relocated, the no disturbance buffer may be removed upon approval of the CPM. Survey efforts shall be further detailed in Crotch's Bumble Bee Mortality Reduction and Relocation Plan (Item 1).

7. Daily Work Area Monitoring (Construction and Operation). The CPM approved DB(s) and/or Biological Monitor(s) shall be on-site during all initial ground disturbing site mobilization and/or construction activities in any given work area to visually monitor for Crotch's bumble bee and to detect flight activity. Visual sweeps of each work area shall occur prior to beginning daily project activities, and a minimum of three times throughout the workday, unless alternate timing is approved by the CPM.

   The CPM approved DB(s) shall be on-site during all ground disturbing operation activities occurring within areas of suitable habitat. The DB(s) and/or Biological Monitor(s) shall visually monitor for Crotch's bumble bee and to

detect flight activity. Visual sweeps of each work area shall occur prior to beginning ground disturbing activities, and a minimum of three times throughout the workday for the duration of ground disturbing activities, unless alternate timing is approved by the CPM.

8. Crotch's Bumble Bee Observations and Notification. All workers shall inform the CPM-approved DB(s) and/or Biological Monitor(s) if a Crotch's bumble bee nest is observed within or near a work area during implementation of any project activity, including ground or vegetation disturbing construction or operation activities. If a nest is observed all activities occurring within 50 feet of the nest shall cease and the project owner shall implement a 50-foot no disturbance buffer. If an overwintering Crotch's bumble bee nest cannot be avoided, then Item 1 (Crotch's Bumble Bee Mortality Reduction and Relocation Plan) shall be implemented.
9. Crotch's Bumble Bee Salvage. If a Crotch's bumble bee is accidentally killed during survey efforts, the project owner shall stop all work and immediately contact the CPM, and CDFW Regional Representative, for guidance. The carcass shall be photographed, salvaged, and placed in a labeled, clean plastic, resealable bag or vial and stored in a freezer. The label shall include a unique identifier (collection number), species name, time and date of collection, collection location, GPS location (including datum and horizontal error in feet), circumstances surrounding death (e.g. cooler may have been too cold; hot day and extreme shifts in temperature from ambient air to cooler may have contributed), collector name and contact information (phone number or email), and certification tracking number. If deemed necessary by the CPM, in coordination with CDFW, the carcass shall be delivered (on dry ice if possible) to the following address, or current address, and reported with photographs via email to the CPM, and CDFW Regional Representatives, at the time of collection and shipping:

   CDFW Wildlife Genetics Research Unit (Wildlife Health Lab)
   Attention: Michael Buchalski
   1415 North Market Blvd., Suite 9
   Sacramento, CA 95834
10. Pesticide and Herbicide Use. The project owner shall not use substances such as herbicides, insecticides, or rodenticides except as allowed under **BIO-7**, Item 20: Herbicide and Pesticide Use.

Verification: The project owner shall submit the draft Crotch's Bumble Bee Mortality Reduction and Relocation Plan no less than 45 days prior to commencing site mobilization or ground disturbing activities to the CPM for review and approval and to the CDFW for review and comment. The project owner shall provide the final plan to the CPM and CDFW at least 7 days prior to the start of any site mobilization or ground disturbing activities. The project owner shall submit the results of each survey (overwintering and colony active period) to the CPM for

review and approval and to the CDFW for review and comment no more than 10 days after the completion of the surveys. The project owner shall submit information describing the findings of the bumble bee surveys and implementation of any avoidance measures in the Monthly Compliance Report (per **BIO-6**) and the Annual Compliance Report, during operation, to the CPM.

BIO-11 California Tiger Salamander Measures for Take The project owner shall implement the following measures to avoid, minimize and offset impacts to breeding and foraging California tiger salamander during site mobilization, construction, and operation:

1. Inspections. The following inspections shall be implemented to prevent injury or mortality of California tiger salamander during ground-disturbing or other construction activities:
    a. Daily Morning Inspections: Before the start of work each morning, the DB and/or Biological Monitor shall inspect all vehicles, heavy equipment, materials, and other suitable hiding locations within the project site, per **BIO-2**, Item 7.
    b. Equipment Moving: All workers shall inspect beneath vehicles and equipment immediately prior to movement. If a California tiger salamander is discovered, work must stop immediately, and the DB and/or Biological Monitor must be notified.
    c. Excavation and Spoils Inspection: All ruts, holes, and trenches shall be inspected by the DB and/or Biological Monitor prior to and during excavation or backfill activities.
    d. Stored Materials: Any pipes, structures, or containers (including battery storage containers) with a diameter or opening of 2 inches or greater that are stored overnight in the project site must be securely capped before storage. See also, **BIO-7**, Item 5.
2. Open Excavations. To prevent inadvertent entrapment of California tiger salamander during construction, the DB and/or Biological Monitor shall implement the following measures for all open excavations (including open holes and trenches more than 6 inches deep):
    a. Daily Morning inspections: All open excavations shall be thoroughly inspected for trapped animals each day no later than 9:00 a.m.
    b. Inspections During Workday: Before any open trenches or holes are filled, the DB and/or Biological Monitor shall thoroughly inspect them.
    c. Daily Securing of Excavations: At the close of each working day, all open excavations shall be secured by providing one or more escape ramps constructed of earthen fill or wooden planks with a slope of 3:1 or less; or covering the excavations with boards or metal plates placed flush to the ground, with the edges overlaid by loose dirt to ensure no

gaps remain for species entry. If any open holes, trenches or other excavations greater than 6-inches deep cannot be covered or fitted with escape ramps as described above, then temporary exclusion fence shall be installed around these trenches, holes, or other excavations to prevent California tiger salamander from becoming trapped.

3. Relocations. The DB shall relocate any California tiger salamander found within the project site to an active rodent burrow system located no more than 300 feet outside of the project site unless otherwise approved by the CPM in writing. The DB shall document both the capture and relocation areas by photographs and GPS positions. The California tiger salamander shall be photographed and measured in millimeters (snout-vent) for identification purposes prior to relocation. All documentation shall be provided to the CPM within 24 hours of relocation.

4. Relocation Plan. The DB shall prepare a California Tiger Salamander Relocation Plan (Plan). The Plan shall include, but not be limited to, an identification of the survey and hand excavation, capture, handling, and relocation methods, and identification of where the individuals would be relocated to. Relocation areas shall be identified by the DB based upon best suitable habitat available and time of year and approved by the CPM prior to the start of site mobilization. The Relocation Plan shall be submitted to the CPM for approval prior to the beginning of project activities. Project activities anywhere within the project site may not proceed until the Relocation Plan is approved in writing by the CPM. Only the approved DB is authorized to capture and handle California tiger salamander.

5. Handling and Injury. California tiger salamander shall be handled and assessed according to the Restraint and Handling of Live Amphibians USGS, National Wildlife Health Center (D. Earl Greene, ARMI SOP NO. 100; 16 February 2001) or most recent guidance. If an injured California tiger salamander is found, the individual shall be evaluated by the DB who shall then immediately contact the CPM, and the CDFW Regional Representative, via email and telephone, to discuss the next steps. If the CPM or the CDFW Regional Representative cannot be contacted immediately, the injured California tiger salamander shall be placed in a shaded container and kept moist. If the CPM or CDFW Regional Representative is not available or has not responded within 15 minutes of initial attempts, then the following steps shall be taken by the DB:

    a. If the injury is minor or healing and the California tiger salamander is likely to survive, the salamander shall be released immediately in accordance with Item 3.

    b. If it is determined that the California tiger salamander has major or serious injuries as a result of project-related activities, the DB shall immediately take it to the Lindsay Wildlife Experience or another CDFW-approved facility.

c. If taken into captivity, the individual shall remain in captivity and not be released into the wild unless it has been kept in quarantine and the release is authorized by the CPM, CDFW and U.S. Fish and Wildlife Service.

d. The project owner shall bear any costs associated with the care or treatment of such injured California tiger salamander. The project owner shall document the circumstances of the injury, the procedure followed, and the final disposition of the injured animal in a written incident report as described in Item 3.

6. California Tiger Salamander Salvage. If a California tiger salamander is found recently deceased, a ½-inch portion of the tail tip shall be removed and placed in a labeled tissue tube with 95 percent ethanol. The remaining carcass, if salvageable, shall be immediately bagged, labeled, and preserved in a freezer. The label shall include a unique identifier (collection number), species name, time and date of collection, collection location, GPS location (including datum and horizontal error in feet), circumstances surrounding death (if known), collector name and contact information (phone number or email), and project tracking number. Tail specimens shall be delivered to (or current contact at CDFW):

   CDFW Bay Delta Region
   Attention: Brenda Blinn
   2825 Cordelia Road, Suite 100
   Fairfield, CA 94534

   The remaining carcasses shall be delivered to the following address within two calendar days of the discovery:

   CDFW Wildlife Investigations Lab
   Attention: Deana Clifford
   1701 Nimbus Road, Suite D
   Rancho Cordova, CA 95670

7. Temporary Exclusion Fencing. Prior to commencing activities, the project owner shall install temporary exclusion fencing according to the approved Temporary Exclusion Fence Plan (Item 8) to prevent California tiger salamanders from dispersing into the project site. Within each project phase, the project owner shall ensure that temporary exclusion fencing is installed around the footprint of all planned vegetation- and ground-disturbing activities, including but not limited to disking and seeding involved with restoration. The project owner shall ensure that exclusion fencing remains in place until project owner has completed the related vegetation- and/or ground-disturbing activities and removed related equipment from that footprint. The project owner shall remove temporary exclusion fencing at the culmination of related activities. To limit barriers to California tiger salamander movement imposed by temporary exclusion fencing, exclusion fencing

may be installed and removed in stages (enclosed subsets of fencing) as vegetation- and ground-disturbing activities progress across the project site.

8. Temporary Exclusion Fence Plan for California Tiger Salamander. The project owner shall submit to the CPM a Temporary Exclusion Fence Plan (Fence Plan) for review and approval prior to the start of activities. The Fence Plan shall describe the location and design of the temporary exclusion fencing and refugia, and survey method to inspect refugia. The project owner shall design temporary exclusion fencing to allow California tiger salamanders to leave the project site through one-way funnels or another method approved by the CPM. The project owner shall provide refuge opportunities such as coverboards (2-foot x 3- foot or larger plywood) or pitfall traps along both sides of the exclusion fence. If the project owner chooses to use pitfall traps, these shall be placed on the interior of the fence only and coverboards shall be placed on the exterior of the fence. The DB shall inspect the temporary exclusion fencing for damage each day. The DB and/or Biological Monitor shall inspect under cover boards for California tiger salamander by 8:00 AM during and after rain events.

   The DB shall relocate animals found within the interior fence or in refugia along the fence to a pre-determined location outside the fence line no more than 300 feet from the project boundary per the Relocation Plan described in Item 4. The project owner shall maintain and repair the temporary exclusion fencing immediately to ensure that it is functional and without defects. If initial site grading and restoration of temporary impacts is not completed in the project site by October 31, then temporary exclusion fencing shall be installed between any ungraded and graded portions of the planned grading footprint. Temporary exclusion fencing in place between November 1 and April 30 shall be considered a semi-permanent impact because it may impede potential California tiger salamander movement to breeding ponds. If temporary exclusion fencing is in place between November 1 and April 30, the project owner shall adjust impacts assessment in consultation with the CPM.

   If work is approved by the CPM outside of the dry season work window required in Item 11, the following shall apply: Any work site located within 2,000 feet of potential California tiger salamander breeding habitat, including where equipment would be stored overnight, shall be completely fenced with wildlife exclusion fencing. All construction work shall take place within the fenced area. Installation of exclusion fencing does not apply to graveled or well- traveled roads.

9. Barriers to Movement. As part of infrastructure construction, the project owner shall not install curbs or other barriers to California tiger salamander movement, if feasible.

10. Roads. The project owner shall construct roadways such that there are no steep curbs, berms, straw wattles, or dikes that could prevent California tiger

salamander from crossing or exiting the roadway. If curbs, berms, and/or straw wattles are necessary for safety and/or surface runoff, the project owner shall design and construct them to allow California tiger salamander to walk over them. If steep dikes are required, the project owner shall design and construct them to include over-side drains or curb/dike breaks spaced at intervals of 16.4 to 32.8 feet to allow California tiger salamander passage.

11. Detention Basin. The project owner shall install a permanent barrier to minimize potential for California tiger salamander movement into the detention basins. The project owner shall submit a Detention Basin Permanent Barrier Plan to the CPM for review and approval prior to the start of activities.

12. Dry Season Work Restriction. During the Dry Season of May 1 to October 31 of each year, the project owner shall limit activities involving ground disturbance and heavy equipment use (including but not limited to excavation, grading, contouring, or disking) to periods of low rainfall (less than 0.10 inches per 24-hour period). If rain exceeds 0.10 inches during a 24-hour period, work shall cease. Construction may resume 24 hours after the rain ceases when there is a less than 40 percent chance of precipitation in the National Weather Service 24-hour forecast for the project area, and humidity, as measured locally on-site under the supervision of the DB, has fallen below 75 percent. Both rainfall and humidity records shall be kept on-site and subject to inspection.

13. Seasonal Work Window. The project owner shall limit ground-disturbing activities involving heavy equipment use (such as excavation, road construction and repair, grading and trenching) to May 1 to October 31 (Dry Season), except as otherwise authorized in Item 14.

14. Seasonal Work Window Extension. Activities involving ground disturbing and heavy equipment use (including but not limited to excavation, grading, contouring, and disking) during November 1 to April 30 (Wet Season) shall be subject to written approval of the CPM. The project owner shall submit request for extension to the CPM at least 14 days prior to the desired Wet Season start date of activities. If the CPM approves Wet Season work, the project owner shall monitor the National Weather Service 48-hour hourly forecast for the project area and shall ensure that activities involving ground-disturbing activities and heavy equipment cease 24 hours prior to a 40-percent or greater forecast of precipitation. Activities may resume 24 hours after the precipitation ceases if there is less than a 40 percent chance of precipitation in the 24-hour forecast for the project area. If the CPM approves wet-season work, the DB shall survey the project area each day precipitation is forecast and the morning after all precipitation events.

    If work during the wet season delays restoration of temporarily disturbed areas past December 31 of the year of impact, the project owner shall recategorize these areas as semi-permanent or permanent impacts

depending on the timing of restoration and achievement of performance standards. In this circumstance, the project owner shall adjust impacts assessment in consultation with the CPM.

15. Daily Work Window. The project owner shall terminate all activities 30 minutes before sunset and shall not resume activities until 30 minutes after sunrise during California tiger salamander migration/active season from November 1 to June 15. The project owner shall use sunrise and sunset times established by the U.S. Naval Observatory Astronomical Applications Department for the geographic area where the project is located to determine when activities shall terminate and resume.
16. Nighttime Activities and Artificial Lighting. If nighttime work cannot be avoided, the project owner shall obtain written approval from the CPM prior to working during non-daylight hours at least 24 hours prior to proposed nighttime activities. The project owner's written request to the CPM to perform nighttime work shall outline the extent of activities and minimization measures specific to the request (monitoring, surveys, etc.). The project owner shall ensure that nighttime work is limited in extent, duration, and brightness to the minimal amount necessary to complete the approved nighttime work. Except when necessary for emergency work, the project owner shall ensure that no earthmoving activities or overland travel take place during nighttime work. Except when necessary for emergency work or driver/pedestrian safety, the project owner shall minimize artificial lighting in the project site during nighttime hours to the minimal amount necessary to complete the approved nighttime work. The project owner shall ensure that lighting shall be faced downward and shall only be utilized in the immediate workspace. All nighttime work shall be suspended during rain events.
17. Notification of Non-Native Tiger Salamanders or Hybrids. The DB shall immediately notify the CPM and CDFW if a non-native tiger salamander (tiger salamander, *Ambystoma tigrinum*; barred tiger salamander, *A. mavortium*; or plateau tiger salamander, *A. velasci*) or California tiger salamander hybrid is found or suspected within the project site within 24 hours by calling the CPM and CDFW's Regional Representatives. The DB shall not release any non-native or hybrid salamanders back to the wild until directed to do so by the CPM in coordination with the CDFW. The DB shall follow the Covered Species Handling and Injury measures, as described in Item 5.

Verification: The project owner shall submit a California Tiger Salamander Relocation Plan to the CPM for review and approval 30 days prior to the start of site mobilization activities. The project owner shall submit to the CPM for review and approval a Temporary Exclusion Fence Plan no less than 15 days prior to the start of site mobilization activities. The project owner shall submit a Detention Basin Permanent Barrier Plan to the CPM for review and approval no later than 15 days prior to the start of site mobilization activities.

BIO-12 California Red-Legged Frog Measures for Take The project owner shall implement the following measures to avoid, minimize and offset impacts to breeding and foraging California red-legged frogs during site mobilization, construction, and operation:

1. The DB and/or Biological Monitor(s) shall conduct pre-construction surveys for California red-legged frogs. Surveys shall be conducted by qualified biologists approved by the CPM, in coordination with CDFW, pursuant to **BIO-1** and/or **BIO-3**. These measures shall be included in the BRMIMP and implemented. Pre-construction surveys for California red-legged frogs shall be conducted within a 500-foot radius of all project disturbance areas, where legal access is granted, to detect individuals and suitable habitat features. Habitat features include both aquatic habitat such as plunge pools and ponds and terrestrial habitat such as burrows. Surveys shall be conducted no more than 14 days prior to the start of project activities include one survey conducted within 48 hours of site mobilization. Surveys shall include diurnal and nocturnal surveys. The project owner may elect to conduct additional surveys to map and detect potential areas this species may occur on or near disturbance areas.

   The results of the habitat feature assessment shall be submitted to the CPM for written acceptance prior to starting project activities. Habitat features shall be flagged for avoidance to the extent feasible.

2. <u>If Detected</u>. If a California red-legged frog is encountered or the DB believes that California red-legged frog is likely to occur in the project area, the project owner shall notify the CPM immediately. If California red-legged frogs are encountered during the assessment or during project activities, all work shall cease until the frog is moved out of the construction area, following the requirements in the Relocation Plan, to a USFWS/CDFW approved relocation site and the CPM shall be notified immediately.

3. <u>Relocation Plan</u>. The project owner shall prepare a California Red-legged Frog Relocation Plan that includes all the conservation measures outlined in the Formal Consultation on the Potentia Viridi Battery Storage System Project, Alameda County, California (Corps File Number: SPK-2024-00486) (TN264538). The Plan shall include, but not be limited to, an identification of the survey and hand excavation, capture, handling, and relocation methods, and identification of where the individuals would be relocated to. Relocation areas shall be identified by the DB based upon best suitable habitat available and time of year and approved by the CPM and USFWS prior to the start of site mobilization. The Relocation Plan shall be submitted to the CPM and USFWS for approval at least 30 days and no less than 14 days prior to the beginning of project activities. Project activities anywhere within the project site may not proceed until the Relocation Plan is approved in writing by the CPM. Only the approved DB is authorized to capture and handle California red-legged frogs.

4. Inspections. The following inspections shall be implemented to prevent injury or mortality of California red-legged frogs during ground-disturbing or other construction activities:

    a. Daily Morning Inspections: Before the start of work each morning, the DB and/or Biological Monitor shall inspect all vehicles, heavy equipment, materials, and other suitable hiding locations within the project site, per **BIO-2**, Item 7.

    b. Equipment Moving: All workers shall inspect beneath vehicles and equipment immediately prior to movement. If a California red-legged frog is discovered, work must stop immediately, and the DB and/or Biological Monitor must be notified.

    c. Excavation and Spoils Inspection: All ruts, holes, and trenches shall be inspected by the DB and/or Biological Monitor prior to and during excavation or backfill activities.

    d. Stored Materials: Any pipes, structures, or containers (including battery storage containers) with a diameter or opening of 2 inches or greater that are stored overnight in the project site must be securely capped before storage. See also, **BIO-7**, Item 5.

5. Open Excavations. To prevent inadvertent entrapment of California red-legged frogs during construction, the DB and/or Biological Monitor shall implement the following measures for all open excavations (including open holes and trenches more than 6 inches deep):

    a. Daily Morning inspections: All open excavations shall be thoroughly inspected for trapped animals each day no later than 9:00 a.m.

    b. Inspections During Workday: Before any open trenches or holes are filled, the DB and/or Biological Monitor shall thoroughly inspect them.

    c. Daily Securing of Excavations: At the close of each working day, all open excavations shall be secured by providing one or more escape ramps constructed of earthen fill or wooden planks with a slope of 3:1 or less; or covering the excavations with boards or metal plates placed flush to the ground, with the edges overlaid by loose dirt to ensure no gaps remain for species entry. If any open holes, trenches or other excavations greater than 6-inches deep cannot be covered or fitted with escape ramps as described above, then temporary exclusion fence shall be installed around these trenches, holes, or other excavations to prevent California red-legged frogs from becoming trapped.

6. Relocations. Pursuant to the approved Recovery Plan in Item 3, the DB shall relocate any California red-legged frogs found within the project site to an active rodent burrow system located no more than 300 feet outside of the project site unless otherwise approved by the CPM and USFWS in writing. The DB shall document both the capture and relocation areas by photographs

and GPS positions. The California red-legged frog shall be photographed for identification purposes prior to relocation. All documentation shall be provided to the CPM and USFWS within 24 hours of relocation.

7. Handling and Injury. California red-legged frogs shall be handled and assessed according to the Restraint and Handling of Live Amphibians USGS, National Wildlife Health Center (D. Earl Greene, ARMI SOP NO. 100; 16 February 2001) or most recent guidance. If an injured California red-legged frog is found, the individual shall be evaluated by the DB who shall then immediately contact the CPM, and the CDFW Regional Representative, via email and telephone, to discuss the next steps. If the CPM or the CDFW Regional Representative cannot be contacted immediately, the injured California red-legged frog shall be placed in a shaded container and kept moist. If the CPM or CDFW Regional Representative is not available or has not responded within 15 minutes of initial attempts, then the following steps shall be taken by the DB:

    a. If the injury is minor or healing and the California red-legged frog is likely to survive, the frog shall be released immediately in accordance with the California Red-legged Frog Relocation Plan.

    b. If it is determined that the California red-legged frog has major or serious injuries as a result of project-related activities, the DB shall immediately take it to the Lindsay Wildlife Experience or another CDFW-approved facility.

    c. If taken into captivity, the individual shall remain in captivity and not be released into the wild unless it has been kept in quarantine and the release is authorized by the CPM, CDFW and U.S. Fish and Wildlife Service.

    d. The project owner shall bear any costs associated with the care or treatment of such injured California red-legged frog. The project owner shall document the circumstances of the injury, the procedure followed, and the final disposition of the injured animal in a written incident report as described in Item 3.

8. California Red-legged Frog Salvage. If a California red-legged frog is found recently deceased, the carcass, if salvageable, shall be immediately bagged, labeled, and preserved in a freezer. The label shall include a unique identifier (collection number), species name, time and date of collection, collection location, GPS location (including datum and horizontal error in feet), circumstances surrounding death (if known), collector name and contact information (phone number or email), and project tracking number. The carcass(es) shall be delivered to the following address within two calendar days of the discovery:

Wildlife Investigations Lab
Attention: Deana Clifford
1701 Nimbus Road, Suite D
Rancho Cordova, CA 95670

9. Temporary Exclusion Fencing. Prior to commencing activities, the project owner shall install temporary exclusion fencing according to the approved Temporary Exclusion Fence Plan (Item 9) to prevent California red-legged frogs from dispersing into the project site. Within each project phase, the project owner shall ensure that temporary exclusion fencing is installed around the footprint of all planned vegetation- and ground-disturbing activities, including but not limited to disking and seeding involved with restoration. The project owner shall ensure that exclusion fencing remains in place until project owner has completed the related vegetation- and/or ground-disturbing activities and removed related equipment from that footprint. The project owner shall remove temporary exclusion fencing at the culmination of related activities. To limit barriers to California red-legged frogs movement imposed by temporary exclusion fencing, exclusion fencing may be installed and removed in stages (enclosed subsets of fencing) as vegetation- and ground-disturbing activities progress across the project site.

10. Temporary Exclusion Fence Plan for California Red-legged Frog. The project owner shall submit to the CPM a Temporary Exclusion Fence Plan (Fence Plan) for review and approval prior to the start of activities. The Fence Plan shall describe the location and design of the temporary exclusion fencing and refugia, and survey method to inspect refugia. The project owner shall design temporary exclusion fencing to allow California red-legged frogs to leave the project site through one-way funnels or another method approved by the CPM. The project owner shall provide refuge opportunities such as coverboards (2-foot x 3- foot or larger plywood) or pitfall traps along both sides of the exclusion fence. If the project owner chooses to use pitfall traps, these shall be placed on the interior of the fence only and coverboards shall be placed on the exterior of the fence. The DB shall inspect the temporary exclusion fencing for damage each day. The DB and/or Biological Monitor shall inspect under cover boards for California tiger salamander by 8:00 AM during and after rain events.

    The DB shall relocate animals found within the interior fence or in refugia along the fence to a pre-determined location outside the fence line no more than 300 feet from the project boundary per the Relocation Plan described in Items 3 and 5. The project owner shall maintain and repair the temporary exclusion fencing immediately to ensure that it is functional and without defects. If initial site grading and restoration of temporary impacts is not completed in the project site by October 31, then temporary exclusion fencing shall be installed between any ungraded and graded portions of the planned grading footprint. Temporary exclusion fencing in place between

November 1 and April 30 shall be considered a semi-permanent impact because it may impede potential California red-legged frog movement to breeding ponds or other aquatic habitat. If temporary exclusion fencing is in place between November 1 and April 30, the project owner shall adjust impacts assessment in consultation with the CPM.

Any work site located within 2,000 feet of potential California red-legged frog aestivation or dispersal habitat, including where equipment will be stored overnight, shall be completely fenced with wildlife exclusion fencing. All construction work shall take place within the fenced area. Installation of exclusion fencing does not apply to graveled or well- traveled roads.

11. Barriers to Movement. As part of infrastructure construction, the project owner shall not install curbs or other barriers that would impede California red-legged frog movement, if feasible.
12. Detention Basin. The project owner shall install a permanent barrier to minimize potential for California red-legged frog movement into the detention basins. The project owner shall submit a Detention Basin Permanent Barrier Plan to the CPM for review and approval prior to the start of activities.
13. Daily Work Window. The project owner shall terminate all activities 30 minutes before sunset and shall not resume activities until 30 minutes after sunrise until the exclusion fencing has been installed. The project owner shall use sunrise and sunset times established by the U.S. Naval Observatory Astronomical Applications Department for the geographic area where the project is located to determine when activities shall terminate and resume.
14. Nighttime Activities and Artificial Lighting. If nighttime work cannot be avoided, the project owner shall obtain written approval from the CPM prior to working during non-daylight hours at least 24 hours prior to proposed nighttime activities. The project owner's written request to the CPM to perform nighttime work shall outline the extent of activities and minimization measures specific to the request (monitoring, surveys, etc.). The project owner shall ensure that nighttime work is limited in extent, duration, and brightness to the minimal amount necessary to complete the approved nighttime work. Except when necessary for emergency work, the project owner shall ensure that no earthmoving activities or overland travel take place during nighttime work. Except when necessary for emergency work or driver/pedestrian safety, the project owner shall minimize artificial lighting in the project site during nighttime hours to the minimal amount necessary to complete the approved nighttime work. The project owner shall ensure that lighting shall be faced downward and shall only be utilized in the immediate workspace. All nighttime work shall be suspended during rain events.

Verification: The project owner shall submit a California Red-legged Frog Relocation Plan to the CPM for review and approval 30 days prior to the start of site

mobilization activities. The project owner shall submit to the CPM for review and approval a Temporary Exclusion Fence Plan no less than 15 days prior to the start of site mobilization activities. The project owner shall submit a Detention Basin Permanent Barrier Plan to the CPM for review and approval no later than 15 days prior to the start of site mobilization activities. The project owner shall submit the results of the California red-legged frog pre-construction surveys to the CPM for review and approval no later than 7 days after the survey has been completed.

BIO-13 Western Spadefoot If work will be conducted within or near western spadefoot breeding habitat (e.g. vernal pools, ephemeral rain pools, wetlands, and similar features) and would commence during breeding season (approximately February 1 through March 30), the DB and/or Biological Monitor shall complete a pre-construction survey within 48 hours prior to any site mobilization and/or construction activities. Surveys shall be conducted by qualified biologists approved by the CPM pursuant to **BIO-1** and/or **BIO-3**. The DB shall submit the results of the survey to the CPM prior to start of site mobilization and/or construction. These measures shall be included in the BRMIMP and implemented.

If western spadefoots are found within vernal pools or other wetland areas that cannot be avoided, the DB shall develop a relocation plan and submit it to the CPM for review and approval. Western spadefoots shall be relocated to the nearest available suitable habitat at least 250 feet away from the project site to minimize the potential for spreading disease. The DB shall secure all appropriate handling permits prior to relocating the species.

Verification: The project owner shall submit the results of the western spadefoot pre-construction survey to the CPM for review and approval no later than 7 days after the survey has been completed. In the event relocation is necessary, the project owner shall submit a relocation plan to the CPM for review and approval.

BIO-14 Western Pond Turtle Within 48 hours prior to initiation of site mobilization and/or construction, the DB and/or Biological Monitor shall survey the project site for western pond turtles and their nests. Surveys shall be conducted by qualified biologists approved by the CPM pursuant to **BIO-1** and/or **BIO-3**. If western pond turtles are found in the work area, work shall not commence until the DB contacts the CPM for approval. These measures shall be included in the BRMIMP and implemented.

If a nest is found, work within 50 feet of the nest shall be stopped and the DB and/or Biological Monitor shall prepare a nest protection plan, to be reviewed and approved by the CPM, in coordination with CDFW, to ensure the nest is protected until it is no longer active. Turtles may be moved "out of harm's way" to the nearest safe and suitable habitat at least 250 feet away from the project site by the DB and/or Biological Monitor with all appropriate permits.

Verification: The project owner shall submit the results of the pre-construction survey results to the CPM for review and approval within 7 days after the survey has been completed. If required, the project owner shall submit a draft nest protection plan to the CPM for review and approval and to CDFW for review and comment. A final nest protection plan shall be submitted prior to implementation.

BIO-15 Coast Horned Lizard and San Joaquin Coachwhip The DB and/or Biological Monitor shall survey the construction site for coast horned lizard and San Joaquin coachwhip, including any and all rock outcrops and mammal burrows and any other potential habitat features. Surveys shall be conducted by qualified biologists approved by the CPM pursuant to **BIO-1** and/or **BIO-3**. Surveys shall occur within 48 hours prior to site mobilization and/or construction. These measures shall be included in the BRMIMP and implemented.

If coast horned lizards and/or San Joaquin coachwhips are found, they shall be allowed to leave the site before construction begins. Coast horned lizards and/or San Joaquin coachwhips may be moved "out of harm's way" to the nearest safe and suitable habitat at least 250 feet away from the project site by the DB and/or Biological Monitor with appropriate scientific collecting permits.

Verification: The project owner shall submit the results of the pre-construction survey(s) to the CPM for review and approval within 7 days after the survey has been completed.

BIO-16 Nesting Birds and Bird Buffers The project owner shall develop and implement a Nesting Bird Management Plan (NBMP) in coordination with the DB and submit to the CPM for review and approval. The project owner shall submit the resumes of avian monitors under **BIO-1** and/or **BIO-3** prior to site mobilization and/or construction, if these activities are planned to occur during the breeding season. The NBMP shall describe methods to minimize potential project effects to nesting birds and avoid any potential for unauthorized take of special status birds without incidental take authorization. Where scheduling allows, the project owner shall clear or remove any vegetation, conduct site preparation in open or barren areas, or other project-related activities that may adversely affect breeding birds outside the nesting season. The NBMP would be applicable throughout the nesting season.

Pre-construction nest surveys shall be conducted during the breeding season for local and migratory birds and would be timed to account for seasonal variation that occurs in the project area (February to September for raptors and January 1 to August 31 for other species).

1. Survey Requirements. Surveys shall cover all potential nesting habitat and substrates within the project area and areas surrounding the project area within 500 feet of the project boundary for sensitive passerines (e.g. shrikes) and raptors and within 2-mile line of sight for eagles, unless otherwise

prohibited due to legal access or safety issues, upon approval from the CPM. The NBMP shall describe each of the survey methodologies proposed to ensure that common and special status birds (except for western burrowing owls addressed in COC **BIO-18**) that have the potential to occur in the project area are detected. Surveys shall be repeated during all phases of site mobilization through construction.

2. Survey Schedules. At least two pre-construction surveys shall be conducted, separated by a minimum 10-day interval. Pre-construction surveys shall be conducted no more than 14 days prior to initiation of construction activity. One survey needs to be conducted within the 3-day period preceding initiation of site mobilization, brush clearing, ground disturbance, or construction activity. Surveys shall be repeated throughout site mobilization and construction phases to ensure that birds are not nesting on equipment or have moved into an area after the initial vegetation clearance has been completed.
3. Nest and Avian Monitoring and Surveys During Construction. Additional follow-up surveys shall be required if periods of construction inactivity exceed three weeks during January 1 through September 30 in any given area, an interval during which birds may establish a nesting territory and initiate egg laying and incubation.
4. Nest Detection. If active nests are detected during surveys, a no-disturbance buffer zone (protected area surrounding the nest) shall be established around each nest. Fencing and/or flagging would be used to delineate the no-activity zone. To minimize the potential to affect the reproductive success of the nesting pair, the extent of the no-activity zone shall be based several factors, including the distance of the activity to the nest, the type and extent of the proposed activity, the duration and timing of the activity, the sensitivity and habituation of the species, and the dissimilarity of the proposed activity to background activities. The no-activities zone shall be large enough to avoid nest abandonment. Specific buffers shall also be proposed for any shrike caches should they be detected during construction.

   The NBMP shall define species-specific or guild-specific default buffers to be applied if an active nest is encountered. These buffer distances shall be reviewed and approved by the CPM, in consultation with CDFW. The default buffers may be modified in the NBMP, with CPM approval. For special-status species, if an active nest is identified, the size of each buffer zone shall be determined by the DB in consultation with the CPM (or as described in conditions of certification specific for those species). Nest locations shall be mapped using GPS technology.

   The plan shall include a table outlining default buffer distances for specific avian groups during construction, detailing the avian groups, species potentially nesting within the project limits and survey area, and corresponding

horizontal buffer distances based on disturbance level (DL) in feet, unless alternative table format is approved by the CPM. Typical default buffer distances are 500 feet for most raptors and 250 feet for most passerines, as well as other species or guild-specific buffers.

Nest buffers shall be delineated using the following process:

a. Upon discovery of an active nest the default buffer identified in the NBMP shall be applied.

b. The DB(s) and/or Biological Monitor(s) with avian experience may adjust the buffer based on nest location characteristics (e.g. natural barriers), type and extent of project disturbance, and observed bird behavior. The nest buffer would be sufficiently large to avoid disturbance to the nesting birds and based on the default buffers included in the approved NBMP.

c. Nest buffer reductions for special status species shall be requested in writing via email to the CPM for review and approval.

5. Active Nest Protection. If active nests are detected during the survey, the DB(s) or Biological Monitor(s) shall monitor all nests with buffers at least once per week, to determine whether birds are being disturbed. If signs of disturbance or distress are observed, the DB(s) or Biological Monitor(s) shall immediately implement adaptive measures to reduce disturbance, in coordination with the CPM. These measures could include, but are not limited to, increasing buffer size, halting disruptive construction activities in the vicinity of the nest until fledging is confirmed, or placement of visual screens or sound dampening structures between the nest and construction activity. The DB(s) or Biological Monitor(s) shall monitor the nest until it is determined that nestlings have fledged and dispersed or the nest is no longer active. Activities that might, in the opinion of the DB(s) or Biological Monitor, disturb nesting activities (e.g., exposure to exhaust), shall be prohibited within the buffer zone until such a determination is made. Any nest buffer reduction would require full time monitoring if reduced from the levels identified in the approved NBMP.

6. NBMP Content. The NBMP shall include:

a. definitions of default nest avoidance buffers for each species or group of species, depending on characteristics and conservation status for each species and the nature of planned project activities in the vicinity;

b. a notification procedure for buffer distance reductions should they become necessary;

c. a pre-construction survey protocol (surveys no longer than 3 days prior to starting work activity at any site);

d. a monitoring protocol, to be implemented until adjacent construction activities are completed or the nest is no longer active, including qualifications of monitors, monitoring schedule, and field methods, to ensure that any project-related effects to nesting birds shall be minimized;

e. a protocol for documenting and reporting any inadvertent contact with or effects to birds or nests;

f. Specify the responsibilities of construction workers and site personnel with regard to nests and nest issues and specify a direct communication protocol to the Biological Monitor and/or DB;

g. Specify a procedure to be implemented following accidental disturbance of nests, including wildlife rehabilitation options; and

h. Specify a procedure for removal of inactive nests, including verification that the nest is inactive and a notification/approval process.

The NBMP would be applicable throughout the nesting season (from January 1 through September 30).

7. Nest deterrents. The NBMP shall describe any proposed measures or deterrents to prevent or reduce bird nesting activity on project equipment or facilities, such as buoys, visual or auditory hazing devices, bird repellents, securing of materials, and netting of materials, vehicles, and equipment.

   It shall also include timing for installation of nest deterrents and field confirmation to prevent effects to any active nest; guidance for the contractor to install, maintain, and remove nest deterrents according to product specifications; and periodic monitoring of nest deterrents to ensure proper installation and functioning and prevent injury or entrapment of birds or other animals.

   If an active nest is located on project facilities, materials or equipment, the project owner shall avoid disturbance or use of the facilities, materials or equipment (e.g., by red-tag) until the nest is no longer active.

8. Nest Start Removal. Prior to removing any suitable nesting habitat, preconstruction nesting bird surveys should inform as to where existing raptor nests, and other special status bird nests, occur throughout the project area. The locations of existing special status bird nests within the habitat removal footprint shall be recorded and mapped by a qualified biologist. Such nests shall be removed outside of the nesting bird season.

   Due to the potential for nest building during active construction, a biological monitor shall be employed for the duration of project construction to regularly inspect for nest building attempts that may occur on/within

construction equipment and/or within an area of active construction disturbance.

In the event nest building is detected, the biologist shall deter birds from nesting using non-invasive methods to modify the circumstances. In the event a nest is built, and eggs are laid, the nest shall be considered active nest and shall be avoided. This may include placing a buffer around a piece of equipment or closing off a work area until the nest has fledged. This measure shall not be employed for state or federal special status species.

9. Accidental Nest Disturbance. The NBMP shall specify a procedure to be implemented following accidental disturbance of nests, including wildlife rehabilitation options. It also shall describe any proposed measures, and applicable circumstances, to prevent take of precocial young of ground-nesting birds such as killdeer or quail. The project owner shall identify an appropriate wildlife care facility before starting site mobilization. The location of the care facility shall be provided to the CPM prior to site mobilization. The project owner shall bear any costs associated with the care or treatment of project related injured birds. The project owner shall provide a letter report detailing the outcome of the care to the CPM.
10. Reporting. Throughout the construction phase of the project, nest locations, project activities in the vicinity of nests (including helicopter traces), and any adjustments to buffer areas shall be updated and available to the CPM, weekly or other CPM-approved timeframe. All buffer reduction notifications and prompt notifications of nest-related non-compliance and corrective actions will be made via email to the CPM.

    The draft NBMP shall include a proposed format for regular reporting (e.g., spreadsheet available online, tracking each nest). In addition, the NBMP shall specify the format and content of nest data to be provided in regular monitoring and compliance reports. At the end of each year's nest season, the project owner shall submit an annual NBMP report to the CPM and CDFW. Specific contents and format of the annual report would be reviewed and approved by the CPM in consultation with CDFW.

Verification: The project owner shall prepare and implement an NBMP in coordination with the DB and submit to the CPM for review and approval no less than 45 days prior to site mobilization. At the end of each year's nest season, the project owner shall submit an annual NBMP report to the CPM and CDFW no more than 30 days after the end of the nesting season. The project owner shall submit pre-construction survey reports to the CPM and CDFW no more than 30 days after each survey effort has been completed. The project owner shall provide a letter report detailing the outcome of the care of any injured birds or nest failures to the CPM and the CDFW within 14 days of the incident.

BIO-17 Golden Eagle and Nest Protection Buffers If project activities will occur during the golden eagle nesting season (December 15 to August 31), the DB and/or Biological Monitor shall conduct pre-construction surveys no more than 30 days prior to days prior to the start of any site mobilization, construction, or other ground-disturbing activities, including heavy equipment use and staging. The survey(s) shall include a sufficient area, but no less than 1-mile from activities, to identify any golden eagle that are present and determine their status. 'Sufficient' in the context of this condition means covering all areas in which nests could potentially be affected by the project activities.

Surveys shall be conducted by qualified biologists approved by the CPM pursuant to **BIO-1** and/or **BIO-3**. The DB shall submit protocol-level survey methodologies to the CPM for review and approval prior to the start of surveys. These measures shall be included in the BRMIMP and implemented.

The DB and/or Biological Monitor shall report any coordination with USFWS and active golden eagle nests to the CPM representative within 24 hours. It is recommended that the DB coordinates with the USFWS to coordinate implementation of golden eagle monitoring protocol so as to minimize duplicate efforts by others in the area.

1. Nest Protection Buffer. The qualified biologist shall monitor any identified active golden eagle nests for the first two days prior to any construction activities to establish a behavioral baseline of the adults and any nestlings. In addition to direct impacts, such as nest destruction, nesting birds might be affected by noise, vibration, odors and movement of workers or equipment. The DB and/or Biological Monitor shall establish appropriate nest protection buffers of at least 1-mile for golden eagle during site mobilization and construction-related activities. The DB and/or Biological Monitor may expand or reduce the buffer, with the CPM's approval in coordination with the CDFW and USFWS, based on specific site conditions, or in instances there is sufficient topographic relief to protect the nest(s) from excessive noise or visual disturbance between the activities and the active nest(s). Depending on site characteristics, the sensitivity of the nest, and surrounding land uses, the DB and/or Biological Monitor may increase the buffer zone to prevent disturbance at the active nest site from maintenance and repair-related activities.
2. Monitoring. If active nests are detected, the DB(s) or Biological Monitor(s) shall monitor the nest at all times during any mobilization, ground disturbing, construction, or other activity that disturb the nest. If signs of disturbance or distress are observed, the DB(s) or Biological Monitor(s) shall immediately implement adaptive measures to reduce disturbance, in coordination with the CPM. These measures could include, but are not limited to, increasing buffer size, halting disruptive construction activities in the vicinity of the nest until fledging is confirmed, or placement of visual screens or sound dampening structures between the nest and construction activity. The DB(s) or Biological

Monitor(s) shall monitor the nest until it is determined that nestlings have fledged and dispersed or the nest is no longer active. Activities that might, in the opinion of the DB(s) or Biological Monitor, disturb nesting activities, shall be prohibited within the buffer zone until such a determination is made. If the DB(s) or Biological Monitor(s) determines that the nest is still at risk, the DB(s) or Biological Monitor(s) shall notify the CPM and a meeting with the project owner and the CPM shall be held to determine the best course of action to avoid nest abandonment or take of individual Birds.

Verification: The project owner shall submit protocol-level survey methodologies to the CPM for review and approval at least 30 days prior to the start of surveys. The project owner shall submit pre-construction survey reports to the CPM no more than 30 days after the survey has been completed. The DB and/or Biological Monitor shall report any coordination with USFWS or CDFW regarding active golden eagle nests to the CPM within 24 hours.

BIO-18 Burrowing Owl Impact Avoidance, Minimization, and Mitigation Measures for Take The project owner shall implement the following measures to avoid, minimize and offset impacts to breeding and foraging burrowing owls during site mobilization, construction, operation, and decommissioning:

1. Burrowing Owl Mortality Reduction Plan. The project owner shall submit a Burrowing Owl Mortality Reduction Plan prepared the DB(s) for review and approval to the CPM, and CDFW for review and comment, prior to beginning any project activities including site mobilization, surveying, fencing, or ground disturbance. Burrow exclusion, burrow excavation, monitoring, reducing predator subsidies, artificial burrow construction, and other relocation activities shall not proceed until this plan has been approved in writing by the CPM in coordination with the CDFW.

   The Burrowing Owl Mortality Reduction Plan shall include, but not be limited to detailed description of survey methodology; detailed burrow exclusion and excavation methods; project activities that may be performed within burrowing owl avoidance buffers; identification of a wildlife rehabilitation center or veterinary facility capable of and willing to treat injured burrowing owl or care for at-risk burrowing owl, burrowing owl eggs, and/or burrowing owl chicks; and procedure for collection and storage of burrowing owl carcasses. Only CPM approved DB(s), or personnel following directions from and under the supervision of the DB(s), are authorized to handle and transport injured burrowing owl for treatment or impacted burrowing owl eggs for salvage. All other burrowing owl handling is prohibited.

   Once the Burrowing Owl Mortality Reduction Plan is approved in writing by the CPM, it shall be used for the duration of the project unless updated by request of the CPM to reflect best available science, or to update mitigation and conservation strategies. If any updates are required, the CPM would

contact the project owner to discuss potential updates. Any proposed changes to the Burrowing Owl Mortality Reduction Plan shall be submitted, in writing, to the CPM for review and approval and the CDFW for review and comment in writing prior to the implementation of any proposed modifications.

2. Burrowing Owl Burrow Replacement Plan. The project owner shall replace each known burrowing owl burrow (as defined below under Burrow Avoidance) that cannot be avoided within the project site with an artificial burrow to compensate for the loss of important shelter used by burrowing owls for protection, reproduction, and escape from predators. The project owner shall submit a Burrowing Owl Burrow Replacement Plan prepared by an approved DB(s) to the CPM. The artificial burrows shall be placed within 328 feet of displaced burrows to facilitate detection by displaced owls. Implementation of the Burrowing Owl Burrow Replacement Plan shall not proceed until this plan has been approved in writing by the CPM in coordination with the CDFW. The Burrowing Owl Burrow Replacement Plan shall include, but not be limited to: a discussion and map of potential artificial burrow replacement locations; description of the replacement burrow design and dimensions (e.g., depth and width of burrow, width of burrow entrance, orientation of burrow entrance, number and placement of entrances to natal burrows); artificial burrow installation methods; long-term artificial burrow protection and maintenance methods; and timing of burrowing owl burrow installation/construction.

   Once the burrowing owl Burrow Replacement Plan is approved in writing by the CPM, it shall be used for the duration of the project unless it is updated by the CPM to reflect best available science, or to update mitigation and conservation strategies in which case the CPM would contact the project owner to discuss needed updates. If any updates are required, the CPM would contact the project owner to discuss potential updates. Any proposed changes to the Burrowing Owl Mortality Reduction Plan shall be submitted, in writing, to the CPM for review and approval and the CDFW for review and concurrence in writing prior to the implementation of any proposed modifications.

3. Burrowing Owl Pre-Construction Nesting Surveys and Reporting. The DB and/or Biological Monitor shall conduct preconstruction surveys for burrowing owls if project activities will occur during the nesting season (February 1 through August 31), no more than thirty (30) days prior. These surveys would identify potential, known, and/or nesting burrowing owl burrows. A potential burrowing owl burrow is any subterranean hole three inches or larger for which no evidence is present to conclude that the burrow is being used or any past use by a burrowing owl; a known burrowing owl burrow is a burrow that shows evidence the burrow is being used, known to have been used, or past use by a burrowing owl, or an "atypical" burrow (e.g., a pipe,

culvert, buckled concrete, etc.) showing signs of occupancy (e.g. burrowing owl presence, whitewash, pellets, prey remains, etc.); and a nesting burrowing owl burrow is used for nesting (e.g. known burrowing owl burrow indications of the presence of eggs, chicks, dependent young, and/or brooding or egg incubation. The survey area shall include the project disturbance area and surrounding 1,600-feet survey buffer, as accessible.

If surveys detect burrowing owls within 1,600 feet of proposed construction activities, the DB shall provide to the CPM documentation indicating that non-disturbance buffer fencing has been installed no less than 10 days prior to the start of any project-related site disturbance activities. The documentation shall include information as specified in Items 4 and 5, or as otherwise requested by the CPM.

4. Avoidance Surveys. No more than 14 days prior to beginning construction-related activities, the DB shall conduct at least two surveys using the methods described in the CDFW Staff Report on Burrowing Owl Mitigation, Appendix D (2012) or other appropriate method if agreed upon in writing by the CPM, at least seven days apart, with the final survey conducted no more than 48 hours prior to beginning construction. Pre-construction surveys may be conducted as part of the surveys identified above. The DB shall submit the results of the survey to the CPM within 24 hours prior to beginning construction. If changes in burrowing owl presence are detected (e.g., burrowing owls have moved onsite or changed burrow use), the DB shall contact the CPM by phone or email within 24 hours of the observation to consult on appropriate measures to avoid or minimize impacts of the project to the burrowing owl. If a lapse in project-related work of 14 calendar days or longer occurs, the project owner shall contact the CPM and may be required to conduct additional surveys before work may be reinitiated.

5. Burrow Map. The DB(s) shall provide a Keyhole Markup Language (KMZ) map and Geographic Information Systems (GIS) shapefiles to the CPM of all burrowing owl burrows found during the surveys conducted during the surveys required under Item 3 requirements (Burrowing Owl Pre-Construction Surveys and Reporting). The map shall show the details and locations of all burrowing owl sightings and potential, known, and nesting burrowing owl burrows as defined in the Burrowing Owl Burrow Avoidance section. The map shall include an outline of the project site, and any distinct work area(s) surveyed within the project site, title, north arrow, scale bar, and legend. The burrow map shall be updated when additional occupied burrows are observed and maps shall be included in the following monthly reports.

   If a territory or nest is confirmed during the surveys the project owner shall notify the CPM and CDFW within 48 hours. In coordination with the DB(s), CPM and CDFW, a 1,600-foot line of sight disturbance-free buffer shall be

established and demarcated by fencing or flagging and placed on project maps. This buffer may be adjusted as determined by a qualified avian biologist in coordination with the CPM and CDFW. Nest locations shall be mapped using GPS technology and provided the CPM.

6. Burrowing Owl Burrow Avoidance. The DB shall establish no-disturbance buffer zones around potential, known and nesting burrowing owl burrows according to the following guidelines:

    a. If a potential burrowing owl burrow (any subterranean hole three inches or larger for which no evidence is present to conclude that the burrow is being used or any past use by a burrowing owl) is discovered, the DB shall establish a minimum 50-foot no-disturbance buffer around the burrow.

    b. If a known burrowing owl burrow (a burrow that is known to have been used or shows evidence of current or past use) or an "atypical" burrow (e.g., a pipe, culvert, buckled concrete, etc.) showing signs of occupancy (e.g. burrowing owl presence, whitewash, pellets, prey remains, etc.) is discovered, the DB(s) shall establish a minimum no-disturbance buffer of at least 100 feet around the burrow. A no-disturbance buffer of at least 656 feet shall be established around known burrowing owl burrows currently occupied by burrowing owl during the nesting season (typically February 1 to August 31 in this area). Nest buffer reductions are described below.

    c. If a nesting burrowing owl burrow (e.g. known burrowing owl burrow with indications of the presence of eggs, chicks, dependent young, and/or brooding or egg incubation) is discovered within or immediately adjacent to the project site, the project owner and/or DB shall notify the CPM and CDFW immediately through email. A no-disturbance buffer of at least 656 feet shall be established around the nest burrow. A no-disturbance buffer of at least 656 feet shall be established around known burrowing owl burrows currently occupied by burrowing owl during the nesting season (February 1 to August 31).

    d. If burrowing owl burrows cannot be avoided as described above, then the project owner shall follow Item 6 (Burrowing Owl Burrow Blockage), Item 7 (Burrowing Owl Burrow Excavation), and Item 1 (Burrowing Owl Mortality Reduction Plan), as appropriate. If the approved DB determines burrowing owl are visibly stressed by project activities or by workers in the vicinity after these no-disturbance buffers the DB shall immediately increase the non-disturbance buffer to a distance where the visible stress is no longer observed. The increased no-disturbance buffers would be reviewed and approved by the CPM, in coordination with CDFW, based on their behavioral observations of the affected burrowing owl.

The buffers prescribed above shall not be reduced or otherwise modified without prior written approval from the CPM, in coordination with the CDFW. If the approved DB(s) determines that specific project activities are not likely to affect the burrowing owl using known or nesting burrowing owl burrows due to the nature of the specific project activities, or due to objects or topography that might reduce potential noise disturbance and obstruct view of the project activities from the nest, then the CPM approved DB(s) may email a written request to the CPM to reduce the buffer distance with documented observational data (Buffer Reduction Request). The CPM will review each Buffer Reduction Request on a case-by-case basis and provide a determination in response to each Buffer Reduction Request in writing. The CPM may request additional and ongoing biological monitoring prior to approving a Buffer Reduction Request.

7. Burrowing Owl Burrow Blockage. If the CPM has approved the blockage of a known burrowing owl burrow, the DB shall block rather than destroy any unoccupied known burrowing owl burrow located within the buffer distances limits prescribed in Item 5 (Burrowing Owl Burrow Avoidance), but outside the discrete work area(s) within the project site where ground and vegetation disturbing project activities would be performed. Burrows (including burrows in natural substrate and in under man-made structures) may be blocked only immediately after the CPM-approved DB(s) has conducted four consecutive 24-hour periods of monitoring with infrared camera and determined that burrowing owl is not currently present. Burrow blockage shall be done in a manner that prevents burrowing animals from digging back into the burrow. All blocked burrows shall be monitored by the approved DB(s) and/or Biological Monitor(s) at least once every 48 hours while the blockage is in place to ensure that the exclusion material is still intact. If burrowing owl regains access to the burrow, the project owner or DB shall contact the CPM immediately and obtain written guidance regarding how to proceed. All blocked burrows shall be unblocked within 48 hours of completion of construction activities within the prescribed buffer distance.

8. Burrowing Owl Burrow Excavation. The approved DB(s), and/or Biological Monitor under direct supervision of the approved DB(s), shall excavate known or potential burrows that exhibit signs of current or past burrowing owl use or characteristics suggestive of a burrowing owl burrow (including burrows in natural substrate and in/under man-made structures) that cannot be avoided per guidance in Item 5 (Burrowing Owl Burrow Avoidance), that are within the project site. Burrows to be destroyed shall be fully excavated, filled with dirt, and compacted to ensure that burrowing owl cannot reenter or use the burrow during the period that project activities occur in the project site.

a. Excavation of known burrowing owl burrows shall only occur after the approved DB(s) has determined that burrowing owl is not currently present after 4 consecutive 24-hour periods of monitoring with infrared cameras. If the excavation process reveals evidence of current use by burrowing owl, then burrow excavation shall cease immediately, and camera monitoring as described above shall be conducted or resumed as applicable. Burrowing owl burrows shall be carefully excavated with hand tools, or by mechanical means if a specific methodology is approved in writing by the CPM, until it is clear no individuals of burrowing owl are inside.

b. Potential burrowing owl burrows without any signs of burrowing owl use or characteristics suggesting it is a burrowing owl burrow may be excavated under the direct supervision of the approved DB(s) without prior camera monitoring.

c. Nesting burrowing owl burrows used for nesting shall not be excavated until biological and camera monitoring confirm that the chicks have fledged and are no longer dependent on the nest and then only after written concurrence from the CPM. An established burrowing owl burrow no-disturbance buffer may be removed once the burrow is collapsed and the burrowing owl (s) is/are no longer using the burrow.

9. Burrowing Owl Injury or Mortality. If a burrowing owl is injured within the vicinity of the project site, project owner shall notify the CPM of the injury to the burrowing owl immediately. The DB(s) shall follow the Burrowing Owl Mortality Reduction Plan to either immediately transport injured individuals to a CPM-approved wildlife rehabilitation center or veterinary facility or follow approved collection and storage procedures for deceased animals. The project owner shall bear any cost associated with care and recovery of any injured burrowing owl adults, nestling(s) or egg(s) and hacking (controlled release of captive reared young).

   If a burrowing owl is found dead, project owner shall notify the CPM and the CDFW Regional Representative, Krysta Rogers (Krysta.Rogers@wildlife.ca.gov), or current CDFW contact, at the CDFW Wildlife Health Laboratory within 24 hours of the discovery. The DB shall collect the carcass and place it in a clean sealed, plastic bag with a specimen label, and temporarily store in a freezer. The DB shall obtain packing and transportation or shipping instructions from the Wildlife Health Laboratory, and deliver the specimen within 60 days of discovery to the address below:

   CDFW Wildlife Health Laboratory
   Avian Investigations
   Attention: Krysta Rogers
   1701 Nimbus Road, Suite D
   Rancho Cordova, CA 95670

The initial notification to the CPM shall include information regarding the location, species, number of animals taken or injured, and if injured, the facility to which the individual was transported. Following initial notification, the project owner shall send the CPM a written report within two calendar days. The report shall include the common and scientific name, date and time of the finding or incident, geo-referenced location of the animal or carcass (Project name, County, GPS location, and GPS datum), sex (if known), observer name and contact information, a photograph (if possible), explanation as to cause of take or injury, and any other pertinent information. The DB shall provide weekly updates on the status of the rehabilitation facility's treatment of the individual.

If nestling(s) or egg(s) are abandoned, the DB shall recover the nestling(s) and or egg(s) and immediately take it to a CDFW-approved wildlife rehabilitation or veterinary facility. The project owner shall bear any cost associated with care and recovery of any injured burrowing owl adults, nestling(s) or egg(s), and hacking (controlled release of captive reared young), and follow notification and reporting requirements described above.

10. Burrowing Owl Observations and Notification. All workers shall be trained to identify a burrowing owl and shall inform the approved DB(s) if a burrowing owl is seen within or near the project site during implementation of any project activity. All work in the vicinity of the burrowing owl which could harm the individual, shall cease until the individual moves from the project site of its own accord or the approved DB(s) passively encourages the individual to move out of harm's way, in compliance with the timing and methods identified in the CPM-approved Burrowing Owl Mortality Reduction Plan.
11. Operation Activities DB On-site. The approved DB(s) shall be onsite during all ground and vegetation disturbing activities. The approved DB(s) shall be on-site during all non-emergency ground and vegetation disturbing project activities performed at night.
12. Vehicle Parking (Site Mobilization, Construction and Operation). During site mobilization, construction, operation, and maintenance activities or while implementing burrowing owl take minimization measures, the project owner shall not allow vehicles to park on top of known or potential burrowing owl burrows. Vehicles left overnight shall not be located within 50 feet of known burrowing owl burrows. Workers shall inspect for burrowing owl under vehicles and equipment every time the vehicles and equipment are moved. If a burrowing owl is present, the worker shall wait for the burrowing owl to move unimpeded to a safe location. Alternatively, the approved DB(s) shall be contacted to passively encourage the burrowing owl to move away from the vehicle or equipment, in compliance with the timing and methods identified in the Burrowing Owl Mortality Reduction Plan.

13. Pipes and Materials Inspection (Site Mobilization, Construction, Operation). The project owner shall ensure that all pipes or similar materials stockpiled or replaced in the project site are capped or otherwise enclosed at the ends to prevent entry by burrowing owl. The project owner shall ensure that any permanent pipes or similar materials or structures are left open where burrowing owl or other species may enter them and become trapped. The approved DB shall thoroughly inspect all such materials for burrowing owl, before they are moved, buried, or capped. If a burrowing owl is discovered inside such material, that section of material shall not be moved until the animal has escaped of its own accord. Alternatively, the approved DB may passively encourage the burrowing owl. to move away from the pipes, culverts, or similar structures, in compliance with the timing and methods identified in the Burrowing Owl Mortality Reduction Plan.
14. Ground and Vegetation Disturbing (Site Mobilization, Construction, and Operation). Burrowing Owl Pre-Construction Surveys and Reporting (Item 3) shall be implemented within 30 calendar days prior to commencing ground or vegetation disturbing activities during operation in each distinct work area(s) within the project site. If the approved DB identifies any potential, known, or nesting burrowing owl burrows, the burrow(s) shall be monitored following the Burrowing Owl Burrow Blockage (Item 6) and Burrowing Owl Burrow Excavation (Item 7) as applicable, unless avoided per the Burrowing Owl Burrow Avoidance requirements (Item 5).
15. Burrowing Owl Observations (Operation). During operational activities within the project site, all workers shall inform the approved DB if a burrowing owl is observed within or near the project site. All work in the vicinity of the burrowing owl, which could injure or kill the animal, shall cease immediately until the burrowing owl moves from the project site of its own accord or the approved DB passively encourages the individual to move out of harm's way, in compliance with the timing and methods identified in the approved Burrowing Owl Mortality Reduction Plan.
16. Burrowing Owl Injury (Operation). If a burrowing owl is injured or found dead within the vicinity of the project site, the project owner shall notify the CPM of the injury or mortality to the burrowing owl immediately. The approved DB shall follow the approved Burrowing Owl Mortality Reduction Plan to either immediately transport injured individuals to a CDFW-approved wildlife rehabilitation center or veterinary facility or follow approved collection and storage procedures for deceased animals. The project owner shall bear any cost associated with care and recovery of any injured burrowing owl adults, nestling(s) or egg(s) and hacking (controlled release of captive reared young).

Verification: The DB shall provide the preconstruction survey results to the CPM within 14 days of the completion of the survey. If surveys detect burrowing owls within 1,600 feet of proposed construction activities, the DB shall provide the CPM

documentation indicating that a non-disturbance buffer has been installed no less than 10 days prior to the start of any project-related site disturbance activities. The documentation shall include information as specified in Items 4 and 5, or as otherwise requested by the CPM.

If pre-construction surveys detect burrowing owls or active burrowing owl burrows within the project disturbance area the project owner shall submit the Burrowing Owl Mortality Reduction Plan and Burrow Replacement Plan to the CPM for review and comment at least 30 days prior to initiation of site mobilization. Within 30 days of the conclusion of the construction period, the project owner shall submit a final Burrowing Owl Mitigation Implementation Report detailing location of all burrowing owl observed, take measures implemented, and their effectiveness.

During operations, the project owner shall include in the Annual Compliance Report an accounting of all burrowing owl documented on site, including copies of the DB and/or Biological Monitor's field notes, any buffer zones erected, maps, additional avoidance and minimization measures implemented, and their perceived effectiveness.

BIO-19 Swainson's Hawk Surveys and Avoidance If project activities, including site mobilization and construction, are scheduled during the nesting season for Swainson's hawks (March 1 to September 15), prior to beginning work on the project, the DB shall conduct surveys according to the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (SHTA 2000) and prepare a report documenting the survey results. The project owner shall obtain the CPM's written approval of the Designated Biological and/or Biological Monitor, per **BIO-1** and/or **BIO-3**. The survey report shall be submitted prior to starting project activities between March 1 and September 15. Survey methods shall be closely followed by starting early in the nesting season (late March to early April) to maximize the likelihood of detecting an active nest (nests, adults, and chicks are more difficult to detect later in the growing season because trees become less transparent as vegetation increases).

Surveys shall be conducted: 1) within a minimum 0.5-mile radius of the project site or a larger area if needed to identify potentially impacted active nests, unless otherwise approved by the CPM in writing, and 2) for at least the two survey periods immediately prior to initiating project-related construction activities. Surveys shall occur annually for the duration of the project.

If active Swainson's hawk nests are detected, the DB and/or Biological Monitor shall immediately notify the CPM and implement a 0.5-mile construction avoidance buffer around the nest until the nest is no longer active as determined by the DB, unless otherwise approved by the CPM in writing. Any detected nesting Swainson's hawk shall be monitored by the DB and/or Biological Monitor

to ensure it is not disturbed during construction activities, unless otherwise approved in writing by the CPM. If work within the 0.5-mile buffer cannot be avoided the project owner shall consult with the CPM to avoid any potential for unauthorized take for Swainson's hawk without incidental take authorization.

Verification: The project owner shall submit pre-construction survey reports to the CPM for review and approval no more than 30 days after each survey effort has been completed. The project owner shall submit reports in the MCR during nesting season and an annual report to the CPM within 60 days of the end of nesting season.

BIO-20 White-Tailed Kite Nesting Preconstruction Surveys and Nest Protection Buffers If project activities occur during the white-tailed kite nesting season (January to October with peak nesting occurring from February to August), no more than thirty (30) days prior to activities commencing, including heavy equipment use and staging, the DB shall survey all accessible areas within 0.25-mile of the project site for white-tailed kite nests. The DB shall report white-tailed kite nests to the CPM within 24 hours.

Nest Protection Buffers. The DB shall establish appropriate nest protection buffers of at 0.25-mile for white-tailed kite during project construction-related activities. The DB and/or Biological Monitor may expand or reduce the buffer, with the CPM approval, if deemed necessary based on specific site conditions, or in instances there is sufficient topographic relief to protect the nest(s) from excessive noise or visual disturbance between the activities and the active nest(s). Depending on site characteristics, the sensitivity of the nest, and surrounding land uses, the DB and/or Biological Monitor may increase the buffer zone to prevent disturbance at the active nest site from construction activities.

The DB and/or Biological Monitor shall monitor any white-tailed kite nests for the first two days prior to any construction activities to establish a behavioral baseline of the adults and any nestlings. In addition to direct impacts, such as nest destruction, nesting birds might be affected by noise, vibration, odors and movement of workers or equipment.

The DB and/or Biological Monitor shall monitor the behavior of any active golden eagle and white-tailed kite nest(s) within the buffer area at all times during construction activities and shall have authority to order the cessation of all construction work if the birds exhibit abnormal nesting behavior which may cause reproductive failure (nest abandonment and loss of eggs and/or young). Activities within line of sight of the nest shall not resume until the DB and/or Biological Monitor has consulted with the CPM and both the DB and/or Biological Monitor and the CPM confirm that the bird's behavior has normalized, or the young have fledged and are foraging independently. If the DB and/or Biological Monitor continues to detect signs of disturbance or behavioral changes, the

buffer shall be increased. If the DB and/or Biological Monitor determines that the nest is still at risk, the DB and/or Biological Monitor shall notify the CPM and a meeting with the project owner and the CPM shall be held to determine the best course of action to avoid nest abandonment or take of individuals.

Verification: The project owner shall submit pre-construction survey reports to the CPM for review and approval no more than 30 days after survey effort has been completed.

BIO-21 California Condor The DB and/or Biological Monitor shall temporarily halt project activities if any California condors are observed within the project area prior to the start of work. The DB and/or Biological Monitor shall allow the California condors to depart on their own before project activities resume. The DB and/or Biological Monitor shall immediately inform the CPM, CDFW and USFWS should any California condor-related work stoppages take place. These measures shall be included in the BRMIMP and implemented.

Verification: The DB and/or the Designated Monitor shall immediately notify the CPM, CDFW and USFWS if a work stoppage occurs due to the presence of California condor.

BIO-22 San Joaquin Kit Fox Impact Avoidance, Minimization, and Mitigation Measures for Take The project owner shall implement the following measures to avoid, minimize and offset impacts to San Joaquin kit fox during site mobilization, construction, and operation. These measures shall be included in the BRMIMP and implemented.

1. Standard Protective Guidance for San Joaquin Kit Fox. At no time shall the project owner or its representatives capture, pursue, or otherwise attempt to handle a San Joaquin kit fox. The project owner shall follow USFWS' Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS 2011).
2. Pre-Construction Surveys for San Joaquin Kit Fox. Within 15 days prior to any site mobilization, the DB and/or Biological Monitor shall conduct transect surveys to detect potential San Joaquin kit fox dens. Surveys shall be conducted by qualified biologists approved by the CPM, in coordination with USFWS and CDFW, pursuant to **BIO-1** and/or **BIO-3**. The DB and/or Biological Monitor shall conduct walking transects such that 100 percent visual coverage of the project site is achieved. Transect width shall be adjusted based on vegetation height, topography, etc., to facilitate the detection of dens and other signs. Walking transect surveys shall be used to detect and map known dens, potential dens, and sign (tracks, scat, prey remains). Detection dogs may be used if practicable with the approval of the CPM in consultation with the USFWS and CDFW. Potential San Joaquin kit fox scat shall be collected and labeled based on mapped location. Potential dens

shall be considered to be any subterranean hole on the site that has entrances of appropriate dimensions for which available evidence is insufficient to conclude that it is being used or has been used by a San Joaquin kit fox.

3. Construction Buffers for San Joaquin Kit Fox Dens. If a potential San Joaquin kit fox den is discovered, or a fox is found in an "atypical" den such as a pipe or culvert, the project owner or DB and/or Biological Monitor shall establish a 50-foot buffer using tagging. If a known kit fox den (one that shows evidence of current use or is known to have been used in the past) is discovered, a buffer of at least 100 feet shall be established using fencing. If a natal den is discovered, it shall be fenced and avoided in a buffer with a diameter of at least 200 feet. The project owner or DB and/or Biological Monitor shall notify USFWS, CDFW and the CPM for all of the above except potential kit fox dens. Buffer zones shall be considered environmentally sensitive areas, and entry shall be restricted.
4. Protection of San Joaquin Kit Fox Natal Dens. The project owner shall not excavate natal dens for San Joaquin kit fox until the pups and adults have vacated and only after receiving written permission from the CPM, USFWS, and CDFW. The project owner may destroy known dens only after three days of monitoring with tracking medium and an infra-red camera has determined that a San Joaquin kit fox is not present.
5. Destruction/Collapse of Potential San Joaquin Kit Fox Dens. Destruction of any potential San Joaquin kit fox dens shall be accomplished by the DB and/or Biological Monitor by careful excavation until it is certain that no San Joaquin kit foxes are inside. The den should be fully excavated, filled with dirt, and compacted to ensure that San Joaquin kit foxes cannot re-enter or use the den during the construction period. If at any point during excavation a San Joaquin kit fox or kit fox signs is discovered inside the den, excavation shall cease immediately, and monitoring of the den shall be resumed. The project owner, DB and/or Biological Monitor shall notify the CPM, USFWS, and CDFW within 24 hours should a kit fox be detected during a den excavation. If the animal is injured the project owner shall coordinate with the CPM, USFWS, and CDFW to transport the animal to an approved veterinarian for treatment. The cost of treatment shall be the responsibility of the project owner. Destruction of the den shall only be completed when, in the judgment of the DB, the animal has escaped from or otherwise vacated the partially destroyed den.

Verification: The project owner shall submit the results of the pre-construction surveys to the CPM for review and approval no more than 30 days after the survey has been completed.

BIO-23 American Badger Avoidance and Minimization Measures The DB and/or Biological Monitor(s) shall conduct pre-construction surveys for American badger.

Surveys shall be conducted by qualified biologists approved by the CPM, in coordination with CDFW, pursuant to **BIO-1** and/or **BIO-3**. These measures shall be included in the BRMIMP and implemented.

1. DB(s) and/or Biological Monitor(s) shall perform preconstruction surveys within 48 hours of ground disturbance to identify badger dens in the project disturbance area, including a 250-foot buffer zone within suitable habitat. If surveys need to be conducted more than 48 hours before construction, approval must be obtained from the CPM.
2. If dens are detected each den shall be classified as inactive, potentially active, or definitely active. If an American badger den is determined to by active, it shall be avoided by a minimum of 250 feet during the pupping season (March 1 through August 31) and by a minimum of 100 feet during the non-pupping season (September 1 through February 28). Avoidance buffers shall be established by the DB using staking, flagging, or other conspicuous materials. No project activities would be permitted within the avoidance buffers. The DB and/or Biological Monitor(s) may modify the avoidance buffer distances based on the location of the den, specific site conditions, and nature of proposed work activities, with prior written approval from the CPM in coordination with CDFW. The avoidance buffer shall remain in place until the DB(s) confirms that the young have left the den or the den has been naturally abandoned or failed.
3. Passive Relocation. If an active American badger den cannot be avoided, the project owner shall submit an American Badger Eviction Plan to the CPM for review and approval and the CDFW for review and comment. The American Badger Eviction Plan shall address proposed eviction activities outside the pupping season, and shall include, at a minimum, the following:
    a. Methods and materials used for construction and maintenance of one-way eviction doors;
    b. Use of continuous camera monitoring of dens for at least five consecutive days to confirm that no American badger individuals are present and to ensure none are trapped during eviction;
    c. Specific timing of eviction activities;
    d. Design, materials, and methods used for construction and maintenance of artificial burrows and/or identification of location and discussion of preexisting, suitable, and unoccupied natural dens;
    e. Methods of den collapse; and
    f. Details regarding a "protect-in-place" option (i.e., evict but no collapse).

    Passive relocation during the pupping season shall not be authorized. Passive relocation outside the pupping season shall be evaluated on a case-by-case basis by the CPM, in consultation with CDFW.

4. Notification of Detection. The project owner or DB shall notify the CPM as well as CDFW within 24-hours if an American badger or any other special status mammal is detected during the surveys or during routine monitoring. The report shall include the number of animals detected, photos, and the location of the detection. Upon receiving notification, the CPM and CDFW may provide guidance for further action as appropriate to the species.
5. Monitoring. The DB and/or Biological Monitor(s) shall remain onsite throughout the duration of any project activities that are conducted within 200 feet of the edge of the avoidance buffer. The biologist would have the authority to halt work, if it is determined that the animals are exhibiting increased levels of distress (e.g., displaying defensive behavior, pacing, leaving the den).
6. Report Mortalities and Serious Injuries Immediately. If any special status mammal species are found dead or injured during any project-related activities, the project owner or DB shall immediately notify the CPM and CDFW and shall provide written notification to CPM and CDFW within 48 hours. The CPM and CDFW shall review the activities resulting in mortality and determine if additional protective measures are required.
7. Reporting. A report documenting survey results, including surveyor name(s), date(s) of survey, location (with maps), weather conditions, and any observations or detections of sensitive mammals or their dens would be prepared and submitted to the CPM and CDFW. In addition, a monitoring report that includes the location, description, and duration of the activities, any observations or detections of these species found during the surveys or project activities would be provided during monthly, quarterly, and annual compliance reporting.

Verification: The project owner shall submit the pre-construction survey reports to the CPM and CDFW no more than 30 days after each survey effort has been completed. If required, the project owner shall submit a draft American Badger Eviction Plan to the CPM for review and approval and CDFW for review and comment. The final approved plan shall be submitted no less than 7 days prior to implementation.

BIO-24 Bat Habitat Assessment and Surveys The DB and/or Biological Monitor(s) shall conduct a habitat assessment for listed bat species within a minimum of 30 days prior to the beginning of site mobilization activities. Surveys shall be conducted by qualified biologists approved by the CPM, in coordination with CDFW, pursuant to **BIO-1** and/or **BIO-3**. These measures shall be included in the BRMIMP and implemented.

Surveys shall include a visual inspection of potential roosting features (e.g., cavities, crevices in wood and bark, exfoliating bark for colonial species, suitable canopy for foliage roosting species, and anthropogenic structures such as

buildings, bridges, and culverts). If suitable habitat is found, it shall be flagged or otherwise clearly marked.

If any active maternity or hibernation roosts are identified within 100 feet of the construction work area, a CPM-approved DB and/or Biological Monitor shall establish site-specific protective buffers around roosts, sized with consideration for the species that are present and the time of year bats are roosting, as well as levels of construction noise and light emission from project activities.

Verification: The project owner shall submit the results of the pre-construction surveys to the CPM for review and approval no more than 30 days after the survey has been completed.

BIO-25 Lake and Streambed Equivalency Conditions The project owner shall implement the following measures to avoid, minimize and mitigate for potential direct and indirect impacts to jurisdictional features and to satisfy the requirements of California Fish and Game Code, sections 1600 through 1607.

1. Copies of Requirements, Stop Work Authority: The project owner shall provide a copy of the Streambed Impact Minimization and Compensation Measures identified in this condition of certification and any other water related permit conditions to all contractors, subcontractors, and the project owner's project supervisors. This includes copies of the WDR required by **WATER-4**. Copies shall be maintained at each work site and be readily available during periods of active work and must be presented to the CPM or personnel from another state, federal, or local agency upon request. The CPM reserves the right to issue a stop work order after giving notice to the project owner, if the CPM, in consultation with CDFW, determines that the project owner is not in compliance with any of the requirements in this condition, including but not limited to the existence of any of the following:
    a. The information provided by the project owner regarding streambed alteration is incomplete or inaccurate;
    b. New information becomes available that was not known to the CEC CPM or the CDFW at the time of project certification; or
    c. The project or project activities as approved in the Final Commission Decision have changed.
2. Provide Maps of Proposed Disturbance Areas. The project owner shall provide detailed maps of all proposed work areas that have the potential to result in temporary or permanent impacts to any jurisdictional feature to the CPM and CDFW prior to any site mobilization. This includes providing maps of work areas around each of the access roads, pull and tensioning sites, and staging areas or other work areas if near Patterson Run Creek. Maps, at an approved scale of all proposed temporary and permanent work areas shall be provided to the CPM and CDFW prior to any site mobilization. At the

conclusion of construction, the project owner shall provide a true-up of any jurisdictional features that were subject to temporary or permanent impacts.

3. General Species Protection Measures. Species specific protection measures including surveys and monitoring for sensitive plants and wildlife are included in separate conditions of certification. General protective conditions applicable to all species are identified below.

4. Best Management Practices. The project owner shall comply with the following conditions to protect drainages near the project disturbance area:

    a. Silt Control Measures. Silt control measures shall be utilized throughout all phases of the project where silt and/or earthen fill threaten to enter jurisdictional features. Silt control structures shall be monitored for effectiveness and shall be repaired or replaced as needed. Build-up of soil behind the fence shall be removed promptly and any breaches or undermined areas repaired at once.

    b. Erosion Control. All exposed/disturbed areas within the project site shall be stabilized to the greatest extent possible. Erosion control measures, such as silt fences, shall be used wherever silt laden water has the potential to leave the work site and enter State waters. Erosion control measures shall be monitored during and after each storm event. Modifications, repairs and improvements to erosion control measures shall be made whenever it is needed. Materials used for erosion control or to repair erosion control shall not pose a risk to fish or wildlife. Monofilament shall not be used.

    c. Culverts and outfalls. Culverts and outfalls shall be adequately sized to carry peak storm flows for the drainage to one outfall structure. The culverts and the outfall structure shall be properly aligned within the stream and otherwise engineered, installed and maintained, to assure resistance to washout, and erosion of the stream bed, stream banks and/or fill. Water velocity shall be dissipated at the outfall, to reduce erosion.

    d. Prohibition Against Use of Plastic Netting in Erosion Control Measures. The project owner shall not use temporary or permanent erosion control devices containing plastic netting, including photo- or bio-degradable plastic netting. Erosion control and landscaping specification shall only allow natural fiber for use in erosion control mats, blankets, and straw or fiber wattles.

    e. Bank Stabilization. The project owner shall construct bank stabilization with suitable non-erodible materials that will withstand wash out. The bank stabilization material shall extend above the normal high-water mark. Only clean material such as rock riprap that is free of trash, debris and deleterious material shall be used as bank stabilization. Asphalt shall not be considered an acceptable material.

f. Clean Equipment Use. Prior to operations, all heavy equipment and vehicles shall be cleaned of all external materials, which may be deleterious to aquatic life, wildlife, and riparian habitat (such as oil, grease, or hydraulic fluid). Cleaning shall not occur within a watercourse, stream channel or stream bank.

g. Storage and Stationary Equipment. Stationary equipment such as motors, pumps, generators, compressors and welders, located within adjacent to the stream, shall be positioned over drip pans. Stationary heavy equipment shall have suitable containment to handle a catastrophic spill/leak.

h. No Equipment Operated on Wet Bed of Creek. Equipment shall not be operated in wetted areas including but not limited to ponded, flowing, or wetland areas, except as may be necessary to construct coffer dams to divert stream flow and isolate the work site.

5. Hazardous Materials, Concrete, and Spills

a. Hazardous Substances. Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to aquatic life, resulting from project-related activities, shall be prevented from contaminating the soil and/or entering the waters of the state.

b. Toxic Materials. Any hazardous or toxic materials that could be deleterious to aquatic life that could be washed into a stream, or its tributaries shall be contained in watertight containers or removed from the project area.

c. Hazardous Materials. Debris, soil, silt, bark, slash, sawdust, rubbish, creosote-treated wood, raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to aquatic life, wildlife, or riparian habitat resulting from the project related activities shall be prevented from contaminating the soil and/or entering the waters of the state.

d. Sacked Concrete. The use of sacked concrete, asphalt pieces or asphalt containing pavement grindings within twenty (20) feet of the top-of-bank of a stream /outside of the ordinary high-water mark is prohibited, or where it may enter the channel.

e. Concrete – Primary Containment. Wet concrete shall be contained and prevented from entering any stream unless as authorized by this COC. No concrete shall be poured within the high flow line if the 10-day weather forecast indicates any chance of rain above ¼" in a 24-hour period, unless approved by the CPM, in coordination with CDFW.

f. Concrete – Biological Monitor. At all times when pouring or working with wet concrete a DB and/or Biological Monitor shall be present to inspect containment structures and ensure that no concrete or other debris enters the stream outside of those structures.

g. Concrete – Secondary Containment. Secondary containment shall be installed between the primary containment structures (i.e. headwall form, roadway forms) and the stream to prevent wet concrete from entering into the stream upon failure or leak of primary structures. No concrete shall be poured within the high flow line if the 10-day weather forecast indicates any chance of rain above ¼" in a 24-hour period, unless approved by the CPM, in coordination with CDFW.

h. Creosote-Treated Wood. Creosote-treated wood products for decking shall not be used in waters of the state. Alternatives that may be appropriate include steel, concrete, plastic, or wood products treated with preservatives that do not contain creosote or other materials that are deleterious to aquatic life.

i. Spill Containment. All activities performed in or near a stream shall have absorbent materials designated for spill containment and cleanup activities on-site for use in an accidental spill. In the event of a spill the project owner shall immediately notify the CPM, CDFW, RWQCB, and the California Emergency Management Agency at 1-800-852-7550, or most current phone number, and immediately initiate the cleanup activities.

j. Staging and Storage. Staging and storage areas for equipment, materials, fuels, lubricants and solvents, shall be located outside of the stream channel and banks, avoiding areas of concentrated ground squirrel burrows suitable for use by California tiger salamander or burrowing owls. Stationary equipment such as motors, pumps, generators, compressors and welders, located within or adjacent to the stream shall be positioned over drip pans. Any equipment or vehicles driven and/or operated within or adjacent to the stream must be checked and maintained daily, to prevent leaks of materials that if introduced to water could be deleterious to aquatic life. Vehicles must be moved away from the stream prior to refueling and lubrication.

k. Spoils Placement. Spoils shall be placed in a stable area above the ordinary high water mark avoiding areas of concentrated ground squirrel burrows suitable for use by burrowing owls or California tiger salamanders.

6. Compensatory Measures. To compensate for adverse impacts to fish and wildlife resources identified above that cannot be avoided or minimized, the project owner shall implement each measure listed below.

a. Seed and Mulch. Upon completion of operations and/or onset of wet weather, all disturbed earthen materials shall be seeded and mulched.

b. Permanent Impacts to Aquatic Habitat. The project owner shall provide compensation for permanent impacts to 2,100 square feet of stream habitat through creation, restoration and/or enhancement of aquatic habitat subject to CPM approval. The project owner shall submit a Mitigation and Monitoring Plan (MMP) for permanent impacts to aquatic habitat within a minimum of 60 days prior to the start of site mobilization for the CPM review and written approval. The MMP shall describe the type of mitigation and monitoring activities to be conducted, and performance criteria to be met to ensure successful mitigation.

c. Vegetation Restoration and Enhancement Plan. The project owner shall prepare a Vegetation Restoration and Enhancement Plan (Restoration Plan) (**BIO-8**) to restore areas that are temporarily disturbed during construction to pre-project or better conditions. The project owner shall submit the Restoration Plan to the CPM for approval within at least 30 days prior to the start of restoration activities.

d. Native Plant Materials. Revegetation shall include only local plant materials native to the project area, unless otherwise approved by the CPM in writing. Seed may be collected from within the project site. Additional seed shall be sourced from within 50 miles of the project site (i.e., original genetic material shall have been collected within this radius); however, the seed may be purchased from a seed farm outside of this area. For seeding and mulching exposed slopes, the seed blend may include one or two sterile non-native perennial grass species.

e. Prohibited Plant Species. The project owner shall not plant, seed, or otherwise introduce invasive plant species. Prohibited exotic plant species include those identified in the California Invasive Plant Council's Inventory Database, which is accessible at: http://www.cal-ipc.org/paf/. No more than 15 percent of the vegetation in each restoration site shall consist of species designated as high or moderate invasive plants in the Cal-IPC. If the presence of invasive species exceeds this threshold, the project owner is responsible for conducting appropriate control activities in coordination with the property owner.

f. Compost or Mulch. Compost and/or mulch shall contain no visible glass, metal, or plastic. Paper shall be no more than 0.5 percent by weight or volume. Municipal compost shall not be used.

Verification: Maps of all proposed temporary and permanent work areas shall be provided to the CPM no less than 30 days prior to any site mobilization. At the conclusion of construction, the project owner shall provide a true-up of any jurisdictional features that were subject to temporary or permanent impacts the

CPM no more than 30 days following the cessation of construction along the generation tie- line in the Construction Termination Report.

BIO-26 Habitat Management Land Acquisition for Crotch's Bumble Bee, Western Burrowing Owl, California Tiger Salamander and San Joaquin Kit Fox To mitigate for impacts to Crotch's Bumble Bee, Western Burrowing Owl, California Tiger Salamander and San Joaquin Kit Fox the project owner shall prepare a Habitat Lands Acquisition Plan to fulfill the following requirements:

The project owner shall either 1) purchase 188.8 acres of Covered Species credits from a CDFW-approved mitigation or conservation bank pursuant to Item 2 below within the East Alameda County Conservation Strategy (EACCS) CTS North mitigation area (Chapter 3, Figure 3-10, dated October 2010), 2) shall provide for the permanent protection and management of 188.8 acres of Habitat Management (HM) lands for Covered Species pursuant to Item 3 below and the calculation and deposit of the management funds pursuant to Item 5 below, or 3) shall complete mitigation obligations for 188.8 acres of covered species habitat using a combination of purchasing covered species credits and providing for the permanent protection and management of habitat.

The HM lands for California tiger salamander habitat, San Joaquin kit fox habitat, Crotch's bumble bee habitat and western burrowing owl habitat may be combined if the habitat is suitable for all four Covered Species and approved by the CPM in coordination with CDFW.

Additional credits or HM lands may be required if the CDFW-approved conservation bank site or HM lands site is outside of the EACCS CTS North mitigation area described above. Additional credits may also be required if the project is not within the Service Area of the CDFW-approved conservation bank. The project owner shall provide the CPM with a copy of the credit purchase agreement for the required credits prior to commencing Covered Activities.

Purchase of Covered Species credits at a CDFW-approved conservation bank or permanent protection and funding for perpetual management of HM lands must be complete before starting Covered Activities, or within 18 months of the effective date of this certification if Security is provided pursuant to Item 12 below for all uncompleted obligations. If the project owner is unable to purchase credits or provide permanent protection and funding for perpetual management of HM lands within the allowed timeframe, an Amendment to this certification may be required.

1. Cost Estimates. For the purposes of determining the Security amount, the CPM, in coordination with CDFW, has estimated the cost sufficient for the CEC or its contractors to complete acquisition, protection, and perpetual management of the HM lands and restoration of temporarily disturbed habitat as follows:

a. Land acquisition costs for HM lands identified in Condition of Approval 9.3 below, estimated at $20,000.00/acre for 188.8 acres: $3,776,000.00 for construction and maintenance impacts. Land acquisitions costs are estimated using local fair market current value per acre for lands with habitat values meeting mitigation requirements;

b. All other costs necessary to review and acquire the land in fee title and record a conservation easement as described in Item 3 below: $10,000.

c. Start-up costs for HM lands, including initial site protection and enhancement (including Crotch's Bumble Bee Habitat Mitigation and Monitoring Plan) costs as described in Item 3 below, estimated at $50,000.00;

d. Interim management period funding as described in Item 3e below, estimated at $350,000.00;

e. Long-term management funding as described in Condition of Approval 9.4 below, estimated at $5,000.00/acre for 188.8 acres: $944,000.00. Long-term management funding is estimated initially for the purpose of providing Security to ensure implementation of HM lands management.

f. Related transaction fees including but not limited to account set-up fees, administrative fees, title and documentation review and related title transactions, expenses incurred from other state agency reviews, and overhead related to transfer of HM lands to the CEC as described in Item 10 estimated at $3,400.00.

g. Restoration of on-site temporary effects to Covered Species habitat as described in Item 11, calculated at $3,500.00/acre for 6.7 acres: $23,450.00.

h. All costs associated with the CPM or CDFW engaging an outside contractor to complete the mitigation tasks, including but not limited to acquisition, protection, and perpetual funding and management of the HM lands and restoration of temporarily disturbed habitat. These costs include but are not limited to the cost of issuing a request for proposals, transaction costs, contract administration costs, and costs associated with monitoring the contractor's work: **$100,000.00**.

2. Covered Species Credits. If the project owner elects to purchase Covered Species credits to complete compensatory mitigation obligations, then the project owner shall purchase 188.8 acres of Covered Species credits from a CDFW-approved mitigation or conservation bank prior to initiating Covered Activities, or no later than 18 months from start of site mobilization if Security is provided. Prior to purchase of Covered Species credits, the project owner shall obtain CPM approval to ensure the mitigation or conservation bank is appropriate to compensate for the impacts of the Project. The project owner shall submit to the CPM a copy of the Bill of Sale(s) and

Payment Receipt prior to initiating Covered Activities or within 18 months from start of site mobilization if Security is provided.

3. Habitat Management Land Acquisition and Protection. If the project owner elects to provide for the acquisition and perpetual protection and management of HM lands to complete the compensatory mitigation obligations, the project owner shall:

    a. Fee Title. Transfer fee title of the HM lands to the CDFW pursuant to terms approved in writing by CPM. Alternatively, the CPM, in coordination with CDFW, may authorize a governmental entity, special district, non-profit organization, for-profit entity, person, or another entity to hold title to and manage the property provided that the district, organization, entity, or person meets the requirements of Government Code sections 65965-65968, as amended.

    b. Conservation Easement. If CDFW does not hold fee title to the HM lands, CDFW shall act as grantee for a conservation easement over the HM lands or shall, in its sole discretion, approve a non-profit entity, public agency, or Native American tribe to act as grantee for a conservation easement over the HM lands provided that the entity, agency, or tribe meets the requirements of Civil Code section 815.3. If CDFW elects not to be named as the grantee for the conservation easement, CDFW shall be expressly named in the conservation easement as a third-party beneficiary. The project owner shall obtain CDFW written approval of any conservation easement before its execution or recordation. No conservation easement shall be approved by CDFW unless it complies with Civil Code sections 815-816, as amended, and Government Code sections 65965-65968, as amended and includes provisions expressly addressing Government Code sections 65966(j) and 65967(e). Because the "doctrine of merger" could invalidate the conservation interest, under no circumstances can the fee title owner of the HM lands serve as grantee for the conservation easement.

    c. HM Lands Approval. Obtain CPM written approval of the HM lands before acquisition and/or transfer of the land by submitting, at least three months before acquisition and/or transfer of the HM lands, documentation identifying the land to be purchased or property interest conveyed to an approved entity as mitigation for the project's impacts on Covered Species. HM lands shall meet the minimum habitat requirements for the Covered Species including, but not limited to one or more aquatic features on-site which have been documented to support successful Covered Species breeding in an average or below average rainfall year (abundance and distribution) or adjacent to aquatic features which have been documented to support successful Covered Species breeding in an average or below average rainfall year (abundance and distribution) and already conserved and managed to

the satisfaction of the CPM for the Covered Species; no less than 100 acres of suitable upland or adjacent to suitable upland already conserved and managed for the Covered Species;

d. HM Lands Documentation. Provide a recent preliminary title report, Phase I Environmental Site Assessment, and other necessary documents (please contact the CPM for document list). All documents conveying the HM lands and all conditions of title are subject to the approval of the CPM in coordination with CDFW, and if applicable, the Wildlife Conservation Board and the Department of General Services;

e. Land Manager. Designate both an interim and long-term land manager approved by the CPM in coordination with CDFW. The interim and long-term land managers may, but need not, be the same. The interim and/or long-term land managers may be the landowner or another party. The land manager shall prepare a draft management plan for CPM review and approval, in consultation with CDFW, and written approval as part of the HM lands acquisition process. The project owner shall notify the CPM of any subsequent changes in the land manager within 30 days of the change. If CDFW will hold fee title to the mitigation land, CDFW would also act as both the interim and long-term land manager unless otherwise specified. The grantee for the conservation easement cannot serve as the interim or long-term manager without the express written authorization of the CPM in its sole discretion.

f. Start-up Activities. Provide for the implementation of start-up activities, including the initial site protection and enhancement of HM lands, once the HM lands have been approved by the CPM in coordination with CDFW. Start-up activities include, at a minimum: (1) preparing a final management plan for CPM review and approval in coordination with CDFW (see https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=137386&inline) (2) conducting a baseline biological assessment and land survey report within four months of recording or transfer; (3) developing and transferring Geographic Information Systems (GIS) data if applicable; (4) establishing initial fencing; (5) conducting litter removal; (6) conducting initial habitat restoration or enhancement, if applicable; and (7) installing signage;

4. Interim Management (Initial and Capital). Provide for the interim management of the HM lands. The project owner shall ensure that the interim land manager implements the interim management of the HM lands as described in the final management plan and conservation easement approved by the CPM. The interim management period shall be a minimum of three years from the date of HM land acquisition and protection and full funding of the Endowment and includes expected management following start-up activities. Interim management period activities described in the final management plan shall include fence repair, continuing trash removal, site monitoring, and

vegetation and invasive species management, and pond repair and maintenance.

The project owner shall either (1) provide Security to the CPM for the minimum of three years of interim management that the land owner, the project owner, or land manager agrees to manage and pay for at their own expense, (2) establish an escrow account with written instructions approved in advance in writing by the CPM to pay the land manager annually in advance, or (3) establish a short-term enhancement account with the CPM or a the CPM-approved entity for payment to the land manager.

5. Endowment Fund. If the project owner elects to provide for the acquisition, permanent protection, and perpetual management of HM lands to complete compensatory mitigation obligations, then the project owner shall ensure that the HM lands are perpetually managed, maintained, and monitored by the long-term land manager as described in this condition of certification, the conservation easement, and the final management plan approved by the CPM in coordination with CDFW. After obtaining the CPM approval of the HM lands, the project owner shall provide long-term management funding for the perpetual management of the HM lands by establishing a long-term management fund (Endowment). The Endowment is a sum of money, held in a CEC-approved fund that is permanently restricted to paying the costs of long-term management and stewardship of the mitigation property for which the funds were set aside, which costs include the perpetual management, maintenance, monitoring, and other activities on the HM lands consistent with the condition of certification, the conservation easement, and the management plan. Endowment as used in the Certification shall refer to the endowment deposit and all interest, dividends, other earnings, additions and appreciation thereon. The Endowment shall be governed by this license, Government Code sections 65965-65968, as amended, and Probate Code sections 18501-18510, as amended.

   After the interim management period, the project owner shall ensure that the designated long-term land manager implements the management and monitoring of the HM lands according to the final management plan. The long-term land manager shall be obligated to manage and monitor the HM lands in perpetuity to preserve their conservation values in accordance with this license, the conservation easement, and the final management plan. Such activities shall be funded through the Endowment.

6. Identify an Endowment Manager. The Endowment shall be held by the Endowment Manager, which shall be either CDFW or another entity qualified pursuant to Government Code sections 65965-65968, as amended.

   The project owner shall submit to the CPM a written proposal that includes: (i) the name of the proposed Endowment Manager; (ii) whether the

proposed Endowment Manager is a governmental entity, special district, nonprofit organization, community foundation, or congressionally chartered foundation; (iii) whether the proposed Endowment Manager holds the property or an interest in the property for conservation purposes as required by Government Code section 65968(b)(1) or, in the alternative, the basis for finding that the Project qualifies for an exception pursuant to Government Code section 65968(b)(2); and (iv) a copy of the proposed Endowment Manager's certification pursuant to Government Code section 65968(e).

Within thirty days of the CPM's receipt of the project owner's written proposal, the CPM in coordination with CDFW shall inform the project owner in writing if it determines the proposal does not satisfy the requirements of Fish and Game Code section 2081(b)(3) and, if so, shall provide the project owner with a written explanation of the reasons for its determination. If the CPM in coordination with CDFW does not provide the project owner with a written determination within the thirty-day period, the proposal shall be deemed consistent with Section 2081(b)(3).

7. Calculate the Endowment Funds Deposit. After obtaining the CPM's written approval of the HM lands, long-term management plan, and Endowment Manager, the project owner shall prepare an endowment assessment (equivalent to a Property Analysis Record (PAR)) to calculate the amount of funding necessary to ensure the long-term management of the HM lands (Endowment Deposit Amount). Note that the endowment for the easement holder should not be included in this calculation. The project owner shall submit to the CPM, in coordination with CDFW, for review and approval the results of the endowment assessment before transferring funds to the Endowment Manager.

    a. Capitalization Rate and Fees. The project owner shall obtain the capitalization rate from the selected Endowment Manager for use in calculating the endowment assessment and adjust for any additional administrative, periodic, or annual fees.

    b. Endowment Buffers/Assumptions. The project owner shall include in the endowment assessment assumptions the following buffers for endowment establishment and use that would substantially ensure long-term viability and security of the Endowment:

    c. 10 Percent Contingency. A 10 percent contingency shall be added to each endowment calculation to hedge against underestimation of the fund, unanticipated expenditures, inflation, or catastrophic events.

    d. Three Years Delayed Spending. The endowment shall be established assuming spending will not occur for the first three years after full funding.

e. Non-annualized Expenses. For all large capital expenses to occur periodically but not annually such as fence replacement or well replacement, payments shall be withheld from the annual disbursement until the year of anticipated need or upon request to Endowment Manager and the CPM.

8. Transfer Long-term Endowment Funds. The project owner shall transfer the long-term endowment funds to the Endowment Manager upon the CPM's approval of the Endowment Deposit Amount identified above.

9. Management of the Endowment. The approved Endowment Manager may pool the Endowment with other endowments for the operation, management, and protection of HM lands for local populations of the Covered Species but shall maintain separate accounting for each Endowment. The Endowment Manager shall, at all times, hold and manage the Endowment in compliance with this certification, Government Code sections 65965-65968, as amended, and Probate Code sections 18501-18510, as amended.

   Notwithstanding Probate Code sections 18501-18510, the Endowment Manager shall not make any disbursement from the Endowment that would result in expenditure of any portion of the principal of the endowment without the prior written approval of the CPM in its sole discretion. The project owner shall ensure that this requirement is included in any agreement of any kind governing the holding, investment, management, and/or disbursement of the Endowment funds.

   Notwithstanding Probate Code sections 18501-18510, if the CPM determines in its sole discretion that an expenditure needs to be made from the Endowment to preserve the conservation values of the HM lands, the Endowment Manager shall process that expenditure in accordance with directions from the CPM. The Endowment Manager shall not be liable for any shortfall in the Endowment resulting from the CPM's decision to make such an expenditure.

10. Reimburse the CEC. The project owner shall reimburse CEC for all costs incurred by the CEC related to issuance and monitoring of this certification, including, but not limited to transaction fees, account set-up fees, administrative fees, title and documentation review and related title transactions, costs incurred from other state agency reviews, and overhead related to transfer of HM lands to the CEC.

11. Habitat Restoration. The project owner shall restore on-site the 6.7 acres of Covered Species habitat that will be temporarily disturbed during construction to pre-project or better conditions. The restoration shall occur the same year the disturbance occurs. Within 6 months of issuance of the start of site mobilization, the project owner shall prepare a Vegetation Restoration and Enhancement Plan (**BIO-8**) to facilitate revegetation of the 6.7 acres of

temporary construction disturbance on-site and shall ensure that the Plan is successfully implemented by the contractor. The Plan shall include detailed specifications for restoring all temporarily disturbed areas, such as seed mixes and application methods. The Plan shall also indicate the best time of year for seeding to occur.

12. Security: The project owner may proceed with project activities only after the project owner has ensured funding (Security) to complete any activity required by Item 3 (Habitat Management Land Acquisition and Protection) that has not been completed before project activities begin. The project owner shall provide Security as follows:

    a. Security Amount. The Security shall be in the amount of $5,256,850.00 or in the amount identified in Item 1 (Cost Estimates) specific to the obligation that has not been completed. This amount is determined by the CPM and is based on cost estimates identified in Item 1 above, sufficient for the CEC or its contractors to complete land acquisition, property enhancement, startup costs, initial management, long-term management, and monitoring.

    b. Security Form. The Security shall be in the form of an irrevocable letter of credit or another form of Security approved in advance in writing by the CPM, in coordination with CDFW.

    c. Security Timeline. The Security shall be provided to the CPM before starting site mobilization.

    d. Security Holder. The Security shall be held by the CPM or in a manner approved in advance in writing by the CPM.

    e. Security Transmittal. The project owner shall transmit the security to the CPM by way of an approved instrument such as an escrow agreement, irrevocable letter of credit, or other.

    f. Security Drawing. The Security shall allow the CPM to draw on the principal sum if the CPM, in its sole discretion, determines that the project owner has failed to comply with this condition of certification.

    g. Security Release. The Security (or any portion of the Security then remaining) shall be released to the project owner after the CPM has conducted an on-site inspection and received confirmation that all secured requirements have been satisfied, as evidenced by:

        i. Copy of Bill of Sale(s) and Payment Receipt(s) or Credit Transfer Agreement for the purchase of Covered Species credits; or

        ii. Written documentation of the acquisition of the HM lands;

        iii. Copies of all executed and recorded conservation easements; and

        iv. Written confirmation from the approved Endowment Manager of its receipt of the full Endowment;

h. Additional Funding. The CPM, in consultation with USFWS and CDFW, may require the project owner to provide additional HM lands and additional funding to ensure the impacts of the taking are minimized and fully mitigated, as required by law, if the project owner does not complete these requirements within the specified timeframe.

Even if Security is provided, the project owner must complete the required acquisition, protection and transfer of all HM lands and record any required conservation easements no later than 18 months from the date of start of site mobilization.

Verification: Even if Security is provided, the project owner shall provide the CPM verification that the required acquisition, protection and transfer of all HM lands has occurred, and record any required conservation easements no later than 18 months from the start date of site mobilization. The project owner shall provide the Draft Habitat Lands Acquisition Plan to the CPM for review and approval and to CDFW for review and comment no later than 60 days prior to construction. The project owner shall submit the Final Management Plan to the CPM and CDFW no later than 7 days prior to construction.

BIO-27 Post BESS Fire Monitoring and Management Plan The project owner shall develop a Post BESS Fire Monitoring and Management Plan (PBFMMP). The project owner shall provide the draft PBFMMP to the CPM for review and approval. No site mobilization or construction activities may occur prior to approval of the final PBFMMP by the CPM. The PBFMMP shall be prepared in consultation with the DB and shall include the following:

1. Baseline Data. The development of pre-operation sediment sampling locations within a two-mile radius of the BESS. The sampling shall include a test for the expected post fire constituents. In addition, known seeps and springs within a five-mile radius that could be used by special status species shall be sampled for water quality and chemical constituents. Identify locations along the major drainages downstream of the project site where chemicals could become concentrated after rainfall;
2. Toxicity Thresholds. Identify the thresholds for toxicity for each chemical constituent to vegetation and wildlife;
3. Post Fire Monitoring. Include post fire monitoring requirements including an initial assessment within 2-weeks of the fire and a program of quarterly testing for the first year then annually for 3-5 years if battery-related contaminants (HF, heavy metals) are detected above threshold levels in water or sediment. Conduct additional monitoring if invasive species spread or species decline or patterns of habitat use are detected;
4. Species Specific Monitoring. Describe post fire monitoring to evaluate potential impacts to sensitive vegetation and wildlife. Evaluate burn severity

and chemical contamination; track vegetation recovery and if there are any increases in non-native vegetation; document species presence and health post fire include observations of changes in nesting behavior or use of habitat; assess soil erosion and soil stability in any areas subject to remediation. Conduct surveys for special status species, including burrowing owls and include health checks where possible and provide veterinarian care for injured wildlife;

5. Habitat Recovery Metrics and Decontamination Methods. Provide a detailed description of the measures and metrics that would be used to assess health impacts to plants and wildlife, evaluate impacts to important foraging habitat and what decontamination methods shall be taken to avoid or mitigate impacts on each special-status species potentially impacted by a BESS fire. Include methods to contain storm and firefighting waste water;
6. Restoration and Adaptive Management. Identify methods for post fire restoration if needed including the acquisition of additional habitat at a 1:1 ratio should soils be contaminated above threshold limits and/or become unavailable to wildlife after the fire. Include methods for collaborating with CDFW, USFWS, and CPM during these activities; and
7. Reporting. Identify all pre-fire testing locations on a map, at an approved scale (typically 1:6,000 or other scale with CPM approval). Identify post fire plume direction(s) and areas where soil testing indicates chemical constituents above baseline and at or above toxicity levels. Provide a detailed report of remedial actions taken during and post fire of all monitoring and restoration activities. Include the results of field surveys, animal health assessments, and observations of damaged vegetation or other fire related factors.

Verification: The project owner shall submit the draft PBFMMP to the CPM for review and approval at least 45 days prior to start of the delivery of any BESS battery components. The project owner shall provide the final PBFMMP to the CPM at least 10 days prior to start of the delivery of any BESS battery components.

BIO-28 Monarch Butterfly Avoidance and Minimization Measures No more than 2 days prior to the initiation of site mobilization and/or construction-related vegetation trimming or removal, the applicant shall ensure that the DB and/or Biological Monitor surveys all areas of potentially suitable habitat for monarch butterfly larval host plants. Surveys shall be conducted by qualified biologists approved by the CPM pursuant to **BIO-1** and/or **BIO-3**. These measures shall be included in the BRMIMP and implemented.

If host plants are found, the DB shall survey all host plants for monarch eggs, larvae, and pupae. If no eggs, larvae, or pupae are found, plants may be removed within 2 days with approval from the CPM. If eggs, larvae, or pupae are present, host plants shall be protected in place until the DB has determined that the breeding season has concluded, or coordination with the CPM and USFWS

occurs. It is recommended, to the extent feasible, that that milkweed removal should be avoided until after the plant has gone to seed.

Verification: The project owner shall submit the results of the pre-construction monarch butterfly survey to the CPM for review and approval no later than 7 days after the survey is completed.

5.2.6 Recommended Mitigation Measures

For the project components outside CEC's Opt-In Certification area, the following mitigation measures can and should be adopted by the agency with permitting authority over those components consistent with California Code of Regulations title 14, section 15091(a)(2). If surveys or subsequent analysis indicate potential for 'take' of state or federally listed species, PG&E shall coordinate with the CDFW and/or USFWS to determine the necessity for incidental take coverage (e.g., Incidental Take Permit or Biological Opinion) and obtain such coverage prior to ground disturbing activities in the potentially affected area.

MM BIO-1 Annual Training (FP-01) Hold annual training on habitat conservation plan requirements for employees and contractors performing covered activities in the Plan Area that are applicable to their job duties and work.

MM BIO-2 Standard Construction Practices The following standard construction practices would be implemented, to reduce the potential for environmental impacts:

1. Parking (FP-02): Park vehicles and equipment on pavement, existing roads, or other disturbed or designated areas (barren, gravel, compacted dirt).
2. Use Existing Roads (FP-03): Use existing access and ROW roads. Minimize the development of new access and ROW roads, including clearing and blading for temporary vehicle access in areas of natural vegetation.
3. Off Road Access (FP-04): Locate off-road access routes and work sites to minimize impacts on plants, shrubs, and trees, small mammal burrows, and unique natural features (e.g., rock outcrops).
4. Equipment Inspection (FP-06): Minimize potential for covered species to seek refuge or shelter in pipes and culverts. Inspect pipes and culverts, of diameter wide enough to be entered by a covered species that could inhabit the area where pipes are stored, for wildlife species prior to moving pipes and culverts. Immediately contact a biologist if a covered species is suspected or discovered.
5. Vehicle Speed (FP-07): Vehicle speeds on unpaved roads will not exceed 15 miles per hour.

6. Trash, Firearms, Fire, Hunting, and Pets (FP-08): Prohibit trash dumping, firearms, open fires (such as barbecues), hunting, and pets (except for safety in remote locations) at work sites.
7. Fire Safety (FP-09): During fire season in designated State Responsibility Areas, equip all motorized equipment with federally approved or state-approved spark arrestors. Use a backpack pump filled with water and a shovel and fire-resistant mats and/or windscreens when welding. During fire "red flag" conditions as determined by Cal Fire, curtail welding. Each fuel truck will carry a large fire extinguisher with a minimum rating of 40 B:C. Clear parking and storage areas of all flammable materials.
8. Minimize Footprint and Time (FP-10): Minimize the activity footprint and minimize the amount of time spent at a work location to reduce the potential for take of species.
9. Erosion and Sediment Control (FP-11): Utilize standard erosion and sediment control BMPs (pursuant to the most current version of PG&E's Stormwater Field Manual for Construction Best Management Practices) to prevent construction site runoff into waterways.
10. Trench/Hole Inspection and Escape Ramps (FP-13): Fit open trenches or steep-walled holes with escape ramps of plywood boards or sloped earthen ramps at each end if left open overnight. Field crews will search open trenches or steep-walled holes every morning prior to initiating daily activities to ensure wildlife are not trapped. If any **common** wildlife are found, a biologist will be notified and would relocate the species to adjacent habitat or the species will be allowed to naturally disperse, as determined by a biologist. **If any special-status species are found, the biologist will coordinate with CDFW and/or USFWS to determine if take coverage is necessary**.
11. Revegetation (FP-14): If the covered activity disturbs 0.1 acre or more of habitat for a covered species in grasslands, the field crew will revegetate the area with a commercial "weed free" seed mix.
12. Refueling (FP-15): Prohibit vehicular and equipment refueling 250 feet from the edge of vernal pools, and 100 feet from the edge of other wetlands, streams, or waterways. If refueling must be conducted closer to **jurisdictional waters** ~~wetlands~~, construct a secondary containment area subject to review by an environmental field specialist (EFS) and/or biologist. Maintain spill prevention and cleanup equipment in refueling areas.
13. **~~Wetland/Riparian~~ Jurisdictional Waters** Buffers (FP-16): Maintain a buffer of ~~250 feet from the edge of vernal pools and~~ 50 feet from the edge of **jurisdictional waters** ~~wetlands, ponds, or riparian areas~~. If maintaining the buffer is not possible because the areas are either in or adjacent to facilities, the field crew would implement other measures as prescribed by the land planner, biologist, or HCP administrator to minimize impacts by

flagging access, requiring foot access, restricting work until dry season, or requiring a biological monitor during the activity.

14. Tree Felling and Removal (FP-17): Directionally fell trees away from an exclusion zone, if an exclusion zone has been defined. If this is not possible, remove the tree in sections. Avoid damage to adjacent trees to the extent possible. Avoid removal of snags and conifers with basal hollows, crown deformities, and/or limbs over 6 inches in diameter.
15. Active Nests (FP-18): Nests with eggs and/or chicks would be avoided: contact a biologist, land planner or the Avian Protection Program manager for further guidance.

MM BIO-3 California Tiger Salamander (Hot Zone-6) Limit activities to foot access only when working off of established roadways unless a biological monitor flags off-road access routes for equipment that minimize impacts on habitat and species.

MM BIO-4 Patterson Run (Wetland-2) Identify wetlands, ponds, and riparian areas and establish buffers. Maintain a buffer of 50 feet around wetlands, ponds, and riparian areas. If maintaining the buffer is not possible because the areas are either in or adjacent to facilities, the field crew would implement other measures as prescribed by the biologist or HCP administrator to minimize impacts. These measures include flagging access, requiring foot access, restricting work until the dry season, requiring a biological monitor during the activity, or excavating burrows in ROWs where trenching will occur. Activities must maintain the downstream hydrology to the wetland, pond, or riparian area. Additional minimization measures may be implemented with prior concurrence from USFWS.

MM BIO-5 Best Management Practices Even though the project is not a covered activity under the Bay Area Incidental Take Permit (BAITP), project owner shall follow applicable measures, including the following:

1. Education Program (ITP 5.4): Project owner shall conduct an education program for all persons employed or otherwise working in the project area before performing any work. The program shall consist of a presentation from the DB or General Biological Monitor that includes a discussion of the biology and general behavior of special-status species with the potential to occur, information about the distribution and habitat needs of special-status species, sensitivity of special-status species to human activities, its status pursuant to CESA including legal protection, recovery efforts, and penalties for violations. Project owner shall provide interpretation for non-English speaking workers, and the same instruction shall be provided to any new workers before they are authorized to perform work in the project area. Upon completion of the education program, employees or contractors shall sign a form or equivalent acknowledging that they attended the program and

understand all protection measures. This training shall be repeated at least once annually for long-term and/or permanent employees or contractors that would be conducting work in the project area.

2. Trash Abatement (ITP 5.6): Project owner shall initiate a trash abatement program before starting project activities and shall continue the program for the duration of the project. Project owner shall ensure that trash and food items are contained in animal-proof containers and removed, ideally at daily intervals but at least once a week, to avoid attracting opportunistic predators such as ravens, coyotes, and feral dogs.
3. Prohibition of Firearms (ITP 5.8): Firearms and domestic dogs shall be prohibited in each Work Area as well as from site access routes during construction and development of the project, except those firearms and domestic dogs that are in the possession of authorized security personnel or local, state, or federal law enforcement officials.
4. Erosion Control (ITP 5.9): Project owner shall implement and install all erosion and sediment control measures and devices prior to conducting project activities that include grading, excavation, or placement of fill. Project owner shall utilize erosion control measures where sediment runoff from exposed slopes or surfaces could enter a drainage, stream, wetland or pond. Project owner shall repair and/or replace ineffective measures or contrivances whose integrity has been compromised immediately.
5. Work Area Access (ITP 5.13): To the extent practicable, project related personnel shall access a Work Area using existing routes, and shall not cross special-status species' habitat outside of or en route to a Work Area. Project owner shall restrict project-related vehicle traffic to established roads, staging, and parking areas to the maximum extent practicable. Project owner shall ensure that vehicle speeds do not exceed 15 miles per hour to avoid special-status species on or traversing the roads.
6. Staging Areas (ITP 5.14): Project owner shall confine all project-related parking, storage areas, laydown sites, equipment storage, and any other surface-disturbing activities to a Work Area using, to the extent possible, previously disturbed areas. No staging areas shall be located in chaparral or scrub habitats, over rock outcroppings or within 300 feet of a stock pond or vernal pool.
7. Equipment Fueling (ITP 7.1): No vehicles or heavy equipment will be refueled within 100 feet of a wetland, stream, or other waterway, or within ~~250 feet of vernal pools~~, unless secondary containment is used. The fueling operator must always stay with the fueling operation. Tanks may not be topped off. If refueling must be conducted closer to **the waterway**, construct a secondary containment area subject to review by an environmental field specialist and/or biologist. Project owner shall maintain spill prevention and cleanup equipment in refueling areas. Sufficient spill

containment and cleanup equipment shall be present at all mobile, temporary, and permanent equipment fueling locations.

8. Lighting (ITP 7.2): Project owner shall ensure that all artificial outdoor lighting shall be limited to lighting for safety and security, and designed using Illuminating Engineering Society's design guidelines, International Dark-Sky Association-approved fixtures, or other industry standards that address lighting impacts. Lighting above ground level shall be directed downward or inward, where consistent with safety concerns, and shielding shall be utilized, where needed, to minimize light scatter off-site. Light fixtures shall have non-glare finishes that will not cause reflective daytime glare.
9. Covered Activities Hours (ITP 7.3): Construction activities shall cease 30 minutes before sunset and shall not begin prior to 30 minutes after sunrise, to the extent practicable. Emergency night work shall be limited in extent, duration, and brightness, to the extent feasible. For project activities E9a (Reconductoring), G9 (Pipeline Lowering), G11 (Pipeline Replacement), and minor new construction, work may not occur at night during rain events in CTS habitat within 0.5 miles of known or potential breeding habitat between November 1 and April 30 unless otherwise authorized by CDFW.
10. Stored Materials Inspection (ITP 7.4): Workers shall thoroughly inspect for CTS in all construction pipe, culverts, or similar structures with a diameter of two inches or greater that are stored for one or more overnight periods before the structure is subsequently moved, buried, or capped. If during inspection one of these animals is discovered inside the structure, workers shall notify the Biological Monitors) and allow the special-status species to safely escape that section of the structure before moving and utilizing the structure or moved out of harm's way by a DB.
11. Cover or Ramp Open Excavations (ITP 7.5): Trenches or pits shall be covered or equipped with an escape ramp if left overnight in special status species modeled habitat. Crews shall inspect any trench, pit, or hole every morning prior to conducting project activities to ensure no individuals are trapped; if any animals are found staff shall contact the DB(s) to identify whether it is a special status species and if so, it shall be moved out of harm's way by the DB(s). If the animal is not a special status species, then a General Monitoring Biologist or other individual with wildlife handling experience in possession of any applicable handling permits may move it out of harm's way.
12. Soil Stockpiles (ITP 7.6): Project owner shall ensure that soil stockpiles are placed where soil would not pass into ~~wetlands or any other~~ "waters of the state," in accordance with Fish and Game Code section 5650. Project owner shall cover and protect stockpiles to prevent soil erosion, including wind and rain. Spoils and shall be placed away from chaparral habitat, rock outcroppings, and concentrated ground squirrel, pocket gopher, or other

small mammal burrows or habitat features suitable for use by the special status species as refugia habitat.

13. Screen or Cap Hollow Pipes or Posts (ITP 7.7): All hollow pipes or posts that are installed as part of project activities, or encountered in a Work Area that the project owner owns or is responsible for, that are above ground shall be capped, screened, or filled with material by the project owner prior to the end of the day in which installation occurs.
14. Equipment Inspection (ITP 7.8): Workers shall inspect for special status species under vehicles and equipment before the vehicles and equipment are moved. If a special status species is present, the worker shall notify the Biological Monitors and wait for the special status species to move unimpeded to a safe location.
15. No Barriers to Covered Species Movement (ITP 7.9): Project owner shall construct access routes such that there are no steep curbs, v-ditches, berms, straw wattles, or dikes that could prevent special status species from traversing through ROWs or from exiting roadways. If curbs/berms/straw wattles are necessary for safety and/or surface runoff, project owner shall design and construct them to allow special status species to move over them. Project owner shall modify or remove exclusion fencing at the request of Biological Monitors or CDFW staff that may impede special status species movements.

MM BIO-6 California Tiger Salamander Specific Conditions

1. California Tiger Salamander Pre-Activity Clearance Surveys (ITP 7.11): When project activities will result in ground disturbance in potential CTS aquatic habitat (seasonal or perennial), the DB(s) shall perform a pre-activity clearance survey no more than 14 days prior to the start of project activities. If project activities will be conducted within 500 meters of a known or suspected CTS breeding pond that will result in displacement of soil to a depth of 3-inches or greater and over an area of 0.1 acres or greater, the DB(s) shall perform a pre-activity clearance survey no more than 14 days prior to the start of project activities. For project activities E9a (Reconductoring), G9 (Pipeline Lowering), G11 (Pipeline Replacement), and E14 (Minor Substation Expansion) in modeled habitat, the DB(s) shall also conduct a pre-activity clearance survey. If a California tiger salamander in any life stage (adult, metamorph, larval, eggs, etc.) is encountered in a Work Area or at the recommendation of the DB, the project owner shall stop work and coordinate with CDFW to determine if take coverage is necessary. Pre-activity clearance surveys shall provide 100 percent visual coverage of a Work Area and a 50-foot buffer zone. All small mammal burrows within the Work Area and a 50-foot buffer zone shall be flagged to alert General Biological Monitors and work crews to their presence. Where feasible, an avoidance buffer of 50 feet or greater around active small mammal burrows

shall be maintained. The DB(s) shall submit a report documenting the results of the pre-construction surveys to CDFW within five days after performing the surveys. If any California tiger salamander are found within the Work Area or 50-foot buffer zone, the project owner shall stop work and coordinate with CDFW to determine if take coverage is necessary.

2. California Tiger Salamander Protection during Upland Movements or Exclusion Fencing (ITP 7.14): Project owner shall implement the following additional protective measures for Covered Activities E9a (Reconductoring), G9 (Pipeline Lowering), G11 (Pipeline Replacement), and E14 (Minor Substation Expansion), as well as E15 (Underground Line Construction) when the activity occurs outside of existing roadways or urban areas, in CTS habitat within 0.5 mile of known or potential breeding habitat between November 1 and April 30:

    a. 7.14.1. Project owner shall not conduct project activities at night during rain events unless otherwise authorized by CDFW. The following day, crews will check for CTS around tires, equipment, and materials before resuming work. If a CTS is found, the project owner shall stop work and coordinate with CDFW to determine if take coverage is necessary.

    b. 7.14.2. Prior to a rain event of 0.25 inches or greater within a 24-hour period, project owner shall install exclusion fencing around the perimeter of Work Areas to prevent CTS movement into the Work Areas. Installation of the exclusion fence shall be overseen and directed by the DB(s). The exclusion fence shall be buried a minimum of 4 inches below ground surface and equipped with one-way exits (if the Work Area still has burrows and has not been cleared of CTS) to avoid entrapment of CTS and other amphibians or reptiles within the fenced area. For every 100 feet of exclusion fencing, project owner shall provide coverboards to provide shelter for CTS.

    c. 7.14.3. The exclusion fence shall be supported sufficiently to maintain its integrity under all conditions, such as wind and heavy rain, for the duration of the project activities in the Work Area being fenced. The DB(s) shall inspect the completed fencing prior to construction. General Biological Monitors shall check the exclusion fence at least once daily and maintain/repair the fence when necessary. Project owner shall install temporary exclusion fencing in a sequential manner that corresponds to the progression of project activities as specified above within a Work Area. When exclusion fencing is not required to be installed simultaneously throughout a Work Area then it shall be installed for only the portion of a Work Area that is under active construction and removed immediately after the construction has ceased to prevent substantial impediments to CTS movement.

3. Discovery of California Tiger Salamander in Work Area(s) (ITP 7.15): If a CTS, including body parts, is found by any person in a Work Area before or

during project activities, project owner shall stop all work when safe to do so that could potentially injure CTS immediately and coordinate with CDFW to determine if take coverage is necessary.

Additional Staff Recommended Mitigation Measures

MM BIO-7 General Impact Avoidance and Minimization Measures

1. Invasives: seed mixtures/straw used within natural vegetation will be either rice straw or weed-free straw. Clean all vehicles, equipment, clothing, etc. of material potentially containing noxious weeds/seeds prior to entering and exiting work locations. Cleaning can be accomplished by brushing, washing, or blowing with compressed air.
2. Herbicides: herbicides will be applied in a manner to avoid drift, will be stored and transported in a manner to prevent spilling, and will be applied to target species only. Applications must not be made immediately prior to or immediately following rain.
3. Wildlife Handling: no wildlife or plant species will be handled or removed from activity areas without PG&E approval, in coordination with CDFW and/or USFWS, if applicable.
4. Dead or Injured Listed Species: personnel will be required to report any accidental death or injury of a listed species or the finding of any dead or injured listed species to a qualified biologist. Notification of CDFW and/or USFWS of any accidental death or injury of a listed species shall be done in accordance with standard reporting procedures.
5. Consistent with APLIC Guidelines: generation tie-line and all associated components shall be designed, installed, and maintained in accordance with the Avian Power Line Interaction Committee's (APLIC's) Suggested Practices for Avian Protection on Power Lines (APLIC 2006) and Reducing Avian Collisions with Power Lines (APLIC 2012), or most recent APLIC guidance, to reduce the likelihood of large bird electrocutions and collisions.

MM BIO-8 Special-Status Plants Prior to the start of ground disturbance activities, a qualified biologist knowledgeable on the identification of rare plant species, including big tarplant, shall conduct a pre-construction plant survey of areas proposed disturbance and within a 100-foot buffer (where legally accessible) timed during the appropriate blooming period of the survey season immediately prior to construction to determine if any special-status plant species are present. If special-status plants are identified on-site, environmentally sensitive area fencing and appropriate signage should be installed at a minimum of ~~20~~ **50** feet from the edge of the population. The locations shall be mapped and PG&E shall confer with CDFW or USFWS as required by applicable law to avoid take of state or federally listed species. **If a smaller buffer is necessary due to other site-specific constraints, the project owner, in coordination with the DB**

or qualified botanist shall develop and implement site-specific protection measures, such as monitoring, to avoid the impacts to the species, if possible. The measure shall be subject to approval from PG&E, in consultation with CDFW.

MM BIO-9 San Joaquin Kit Fox, American Badger, Burrowing Owl Within 15 days prior to any habitat modification, a qualified biologist knowledgeable in the identification of all special-status wildlife species shall conduct a pre-construction survey of areas proposed for disturbance within work areas and 500-foot buffer (where legally accessible) to determine if any special-status species are present. If, as a result of this pre-construction survey it is determined that San Joaquin kit fox, American badger or burrowing owl are present, the following measures shall be implemented:

1. If signs of burrowing owl are identified on-site, CDFW shall be notified to determine if take coverage is necessary, and appropriate buffers shall be established to limit all construction activities. Buffers for burrows shall be as follows:

Location	Time of Year	Level of Disturbance		
		Low	Med	High
Nesting Sites	April 1–Aug 15	656 feet	1640 feet	1640 feet
Nesting Sites	Aug 16–Oct 15	656 feet	656 feet	1640 feet
Nesting sites	Oct 16–Mar 31	164 feet	328 feet	1640 feet

2. If a potential San Joaquin kit fox or American badger den is discovered, or a fox or badger is found in an "atypical" den such as a pipe or culvert, the qualified biologist shall establish a 50-foot buffer. If a known kit fox or badger den (one that shows evidence of current use or is known to have been used in the past) is discovered, a buffer of at least 100 feet shall be established using fencing. If a natal den is discovered, it shall be fenced and avoided in a buffer with a diameter of at least 200 feet. The qualified biologist shall notify CDFW and/or USFWS. Buffer zones shall be considered environmentally sensitive areas, and entry shall be restricted. If required buffers are not possible to protect the species, then CDFW and/or USFWS would be consulted to determine the need for take authorization through the acquisition of an incidental take permit, pursuant to Fish and Game Code section 2081 subdivision (d) and appropriate USFWS permit.

MM BIO-10 Swainson's Hawk If project activities, including site mobilization and construction, are scheduled during the nesting season for Swainson's hawks (March 1 to September 15), prior to beginning work on the project, a qualified biologist shall conduct surveys according to the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (SHTA 2000) and prepare a report documenting the survey results. Surveys shall be conducted: 1) within a minimum 0.5-mile radius of the project site or a larger area if needed to identify potentially impacted active nests, unless otherwise

approved by the PG&E in writing, and 2) for at least the two survey periods immediately prior to initiating project-related construction activities. Surveys shall occur annually for the duration of the project.

If active Swainson's hawk nests are detected, the qualified biologist shall immediately notify CDFW and implement a 0.5-mile construction avoidance buffer around the nest until the nest is no longer active as determined by the qualified biologist, unless otherwise approved by PG&E in writing. Any detected nesting Swainson's hawk shall be monitored by the qualified biologist to ensure it is not disturbed during construction activities, unless otherwise approved in writing by PG&E. If work within the 0.5-mile buffer cannot be avoided the project owner shall consult with PG&E to avoid any potential for unauthorized take for Swainson's hawk without incidental take authorization.

MM BIO-11 Golden Eagle If work occurs during the golden eagle nesting season (December 15 to August 31), a qualified biologist shall conduct surveys within a 1-mile radius no more than 30 days before starting activities. The qualified biologist shall submit protocol-level survey methodologies to PG&E for review and approval at least thirty (30) days prior to the start of surveys. It is recommended that the qualified biologist coordinates with the USFWS to discuss implementation of golden eagle monitoring protocol so as to minimize duplicate efforts by others in the area. If eagles or active nests are found within 1 mile, work may only proceed after a USFWS approved mitigation plan is established.

MM BIO-12 Nesting Bird Surveys Prior to Construction and Bird Buffers Where scheduling allows, the clearing or removal of any vegetation, or other project-related activities that may adversely affect breeding birds shall occur outside the nesting season. If work occurs during nesting bird season (generally February 1 through August 31) pre-construction nesting bird surveys shall be conducted at least two weeks prior to work commencing, including staging, clearing and grubbing, the qualified biologist shall survey a sufficient area around the work site to identify any nests that are present and determine their status. The qualified biologist shall establish an adequate buffer around all active nests prior to the start of construction. Once construction work begins, the survey effort shall continue to ensure any nest starts established after the work commences are identified and adequate buffers applied. 'Sufficient' in the context of this condition means any nest within an area that could potentially be affected by the project. In addition to direct impacts, such as nest destruction, nesting birds might be affected by noise, vibration, odors and movement of workers or equipment. Identified active nests shall be continuously monitored during daylight hours for 24 hours immediately prior to any construction-related activities to establish a behavioral baseline of the adults and any nestlings. Once work commences, all active nests shall be monitored by the qualified biologist to detect any signs of disturbance and behavioral changes as a result of the project

and the buffers adjusted as appropriate or construction activities shall cease until the young have fledged.

Bird Buffers: The DB(s) and/or the Biological Monitor shall establish the following minimum no-disturbance buffers around active nests: 150 feet for species such as passerines, 500 feet for raptors such as buteos and accipiters and 0.25 miles for eagles. These buffers shall remain in place until the breeding season has ended or until the DB and/or Designated Monitor has determined that the birds have fledged and are no longer reliant upon the nest or on-site parental care for survival.

MM BIO-13 Biological Monitor During Construction A biological monitor will be onsite during ground disturbing activities, or other activities with the potential to impact sensitive biological resources, in order to minimize impacts to sensitive biological resources. Before the start of work each morning, the biological monitor would check under all equipment and stored supplies left in the work area overnight near suitable habitat for listed species with a potential to occur in the area. The monitor would have the authority to stop work or determine alternative work practices in consultation with agencies and construction personnel, as appropriate, if construction activities are likely to impact sensitive biological resources. The biological monitor would document monitoring activities in a daily log summarizing construction activities and environmental compliance.

MM BIO-14 California Red-Legged Frog A qualified biologist will conduct pre-construction surveys prior to ground disturbing activities. If individuals are found, work would not begin until USFWS and CDFW are consulted. The DB and/or Biological Monitor would be present for all ground disturbing activities. Barrier fencing would be constructed around the worksite to prevent amphibians from entering the work area and will be removed within 72 hours of completion of work. No monofilament plastic will be used for erosion control. All open trenches would be inspected each morning and evening for trapped amphibians. Work would be avoided within suitable habitat from October 15 (or the first measurable rainfall of 1" or greater) to May 1.

MM BIO-15 Crotch's Bumble Bee A PG&E and CDFW approved biologist shall conduct pre-construction surveys and daily monitoring for Crotch's bumble bee in all project areas, following CDFW non-invasive protocols. Prior to ground disturbance, the project owner must submit a Mortality Reduction and Relocation Plan to PG&E and CDFW for approval. This plan will detail survey methodology, habitat mapping, and specific protocols for nest relocation and minimizing impacts to foraging or overwintering bees. If bees or nests are detected, the qualified biologist shall coordinate with agencies to implement avoidance measures to avoid take.

MM BIO-16 Western Spadefoot A qualified biologist shall complete pre-construction surveys within 48 hours prior to initiating construction and during the appropriate season (approximately February 1 through March 30). The qualified biologist shall submit the results to PG&E prior to starting construction. In the unanticipated event that western spadefoot are discovered on site, a qualified biologist shall develop a relocation plan and submit it to PG&E for review and approval. Western spadefoots shall be relocated to the nearest available suitable habitat at least 250 feet away from the project site to minimize the potential for spreading disease. Relocation may only be conducted by a qualified biologist with all appropriate permits.

MM BIO-17 Coast Horned Lizard and San Joaquin Coachwhip A qualified biologist shall conduct pre-construction surveys within 48 hours prior to initiating project activities, the qualified biologist shall survey the construction site for coast horned lizard and San Joaquin coachwhip, including any and all rock outcrops and mammal burrows and any other potential habitat features. If coast horned lizards and/or San Joaquin coachwhips are found, they shall be allowed to leave the site before construction begins. Coast horned lizards and/or San Joaquin coachwhips may be moved "out of harm's way" to the nearest safe and suitable habitat at least 250 feet away from the project site by the qualified biologist with all appropriate permits.

MM BIO-18 Monarch Butterfly No more than 2 days prior to the initiation of site mobilization and/or construction-related vegetation trimming or removal, the applicant shall ensure that a qualified biologist and/or Biological Monitor surveys all areas of potentially suitable habitat for monarch butterfly larval host plants. If host plants are found, the DB shall survey all host plants for monarch eggs, larvae, and pupae. If no eggs, larvae, or pupae are found, plants may be removed within 2 days with approval from the PG&E. If eggs, larvae, or pupae are present, host plants shall be protected in place until the qualified biologist has determined that the breeding season has concluded, or coordination with the PG&E and USFWS occurs. It is recommended, to the extent feasible, that that milkweed removal should be avoided until after the plant has gone to seed.

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5.3 Climate Change and Greenhouse Gas Emissions

This section describes the environmental and regulatory setting and potential impacts caused by the proposed project greenhouse gas (GHG) emissions. Unlike emissions of criteria and toxic air pollutants, which have regional and localized impacts, GHG emissions relate to the broader impact of global climate change.

Components of the proposed Potentia-Viridi BESS facility that are within the CEC's Opt-In certification include the containerized BESS, the power conversion system, medium voltage collection system, three operations and maintenance (O&M) buildings, a project substation/control building, approximately 1,600-feet of gen-tie line and transmission structure, as well as ancillary laydown yards, fencing, etc. Components of the proposed project outside the CEC's Opt-In certification include an approximately 1,300-foot segment of the gen-tie line and associated fiber line, two "H"-frame transmission tower structures and related conductors, a substation bay dead-end transmission structure, and expansion of a 500 kilovolt (kV) breaker-and-a-half with a new circuit breaker, within the Tesla Substation, to be constructed and owned by PG&E.

5.3.1 Environmental Setting

Existing Conditions

Physical Setting and Effects of GHG Emissions. The global climate depends on the presence of naturally occurring greenhouse gases (GHG) to provide what is commonly known as the "greenhouse effect" that allows heat radiated from the Earth's surface to warm the atmosphere. The greenhouse effect is driven mainly by water vapor, aerosols, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and other constituents. Globally, the presence of GHG affects temperatures, precipitation, sea levels, ocean currents, wind patterns, and storm activity.

Human activity directly contributes to emissions of six primary anthropogenic GHGs: CO_2, CH_4, N_2O, fluorinated gases (F-gases) (hydrofluorocarbons [HFCs], perfluorocarbons [PFCs], and sulfur hexafluoride [SF_6]). The standard definition of anthropogenic GHG includes these six substances under the 1997 Kyoto Protocol (UNFCCC 1998). The most important and widely occurring anthropogenic GHG is CO_2, primarily from the use of fossil fuels as a source of energy.

Each GHG has its own potency and effect upon the Earth's energy balance, expressed in terms of a global warming potential (GWP), with CO_2 being assigned a value of one (1.0). Specifically, the GWP is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given time relative to the emissions of 1 ton of CO_2. The larger the GWP, the more that a given gas warms the Earth compared to CO_2 over that time. The time usually used for GWPs is 100 years. The F-gases are sometimes called high-GWP gases because, for a given amount of mass, they trap substantially more heat than CO_2. The GWPs for these gases can be in the thousands or tens of thousands. The carbon

dioxide equivalent (CO_2e) mass emission rate for a source is obtained by multiplying the mass of each GHG by the assigned GWP for that compound and then adding the results of this product together to obtain a single, mass emission rate in terms of CO_2e that represents the combined effects of the GHGs.

Changing temperatures, precipitation, sea levels, ocean currents, wind patterns and storm activity provide indicators and evidence of the effects of climate change. For the period 1950 onward, relatively comprehensive data sets of observations are available. Research by California's Office of Environmental Health Hazard Assessment (OEHHA) reports certain climate change indicators by categorizing the effects as: changes in California's climate; impacts to physical systems including oceans, lakes, rivers, and snowpack; and impacts to biological systems including humans, vegetation, and wildlife. The primary observed changes in California's climate include increased annual average air temperatures, more-frequent extremely hot days and nights, and increased severity of drought. Impacts to physical systems affected by warming temperatures and changing precipitation patterns show decreasing snowmelt runoff, shrinking glaciers, and rising sea levels. Impacts to terrestrial, marine, and freshwater biological systems, with resulting changes in habitat, agriculture, and food supply are occurring in conjunction with the potential to impact human well-being (OEHHA 2022).

California Emissions Inventory. California is a contributor to global GHG emissions. The total gross California GHG emissions in 2022 were 371.1 million metric tons of CO_2-equivalent ($MMTCO_2e$) (CARB 2024). The largest category of GHG emissions in California is transportation, followed by industrial activities and electricity generation in state and out of state. In 2015, the Bay Area's GHG emissions were about 85 $MMTCO_2e$ with the category sizes duplicating the state-wide emissions (BAAD 2017a).

In 2022, the total gross U.S. greenhouse gas emissions were 6,343 $MMTCO_2e$, or 5,489 $MMTCO_2e$ after accounting for sequestration from the land sector (U.S. EPA 2024). Nationwide GHG emissions in 2022 rebounded from 2020 levels that were lower than 2019 because of a sharp decline due to the impacts of the coronavirus (COVID-19) pandemic on fossil fuel combustion, related to travel and economic activity (CARB 2024, U.S. EPA 2024).

Decarbonization of California's Electricity Sector. The electricity sector in California has achieved substantial GHG emissions reductions through renewable and zero-carbon energy deployment. Moving forward, a clean, affordable, and reliable electricity grid will serve as a backbone to support deep decarbonization across California's economy. Decarbonizing the electricity sector is a crucial pillar of achieving carbon neutrality, and CARB anticipates that the role of electricity in powering the economy will continue to grow while electric loads increase (CARB 2022).

California continues to add zero-carbon energy resources to replace fossil-fuel generation and support growing demand. Moving to zero-carbon resources is critical to reducing GHG emissions and addressing the long-term impacts of climate change (CEC 2022). Renewable and zero-carbon sources of energy do not operate on-demand like traditional

fossil fuel power plants. The growth of zero-carbon resources, especially solar resources, has shifted the reliability concerns from the peak hour (hour with the highest energy demand) to net peak hours (hours when energy demand minus wind and solar generation is largest). As solar capacity has grown in recent years, net peak has shifted to later in the day. Wind generation late in the day aids in meeting the shift to a later net peak (CEC 2022).

Peak demand times require dispatching generation plants with different fuels, and generation resources in the state are diverse. Wind and solar generation are part of the supply on most days. While the electricity sector is using less fossil fuel due to increasing amounts of renewables, existing fossil-fuel natural gas-fired generation will continue to play a critical role in grid reliability until other clean, dispatchable alternatives can be deployed at scale. Presently, fossil-fuel natural gas-fired power plants provide about 75 percent of the flexible capacity for grid reliability. As more renewable power enters the system, other resources such as storage and demand-side management are essential to maintain reliability with high concentrations of renewables (CARB 2022).

Regulatory

Federal

There are no federal laws, ordinances, regulations, and standards (LORS) related to GHGs that would apply to the project.

State

California Global Warming Solutions Act of 2006. In 2006, the state Legislature passed the California Global Warming Solutions Act of 2006 (Assembly Bill 32, Núñez, Chapter 488, Statutes of 2006), codified as Health and Safety Code, section 38500 et seq., which provided the initial framework for regulating GHG emissions in California. This law required CARB to design and implement GHG emissions limits, regulations, and other measures such that statewide GHG emissions are reduced in a technologically feasible and cost-effective manner to 1990 levels by 2020. AB 32 also required CARB to implement a mandatory GHG emissions reporting program for major sources, which includes electricity generators, industrial facilities, fuel suppliers, and electricity importers.

CARB Scoping Plan. Part of the Legislature's direction to CARB under AB 32 was to develop a scoping plan that serves as a statewide planning document to coordinate the main strategies California will use to reduce GHG emissions that cause climate change. CARB approved the AB 32 Climate Change Scoping Plan (Scoping Plan) in 2008 and released updates in 2014, 2017, and 2022. The CARB's Scoping Plan includes a range of GHG emissions reduction actions, which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based compliance mechanisms, such as the cap-and-trade program. In December 2007, CARB set the statewide 2020 emissions limit, defined as reducing emissions to 1990 levels, at 427 $MMTCO_2e$. The 2014 Scoping Plan adjusted the 1990

emissions estimate and the statewide 2020 emissions limit goal to 431 $MMTCO_2e$ (CARB 2014). The 2017 Scoping Plan (CARB 2017a) demonstrates the approach necessary to achieve California's 2030 target, which is to reduce GHG emissions 40 percent below 1990 levels to 260 $MMTCO_2e$. On November 16, 2022, CARB published the 2022 Scoping Plan for Achieving Carbon Neutrality (CARB 2022), which lays out a path to achieve targets for carbon neutrality by 2045.

Executive Order B-30-15. On April 29, 2015, former Governor Brown issued Executive Order B-30-15, directing state agencies to implement measures to reduce GHG emissions 40 percent below their 1990 levels by 2030 and to make it possible to achieve the previously stated goal of an 80 percent GHG emissions reduction below 1990 GHG emissions by 2050 (CARB 2017a).

Statewide 2030 GHG Emissions Limit. On September 8, 2016, SB 32, codified as Health and Safety Code, section 38566, extended California's commitment to reduce GHG emissions by requiring the state to reduce statewide GHG emissions by 40 percent below 1990 levels by 2030 (CARB 2017a).

Renewable Energy Programs. In 2002, California initially established the Renewables Portfolio Standard (RPS) with the goal of increasing the percentage of renewable energy in the state's electricity mix to 20 percent by 2017. State energy agencies recommended accelerating that goal, and former Governor Schwarzenegger's Executive Order S-14-08 (November 2008) required California utilities to reach the 33 percent renewable electricity goal by 2020, consistent with the CARB's 2008 Scoping Plan. In April 2011, Senate Bill X1-2 (Simitian, Chapter 1, Statutes of 2011) of the First Extraordinary Session was signed into law. SB X1-2 expressly applied the 33 percent RPS by December 31, 2020, to all retail sellers of electricity and established renewable energy standards for interim years prior to 2020.

- Clean Energy and Pollution Reduction Act (Senate Bill 350, De León, Chapter 547, Statutes of 2015): Beginning in 2016, SB 350 took effect declaring it the intent of the Legislature to acknowledge Governor Brown's clean energy, clean air and greenhouse gas emissions reduction goals for 2030 and beyond. SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030.
- The 100 Percent Clean Energy Act of 2018 (Senate Bill 100, De León, Chapter 312, Statutes of 2018): Beginning in 2019, the RPS deadlines advanced to 50 percent renewable resources by December 31, 2026, and 60 percent by December 31, 2030. In addition, SB 100 establishes policy that renewable energy resources and zero carbon resources supply 100 percent of all retail sales of electricity by December 31, 2045.
- Clean Energy, Jobs, and Affordability Act of 2022 (Senate Bill 1020, Laird, Chapter 361, Statutes of 2022): Accelerates the timelines set forth in SB 100 to provide that eligible renewable energy resources and zero-carbon resources supply 90 percent of all retail sales of electricity to California end-use customers by December 31, 2035,

95 percent of all retail sales of electricity to California end-use customers by December 31, 2040, 100 percent of all retail sales of electricity to California end-use customers by December 31, 2045, and 100 percent of electricity procured to serve all state agencies by December 31, 2035, as specified.

Short-Lived Climate Pollutant Strategy. To best support the reduction of GHG emissions consistent with AB 32, CARB released the Short-Lived Climate Pollutant (SLCP) Strategy, under Health and Safety Code, section 39730, in March 2017. Health and Safety Code, section 39730, defined SLCPs as having lifetimes in the atmosphere ranging from "a few days to a few decades." Then beginning in 2017 under Health and Safety Code, section 39730.5, CARB was directed to set targets to reduce SLCP emissions 40 percent below 2013 levels by 2030 for CH_4 and HFCs and 50 percent below 2013 levels by 2030 for anthropogenic black carbon (CARB 2017b). The SLCP Strategy was integrated into the 2017 update to CARB's Scoping Plan.

To help meet the HFC reduction goal, California adopted Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Stationary Air-conditioning and Other End-Uses (California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 10 Climate Change, Article 4, Subarticle 5, Sections 95371, et seq.). The prohibited HFCs and their respective effective dates are listed in the regulation. In addition, on September 30, 2022, the Governor approved SB 1206, which would prohibit a person from offering for sale or distribution, or otherwise entering into commerce in the state, bulk HFCs or bulk blends containing HFCs that exceed the GWP limit of 2,200 beginning January 1, 2025, and lower GWP limits beginning January 1, 2030, and January 1, 2033. The bill does not restrict the authority of CARB to establish regulations lowering the maximum allowable GWP limits below the limits established by the bill.

Senate Bill SB 375. The Sustainable Communities and Climate Protection Act of 2008 (SB 375), signed in August 2008, enhances the state's ability to reach AB 32 goals by directing CARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles by 2020 and 2035. SB 375 aligns regional transportation planning efforts, regional GHG reduction targets, and affordable housing allocations. Metropolitan Planning Organizations (MPO) are required to adopt a Sustainable Communities Strategy (SCS), which allocates land uses in the MPO's Regional Transportation Plan (RTP). Qualified projects consistent with an approved SCS or Alternative Planning Strategy (categorized as "transit priority projects") can receive incentives to streamline CEQA processing.

On March 22, 2018, CARB adopted updated regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. The Metropolitan Transportation Commission and Association of Bay Area Governments (MTC & ABAG) are jointly responsible for developing and adopting an SCS that integrates transportation, land use, and housing and were assigned targets of a 10 percent reduction in per capita GHG emissions from passenger vehicles by 2020 and a 19 percent reduction in per capita GHG emissions from passenger vehicles by 2035 (CARB 2018). MTC & ABAG is the regional planning agency for Alameda, Contra Costa, Marin, Napa, San Francisco,

San Mateo, Santa Clara, Solano, and Sonoma counties and develops long-range regional transportation plans, including a sustainable communities strategy and a growth forecast, regional transportation improvement programs, regional housing needs allocations, and economic development. MTC & ABAG most recently prepared the 2021 Regional Transportation Plan/Sustainable Communities Strategy (Plan Bay Area 2050) for the region which aligns with a portion of the Bay Area Air District's (BAAD) Clean Air Plan (BAAD 2017b). Plan Bay Area 2050 quantifies a 20 percent reduction by 2035 (MTC & ABAG 2021).

In 2022, CARB accepted MTC & ABAG's quantification of GHG reductions and its determination the SCS, if implemented, would achieve CARB's targets. Project consistency with the 2021 RTP/SCS would therefore support AB 32 and SB 32 GHG reduction goals. An updated 2025 RTP/SCS, Plan Bay Area 2050+, (MTC & ABAG 2025) is being developed by MTC & ABAG. Plan Bay Area 2050+ will evaluate the Plan Bay Area 2050 strategies through a post-COVID pandemic lens.

Executive Order B-55-18. On September 10, 2018, the same day he signed SB 100 into law, former Governor Brown issued Executive Order B-55-18 to achieve carbon neutrality, stating the governor's intention "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. This goal is in addition to the existing statewide targets of reducing greenhouse gas emissions." From the 2020 GHG limit of 431 $MMTCO_2e$, California will need to reduce statewide emissions another 170 million tons to meet its 2030 statutory target of 260 million tons per year (40 percent below 1990 levels). The state would need to cut annual emissions by a further 175 million tons to meet its 2050 goal (set by executive order) of 85 million tons per year (80 percent below 1990 levels).

Reducing SF_6 Emissions from Gas Insulated Switchgear. In early 2011, CARB adopted a regulation (Cal. Code Regs., tit. 17, §§ 95350 to 95359) to reduce SF_6 emissions in gas insulated switchgear used in the electricity sector's transmission and distribution system as an early action measure pursuant to AB 32. SF_6 is an extremely powerful and long-lived GHG. The 100-year GWP of SF_6 is 22,800 (from IPCC Fourth Assessment Report), making it the most potent of the six main GHGs, according to the U.S. EPA. Because of its extremely high GWP, small reductions in SF_6 emissions can have a large impact on reducing GHG emissions, which are the main drivers of climate change. The regulation requires gas insulated switchgear owners to report SF_6 emissions annually and requires reducing losses of SF_6 over time, subject to annual emission rate limits. The maximum allowable emission rate started at 10 percent in 2011 and has decreased one percent per year since then. The limit reached one percent in 2020 and remained at that level going forward. However, data show that statewide SF_6 capacity is growing by one to five percent per year, which would increase the expected SF_6 emissions. In response to emerging technologies using lower or zero GWP insulators, CARB amended the regulation (Cal. Code Regs., tit. 17, §§ 95350 to 95359.1) in 2021 to further reduce GHG emissions from gas-insulated equipment (GIE). Key provisions of the amended regulation include a phase-out schedule in stages

between 2025 and 2033 for new SF_6 GIE, coverage of other GHG beyond SF_6 used in GIE, and other changes that enhance accuracy of emissions accounting and reporting.

The California Climate Crisis Act (Assembly Bill 1279). Assembly Bill 1279 (Muratsuchi, Chapter 337, Statutes of 2022) establishes the policy of the state to achieve carbon neutrality as soon as possible, but no later than 2045; to maintain net negative GHG emissions thereafter; and to ensure that by 2045 statewide anthropogenic GHG emissions are reduced by at least 85 percent below 1990 levels. The bill requires CARB to ensure that Scoping Plan updates identify and recommend measures to achieve carbon neutrality, and to identify and implement policies and strategies that enable CO_2 removal solutions and carbon capture, utilization, and storage (CCUS) technologies. The CARB 2022 Scoping Plan for Achieving Carbon Neutrality (CARB 2022) plans for the 2045 target set forth by AB 1279 and Executive Order B-55-18.

California Environmental Quality Act (CEQA) Guidelines for GHG Emissions. With the enactment of Senate Bill 97 (Dutton, Chapter 185, Statutes of 2007), the Governor's Office of Planning and Research was required by July 1, 2009, to prepare, develop, and transmit to the Natural Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. Those amendments to the CEQA guidelines became effective March 18, 2010, and were subsequently updated in December 2018 to further address the analysis of GHG emissions, including the following:

- Lead agencies must analyze the GHG emissions of proposed projects. (See CEQA Guidelines, § 15064.4, subd. (a))
- The focus of the lead agency's analysis should be on the project's effect on climate change, rather than simply focusing on the quantity of emissions and how that quantity of emissions compares to statewide or global emissions. (See CEQA Guidelines, § 15064.4, subd. (b))
- The impacts analysis of GHG emissions is global in nature and thus should be considered in a broader context. A project's incremental contribution may be cumulatively considerable even if it appears relatively small compared to statewide, national, or global emissions. (See CEQA Guidelines, § 15064.4, subd. (b))
- Lead agencies should consider a timeframe for the analysis that is appropriate for the project. (See CEQA Guidelines, § 15064.4, subd. (b))
- A lead agency's analysis must reasonably reflect evolving scientific knowledge and state regulatory schemes. (See CEQA Guidelines, § 15064.4, subd. (b).)
- Lead agencies may rely on an adopted statewide, regional, or local plan in evaluating a project's GHG emissions. (See CEQA Guidelines, § 15064.4, subd. (b)(3))

- Lead agencies may analyze and mitigate the significant impact of GHG emissions as part of a larger plan for the reduction of greenhouse gases. (See CEQA Guidelines, § 15183.5, sub. (a))
- A project's incremental contribution to a cumulative GHG emissions effect may be determined not to be significant and the effects of the project to not be cumulatively considerable if the project complies with the requirements of the GHG emissions reduction strategy. (See CEQA Guidelines, §§ 15064, sub. (h)(3); 15130, sub. (d); 15183, sub. (b))
- In determining the significance of a project's impacts, the lead agency may consider a project's consistency with the state's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is consistent with those plans, goals, or strategies. (See CEQA Guidelines, § 15064.4, subd. (b)(3))
- The lead agency has discretion to select the model or methodology it considers most appropriate to enable decision makers to intelligently account for the project's incremental contribution to climate change. (See CEQA Guidelines, § 15064.4, subd. (c).)

Regional

BAAD Regional Climate Plan Initiative. To reduce the Bay Area's contributions to global climate change and create a healthier breathing environment, BAAD is creating a regional climate action plan. BAAD has received funding from the U.S. Environmental Protection Agency to develop the regional climate action plan for the Northern and Central Bay Area region including Alameda County. This process will leverage this funding and the extensive ongoing climate work being done at the local level across the region to develop a set of feasible, actionable, and broadly supported strategies to respond to a changing climate.

The current phase focuses on developing a Comprehensive Climate Action Plan with measures to reduce greenhouse gas (GHG) emissions across all sectors of the economy in a way that benefits frontline communities which bear the brunt of the impacts from fossil fuel dependence and often experience the most immediate and worst impacts of climate change. The U.S. EPA refers to the frontline communities as low-income and disadvantaged. The timeline for the Comprehensive Climate Action Plan indicates that the plan is finalized and submitted to U.S. EPA in Fall 2025 (BAAD 2025).

2017 Bay Area Clean Air Plan. BAAD adopted the 2017 Bay Area Clean Air Plan on April 19, 2017 (BAAD 2017b). It provides a regional strategy to protect public health and protect the climate. To protect public health, the plan describes how BAAD will continue its progress toward attaining all state and federal ambient air quality standards and eliminating health risk disparities from exposure to air pollution among Bay Area communities. To protect the climate, the plan defines a vision for transitioning the region to a post-carbon economy needed to achieve ambitious GHG emissions reduction

targets for 2030 and 2050 and provides a regional climate protection strategy that will put the Bay Area on a pathway to achieving those GHG emissions reduction targets.

BAAD CEQA Guidelines. The purpose of the BAAD CEQA Guidelines is to assist lead agencies in evaluating a project's air quality and climate impacts (BAAD 2023). This document describes the criteria that BAAD uses when reviewing and commenting on the adequacy of environmental documents. It recommends thresholds of significance for determining whether a project would have significant adverse environmental impacts, identifies methodologies for predicting project emissions and impacts, and identifies measures that can be used to avoid or reduce air quality impacts. The BAAD CEQA Guidelines include methodologies for estimating GHG emissions.

The BAAD CEQA Guidelines include the project-level and plan level thresholds for climate impacts that were adopted in April 2022. The guidelines also include a bright-line threshold of significance of 10,000 $MTCO_2e$/yr for stationary sources (BAAD 2023, Section 6.4). The stationary source GHG threshold was first adopted by the BAAD Board of Directors on June 2, 2010. The BAAD staff indicates that it will reevaluate the stationary source threshold of significance as necessary to reflect substantive changes to assumptions, underlying data, analytical methodologies, state and local policies and programs, and court decisions regarding GHG emissions since June 2010 (BAAD 2023, Section 2.2.5 of Appendix A).

The Project would implement the best management practices (BMPs) recommended by BAAD in the CEQA guidance to minimize and reduce fugitive dust emissions (BAAD 2023). BMPs listed as Basic Construction Mitigation Measures in Table 5-2 in BAAD's CEQA Guidelines (BAAD 2023) would be implemented during the construction phase. Some of the measures will also reduce GHG emissions.

Diesel Free by '33. In 2018, BAAD established an initiative intended to reduce GHG and criteria pollutant emissions by eliminating petroleum use by the end of 2033. Local Bay Area agencies are encouraged to voluntarily adopt the Statement of Purpose of this initiative. Entities signing the Statement of Purpose pledge to develop their own individual strategies to achieve the goal of reaching zero diesel emissions in their communities. A representative from Alameda County has signed this agreement. Signatories to this agreement express their intent to:

- Collaborate and coordinate on ordinances, policies, and procurement practices that will reduce diesel emissions to zero within their jurisdictions, communities, or companies;
- Share and promote effective financing mechanisms domestically and internationally to the extent feasible that allow for the purchase of zero emissions equipment;
- Share information and assessments regarding zero emissions technology;
- Build capacity for action and technology adaptation through technology transfer and sharing expertise;

- Use policies and incentives that assist the private sector as it moves to diesel-free fleets and buildings; and
- Periodic reporting to all signers of progress towards the zero- diesel emissions goal.

Plan Bay Area 2050. Under the requirements of the Sustainable Communities and Climate Protection Act of 2008 (Senate Bill 375, Steinberg, Chapter 728, Statutes of 2008), all metropolitan regions in California must complete a Sustainable Communities Strategy (SCS) as part of their Regional Transportation Plan (RTP). In the Bay Area, the Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) are federally recognized metropolitan planning organization (MPO), and are jointly responsible for developing and adopting an SCS that integrates transportation, land use, and housing to meet GHG emissions reduction targets set by CARB. The Bay Area region includes Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma counties. MTC & ABAG developed the 2021 Regional Transportation Plan & Sustainable Communities Strategy, Plan Bay Area 2050, approved by the boards of MTC & ABAG on October 21, 2021. The 2021 RTP/SCS includes GHG emissions quantification for vehicle-miles traveled by automobiles and light-duty trucks in the region to achieve a GHG reduction target of 19 percent below 2005 per capita emissions levels by 2035 (MTC & ABAG 2021). The RTP/SCS lays out how the region will meet certain transportation-related GHG reduction targets while considering all economic segments of the population, population growth, household and employment growth, and the environment. (MTC & ABAG 2021). An updated RTP/SCS, Plan Bay Area 2050+, is being developed by MTC & ABAG. Plan Bay Area 2050+ will evaluate the Plan Bay Area 2050 strategies through a post-COVID pandemic lens (MTC & ABAG 2025).

Local

Alameda County Community Climate Action Plan. The County of Alameda adopted its first Community Climate Action Plan (CCAP) in 2014 that outlined strategies and measures to reduce the County's contribution to GHG emissions and align with statewide emission targets (i.e., those outlined for 2020 in AB 32). The CCAP applies to the unincorporated areas of the County and is an element of the General Plan (See below). The CCAP identifies detailed implementation steps in the following six action areas: transportation, land use, building energy, water, waste and green infrastructure and a total of 48 reduction measures across all action areas while considering environmental justice priorities. As previously mentioned, the CCAP was developed to meet the State's 2020 GHG reduction goal (Alameda County 2014). The County is currently working on an updated CCAP that would implement the reduction strategies and measures required to meet the State's 2030 and 2050 GHG reduction targets. The CCAP applies to the County agencies and municipal efforts in taking action in different areas and is not applicable to the project.

Alameda County Local Hazard Mitigation Plan. The 2021 Local Hazard Mitigation Plan (LHMP) is contained in the Safety Element of the Alameda General Plan (Alameda County 2021). The Safety Element is being updated. It was written on behalf of

Alameda County, the Alameda County Fire Department and Alameda County Flood Control and Water Conservation District. The LHMP focuses on natural hazards including climate change, dam failure, drought, earthquake, flood, infectious disease, landslide, public safety power shutoff, tsunami, and wildfire in the County unincorporated area. The plan presents a variety of actions and projects, proposed or in progress, that can help mitigate the primary risks climate change poses and also identifies the other hazards with a connection to climate change. None of the elements in the LHMP apply to the project.

Alameda County General Plan-East County Area Plan. A General Plan is a long-range policy document approved by the Board of Supervisors to guide physical, economic, and environmental growth. State law requires the County to have a General Plan which contains seven elements: Land Use; Circulation; Housing; Open Space; Conservation; Safety and Noise. The County CCAP is an element of the General Plan and the LHMP is contained in the Safety Element of the General Plan. The Project is in the East County Area and is subject to a portion of the General Plan that addresses this area (Alameda County 2002). Other than the CCAP and the LHMP, there are no specific policies related to GHG emissions or climate change in the East County Area Plan portion of the 2002 Alameda County General Plan. This part of the General Plan includes goals and policies applicable land use, transportation, public service and utilities, and environmental health and safety including air quality. However, neither climate change nor GHG emissions are addressed in this portion.

Cumulative Setting

The CEQA Guidelines indicate that the impact analysis for GHG emissions is global in nature, and the focus of the lead agency's analysis should be on the project's effect on climate change, rather than simply focusing on the quantity of emissions and how that quantity of emissions compares to statewide or global emissions. The discussion under the "Existing Conditions" subsection describes the broader context of global climate change and provides information on statewide and local emissions.

5.3.2 Environmental Impacts

CLIMATE CHANGE AND GREENHOUSE GAS EMISSIONS Would the project:	**Significant and Unavoidable Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☒	☐	☐
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☒	☐	☐

Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, greenhouse gas emissions.

5.3.2.1 Methodology and Thresholds of Significance

In addition to the above environmental checklist, CEC staff used the following methodology and thresholds of significance to evaluate the project.

Methodology

The California Emissions Estimator Model (CalEEMod Version 2022.1) was used to quantify potential GHG emissions associated with both construction and operation of the proposed project. The model quantifies direct emissions from construction and operation activities (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use.

In this analysis, CEC staff reviewed revised GHG emissions estimates for construction and operation of the proposed project using CalEEMod (version 2022.1). Staff also reviewed the CalEEMod provided results for mobile sources (on-road haul and vendor truck trips, and worker vehicle trips), off-road equipment (crane and forklift for lifting/move BESS containers) and other uses of transportation fuels to provide landscaping; building electricity; emergency generators maintenance and testing; wastewater generation; water supply for the operation and maintenance (O&M) building and landscape irrigation; and solid waste disposal related to landfill off-gassing.

Thresholds of Significance

The BAAD has adopted GHG significance thresholds of 10,000 $MTCO_2e$/yr for stationary sources. Under the BAAD's 2022 CEQA thresholds of significance for land use projects, a CEQA lead agency can conclude that a project would not make a cumulatively considerable contribution to global climate change if the project is designed and built to be consistent with the requirements of either Option A or Option B of the BAAD thresholds (BAAD 2022, p.2). In Option A, projects must include, at a minimum, the project design elements of buildings and transportation. In Option B, projects must be consistent with a local GHG reduction strategy that meets the criteria under CEQA Guidelines Section 15183.5(b) (BAAD 2022, pg. 2).

5.3.2.2 Direct and Indirect Impacts

a. Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Construction/Demolition

Less Than Significant with Mitigation Incorporated. The proposed construction activities include mobilizing construction equipment, crews, and materials, excavating, and

installing concrete foundations and equipment. These activities during construction would cause GHG emissions due to fuels used by the construction vehicles and equipment. Diesel and gasoline-powered construction equipment would include trucks for materials and crews, and the following types of equipment: air compressor, grader, bulldozer, front-end loader, forklift, generator set, tractor, roller, excavator, and a crane. Equipment and motor vehicles would directly emit CO_2, CH_4, and N_2O due to fuel use and combustion. Emissions associated with commissioning passenger vehicle trips would be much lower than calculated construction emissions. It was assumed that 6 acre-feet of water would be used during construction.

The resulting one-time aggregate quantity of GHG emitted during the 18-month period (plus 5 months of commissioning and testing) of construction and 6-month period of decommissioning/demolition (Dudek 2025d TN# 261401) would be approximately 3,316 $MTCO_2e$ (Dudek 2025ggg TN# 263584), based on use of the CalEEMod (v.2022.1). This equates to roughly 111 $MTCO_2e$ per year if averaged over the thirty-year life of the project. The estimated construction emissions included those from the components within and outside the CEC's Opt-In certification.

Because construction emissions would cease once construction is complete, these emissions are considered short term. The BAAD CEQA Guidelines do not identify a GHG emissions threshold for construction-related emissions. Instead, BAAD recommends that GHG emissions from construction be quantified and disclosed using available data and tools, to determine the amount, types, and sources of GHG emissions resulting from the project. In addition, the BAAD CEQA Guidelines states that projects should incorporate BMPs to further reduce GHG emissions during construction. BMPs include the use of alternative-fueled (for example, renewable diesel or electric) construction trucks and equipment, use of at least 20 percent of locally sourced or recycled building materials, recycling or reusing at least 15 percent of non-hazardous construction and demolition debris, the requirements that the construction equipment be tuned and maintained in accordance with manufacturer's specifications and that construction equipment idling time be limited to two minutes (BAAD 2023, Table 6-1). Some of these measures have been included in Condition of Certification **AQ-SC5** in **Section 5.1, Air Quality**.

The project will follow the procedures specified in the Revised Construction Waste Management Plan (Dudek 2024h) concerning waste minimization and recycling of construction materials to reduce the volume of waste generated during the construction phase. Contractors and their subcontractors will implement measures to minimize waste generation and enhance recycling per the Alameda County Construction and Demolition Debris Management Plan (Alameda County 2022). The plan requires for diversion or salvage of waste generated by a covered construction and demolition project are 75% percent of inert solids, 50% percent of all remaining designated project related construction and demolition waste and, 100% of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing. The submittal of a Debris Management Plan is also required. The quantity of construction-related GHG emissions

would be limited to the construction phase, which would ensure GHG impacts are less than significant.

For the components outside the CEC's Opt-In jurisdiction, CEC staff recommends **MM AQ-1** in **Section 5.1**, **Air Quality**, which includes PG&E Construction Measures to further reduce emissions during construction of these components.

Operation

Less Than Significant with Mitigation Incorporated. Based on the analysis below, and with the incorporation of the conditions of certification described below, operation of the project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

BESS System

Operation of the BESS system would not directly cause or create GHG emissions while charging and discharging. The energy that the BESS system would be storing is drawn from the electricity supply during times of surplus generation. It is likely that the batteries would be charged mid-day, during excess solar renewable energy generation, when energy is the cheapest, and would be discharged during periods when energy is scarcer, more expensive, and when there would be little to no renewable energy generation. By storing energy at times of excess renewable generation and discharging when conventional natural gas-fired power plants would otherwise be dispatched, the BESS system would provide a combustion-free source of stored energy during times when natural gas-fired power plants would cause higher GHG emissions. The project also would improve energy grid reliability and support the integration of renewable energy sources, such as wind and solar, reducing the need to operate natural gas power plants and displacing GHG emissions.

Initially the BESS system will have a round-trip efficiency (RTE) of 85.5 percent; this means that 0.855 megawatt hours (MWh) would be discharged for every 1 MWh delivered by the local utility (PG&E) during charging. In year 20, the RTE will reduce to 82.6 percent (Dudek 2025a TN# 261398).

Table 5.3-1 compares the GHG emissions intensities of the electric utility supply from PG&E that would be stored during charging against typical estimated emission factors for natural gas-fired power plants likely to be dispatched when energy is scarce. Because of the RTE of the BESS system, discharging the full storage capacity of 3,200 MWh requires PG&E to supply approximately 3,743 MWh during charging initially.

TABLE 5.3-1 COMPARISON OF GHG EMISSIONS INTENSITIES

Source of Electricity	GHG Emissions Intensity of Supply ($MTCO_2e/MWh$)	Emissions to Fully Charge BESS, Including Round-Trip Losses ($MTCO_2e$)	Emissions of Producing 3,200 MWh of Electricity from Natural Gas Resources ($MTCO_2e$)
PG&E Electrical Utility Emission Factor	0.093	348.1	---
Natural Gas-Fired Combined-Cycle Power Plant	0.385	---	1,232
Natural Gas-Fired Advanced Combustion Turbine Power Plant	0.524	---	1,677

Sources: PG&E electrical utility emission factor (CAPCOA 2022); natural gas power plant emissions factors (CEC 2019).

The comparison of electricity supplies in **Table 5.3-1** shows that the emissions related to fully charging the BESS system (348.1 $MTCO_2e$) from the grid, including round-trip losses, would be much less than the typical emissions that would otherwise be emitted by a natural gas-fired power plant producing the equivalent 3,200 MWh of supply (1,232 to 1,677 $MTCO_2e$). Although there is energy loss during the charging and discharging cycles, the BESS system would have the overall beneficial effect of displacing GHG from energy generation. With up to 365 charging and discharging cycles per year, CEC staff estimates that the displaced GHG emissions may range from 322,623.5 to 485,048.5 $MTCO_2e$ annually. The displaced GHG emissions would be higher if the project uses non-peak power produced from solar facilities for charging.

Refrigerant Leakage

The one O&M building with offices will have air conditioning using R-454B for the onsite employees. R-454B is a low-GWP refrigerant with a GWP of 465. The BESS enclosures also have a heating, ventilation, and air conditioning (HVAC) system for thermal management purposes. The applicant has proposed the use of low-GWP refrigerants or R-134a in the thermal management system and estimated that the annual GHG emissions due to refrigerant leakage for R-134a and R-454B would be 66.18 $MTCO_2e$ per year based on CEC staff calculations.

R-134a has a global warming potential (GWP) of 1,430. As discussed in more detail under criterion "b" of the CEQA environmental checklist below, this high-GWP refrigerant would be prohibited per regulation *Prohibitions on Use of Certain Hydrofluorocarbons (HFCs) in Stationary Refrigeration, Stationary Air-conditioning and Other End-Uses* (California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 10 Climate Change, Article 4, Subarticle 5). Staff recommends Condition of Certification (COC) **GHG-1** to ensure the project would remain in compliance with the

current HFCs prohibition. The project would be required to use refrigerants with lower GWPs to comply with the HFCs prohibition.

Vehicle Trips, Emergency Generators, and O&M Building and Equipment

Proposed project operations with maintenance and inspection of the BESS energy generation facility would use diesel fuel and gasoline for off-site vehicle trips for worker commutes, material deliveries, site security, and facility upkeep. Use of these fuels would cause GHG emissions from the vehicle trips. During operation, the quantity of GHG emitted directly by vehicles and equipment supporting the battery system would be approximately 72 $MTCO_2e$ per year (Dudek 2025ggg TN# 263584). GHG emissions would also occur from occasional bio-diesel fuel combustion by the two emergency generators. The applicant proposed the use of bio-diesel and CEC staff has incorporated the use of bio-diesel as a requirement in COC **GHG-3** which ensures the applicant would use bio-diesel for 100 percent of total energy use by the gensets, and only use ultra-low sulfur diesel (ULSD) as a secondary fuel in the event of supply challenges or disruption in obtaining bio-diesel. The total energy demand for the project is 17,520 megawatt-hours per year. This estimate includes all energy demand to power heating, ventilation, and air conditioning (HVAC) equipment associated with BESS cooling (Dudek 2025ggg TN# 263584). Other onsite GHG emissions would be caused by mobile cranes, forklifts and landscaping, water supply, and solid waste disposal related to O&M building use and occupancy. For the vehicle trips and proposed project workforce of up to 18 full-time employees, two (2) emergency generators, the three O&M buildings (14,400 square-feet total), the emissions would be approximately 1,898 $MTCO_2e$ per year.

Fugitive SF_6 Emissions from Gas-Insulated Equipment

During operations and maintenance, one of the main sources of GHG emissions would be fugitive emissions from equipment containing sulfur hexafluoride (SF_6) gas installed at the proposed collector substation. SF_6 has a GWP of 23,900 using CO_2 at a reference value of 1 (IPCC 2007). The proposed project would add new sources of GHG with electrical power equipment that contains gas to provide thermal insulation or arc quenching. This gas-insulated equipment includes devices such as switchgear, switches, and circuit breakers within the proposed substations. Until an alternative insulating gas becomes commercially available, circuit breakers and gas-insulated switchgear would contain SF_6, a potent GHG. The SF_6 insulating gas could be expected to leak at small amounts annually over the life of the project. Federal and state-level mandatory reporting rules track SF_6 emissions, and the CARB Regulation for Reducing Greenhouse Gas Emissions from Gas- Insulated Equipment requires control and eventual replacement and phase-out of SF_6 with alternative gases having lower GWP.

Accordingly, the project would need to manage its use of SF_6 through inventory recordkeeping, proper handling, and planning for an eventual replacement with an alternative. The new phase out schedule began in January 2025 with all switchgear needing to be SF_6 free by January 2033. CARB has developed a timeline for phasing out SF_6 equipment in California and created incentives to encourage owners to replace SF_6

equipment. The California Office of Administrative Law approved this rulemaking in December 2021 and the regulation went into effect January 1, 2022 (CARB 2021b).

CARB has implemented phasing requirements for the elimination of SF_6 from electrical equipment, including circuit breakers. While the analysis assumes that all circuit breakers would contain SF_6, circuit breakers in the later phases may not contain SF_6 and/or as circuit breakers are replaced, they would be replaced with non-SF_6 technology.

The proposed substation would include 230 kV breakers that would contain SF_6 gas. It is estimated that the project would maintain a total of 1,160 pounds of SF_6 gas at the substation. Although leakage is unlikely, for the purposes of the project's emissions inventory, it was assumed that the breakers would have a maximum annual leak rate of 0.5% in accordance with the Institute of Electrical and Electronics Engineers PC37.122 – Standard for High Voltage Gas-Insulated Substations Rated Above 52 kV (IEEE 2018). Emissions from SF_6 gas are included as part of refrigerant source emissions.

Prior to the phase-out, emissions of SF_6 due to potential leaks are quantified as approximately 62.88 $MTCO_2e$ per year based on CEC staff calculations.

Total Operational Emissions

The total annual operational GHG emissions would be approximately 3,626 $MTCO_2e$ per year (Dudek 2025ggg TN# 263584). Combined with the amortized construction emissions of 111 $MTCO_2e$ per year, the project would result in approximately 3,737 $MTCO_2e$ per year (Dudek 2025ggg TN# 263584). The emissions estimation includes those from project components both within and outside the CEC's Opt-In certification. These operational emissions would comply with, and be less than, BAAD's adopted brightline threshold of significance, which is annual emissions of less than 10,000 $MTCO_2e$ per year for stationary sources (BAAD 2023). In addition, as stated above, CEC staff estimates that the BESS system could displace GHG emissions ranging from 322,623.5 to 485,048.5 $MTCO_2e$ annually. Because the project would cause direct emissions at levels less than the applicable threshold and provide overall beneficial effects of displacing GHG from natural gas-fired power plants used for energy generation, this impact would be less than significant.

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

The proposed project would generate limited quantities of direct GHG emissions from the construction, operation and maintenance, and demolition activities. The mix of power serving the end-use customers would not change because of the proposed project. The proposed project would improve the infrastructure used in delivery of PG&E's energy supply. By installing battery energy storage, the project would improve PG&E's reliability and flexibility in delivery of electricity in compliance with California's RPS requirements. As described above, the battery system would likely be charged mid-

day, when there would be excess solar energy generation, and would be discharged to the grid at night, when the energy supply is reliant on fossil fuel generation, thereby displacing the need for GHG-emitting energy sources. Increasing the use of renewable generation in conjunction with energy storage is important to the overall objective of decarbonizing the electricity sector (CARB 2022). Moreover, the proposed project would not conflict with local, BAAD, State, or federal regulations pertaining to GHG emissions.

Construction and Demolition/Decommissioning

Less Than Significant. Based on the analysis below, construction/demolition of the project would not conflict with an applicable plan, policy or regulation adopted for the purposes of reducing the emissions of greenhouse gases.

The project would lead to a net reduction in GHG emissions across the State's electricity system. Construction of the project would contribute to meeting the State's GHG reduction goals under AB 32, and subsequent targets for 2030 and beyond, and would facilitate compliance with California's RPS.

Therefore, this impact would be less than significant.

The project's short-term construction GHG emissions would not interfere with the state's ability to achieve long-term GHG emissions reduction goals. Construction vehicles and the supplies of transportation fuels used during construction of the project, including components both within and outside the CEC's Opt-In certification, are required to comply with the applicable GHG reduction programs for mobile sources and suppliers of transportation fuels. Construction activities of the project would conform to relevant programs and recommended actions detailed in CARB's Scoping Plan.

Operation

Less Than Significant with Mitigation Incorporated. Based on the analysis below, and with the incorporation of the conditions of certification described below, operation of the project would not conflict with an applicable plan, policy or regulation adopted for the purposes of reducing the emissions of greenhouse gases.

The project would lead to a net reduction in GHG emissions across the State's electricity system. Operation of the project would contribute to meeting the State's GHG reduction goals under AB 32, and subsequent targets for 2030 and beyond, and would facilitate compliance with California's RPS.

Electricity from the BESS energy generation facilities would be used to serve the needs of California's customers and would facilitate compliance with California's Renewables Portfolio Standard (RPS).

Other project GHG emissions due to operational activities, including those within and outside the CEC's Opt-In certification, would be subject to energy efficiency requirements and GHG reduction programs for mobile sources and suppliers of

transportation fuels. For example, emissions from the operational workforce and from O&M activity and building use would be similar to those of other industrial development. The proposed project would comply with all applicable county and state green building standards measures, including California Code of Regulations, Title 24, Part 6, baseline standard requirements for energy efficiency, based on the 2022 Energy Efficiency Standards requirements, and the 2022 California Green Building Standards Code, commonly referred to as CALGreen (California Code of Regulations, Title 24, Part 11)(LA 2025g).

The CARB 2022 Climate Change Scoping Plan identifies decarbonizing the electricity sector as a crucial pillar of achieving carbon neutrality (CARB 2022). The California Global Warming Solutions Act of 2006 (AB 32) and Senate Bill 32 (SB 32) of 2016 codified the GHG emissions target to 40 percent below the 1990 level by 2030. Subsequently, California's Clean Energy and Pollution Reduction Act of 2015 [Senate Bill 350 (SB 350)], SB 350 set ambitious 2030 targets for energy efficiency and renewable electricity, among other actions aimed at reducing GHG emissions across the energy and transportation sectors. SB 350 also connects long-term planning for electricity needs with the state's climate targets, with CARB establishing 2030 GHG emissions targets for the electricity sector in general (CARB 2022). The current RPS was signed into law in September 2018 with Senate Bill 100 (SB 100), which established the goals of 50 percent renewable energy resources by 2026 and 60 percent renewable energy resources by 2030. SB 100 also sets a target for California to achieve a GHG-free energy supply by December 31, 2045.

Under the BAAD's 2022 CEQA thresholds of significance for land use projects, a CEQA lead agency can conclude that a project would not make a cumulatively considerable contribution to global climate change if the project is designed and built to be consistent with the requirements of either Option A or Option B of the BAAD thresholds (BAAD 2022, p.2). In Option A, projects must include, at a minimum, the project design elements of buildings and transportation. In Option B, projects must be consistent with a local GHG reduction strategy that meets the criteria under CEQA Guidelines Section 15183.5(b) (BAAD 2022, pg. 2).

The proposed project would meet the new BAAD GHG Land Use Project standards by not including natural gas infrastructure, not using energy in a wasteful, inefficient, or unnecessary manner, meeting the Senate Bill 743 VMT target, complying with CALGreen Tier 2 off-street electric vehicle requirements as required by COC **GHG-2** and therefore, complying with Item A of the standards. (Dudek 2025ggg, p. 81).

Refrigerant Prohibition. As mentioned above, the applicant proposed the use of low-GWP refrigerants or R-134a for BESS cooling (LA 2025g TN# 265753). R-134a has a GWP of 1,430. The regulation *Prohibitions on Use of Certain Hydrofluorocarbons (HFCs) in Stationary Refrigeration, Stationary Air-conditioning and Other End-Uses* (California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 10 Climate Change, Article 4, Subarticle 5) prohibits the use of R-134a as of January 1, 2023 for all refrigerators. Refrigerants with a GWP of 750 or greater are prohibited as of January 1,

2025 for residential and non-residential air-conditioning equipment (CARB 2021a). Since these dates have passed, R-134a will be prohibited from use. Staff recommends COC **GHG-1** to ensure the project would remain in compliance with the current HFCs prohibition, and the air-cooling units installed onsite would use non-prohibited refrigerant.

The operation of this project component would comply with all regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions, and the proposed project would not conflict with any applicable GHG management plan, policy, or regulation except for using prohibited refrigerants for cooling the warehouse where the BESS would be stored and other cooling needs. This impact would be less than significant with the incorporation of COC **GHG-1.**

5.3.2.3 Cumulative Impacts

Less Than Significant with Mitigation Incorporated. The impact analysis for GHG emissions is global in nature, and the project's GHG emissions are considered in the broad context of global climate change. The focus of this analysis is to disclose the project's effect on climate change, while presenting the quantity of GHG emissions. The State CEQA Guidelines provide that a project's incremental contribution to a cumulative GHG emissions effect may be determined not to be significant and the effects of the project to not be cumulatively considerable if the project complies with the requirements of the state's long-term climate goals or strategies.

The proposed BESS energy generation facility would lead to a net reduction in GHG emissions across the State's electricity system, and the GHG emissions related to the project, including components within and outside the CEC's Opt-In certification, would not conflict with any LORS adopted for the purpose of reducing the emissions of GHGs. Therefore, the project's GHG emissions would not be cumulatively considerable.

5.3.3 Project Conformance with Applicable LORS

Table 5.3-2 indicates CEC staff's determination of consistency with applicable local, state and federal LORS, including any proposed COCs, where applicable, to ensure the project would conform with LORS. As shown in this table, CEC staff concludes that with implementation of specific COCs, the proposed project would conform with all applicable LORS. The subsection "5.3.5 Proposed Conditions of Certification" below contains the full text of the referenced COCs.

TABLE 5.3-2 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis For Determination
Federal	
None.	
State	
2022 Scoping Plan	**Yes.** The proposed battery energy storage facility would provide electricity to facilitate compliance with California's RPS and would lead to a net

TABLE 5.3-2 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
	reduction in GHG emissions across the State's electricity system.
CARB SF_6 Reduction Requirements	**Yes.** The project would comply with GHG emissions reduction requirements through conformance with reporting and phase-out requirements of this regulation.
Short-Lived Climate Pollutant (SLCP) Strategy	**Yes.** The project would comply with GHG emissions reduction requirements through conformance with COC **GHG-1**.
Local	
MTC & ABAG Plan Bay Area 2050 (RTP/SCS)	**Yes.** The proposed project would be consistent with the plan goals through the implementation of the BESS facility that would store electrical energy for additional grid support during peak demand addressing climate goals set by the state.

5.3.4 Conclusions and Recommendations

As discussed above, with implementation of COCs, the project would have a less than significant impact related to greenhouse gas emissions and would conform with applicable LORS. Staff recommends adopting the COCs as detailed in subsection "5.3.5 Proposed Conditions of Certification" below.

Impacts associated with the project components outside the CEC's Opt-In certification to be considered for permitting by CPUC would be further reduced with the inclusion of MMs as detailed in subsection "5.3.6 Recommended Mitigation Measures" below.

5.3.5 Proposed Conditions of Certification

As discussed above, the project would have a less than significant impact with mitigation incorporated related to climate change and greenhouse gas emissions and would conform with applicable LORS. Staff recommends adopting the conditions of certification as detailed in subsection "5.3.5 Proposed Conditions of Certification" below. The following proposed conditions of certification include measures to mitigate environmental impacts.

GHG-1 Prior to the installation of any onsite cooling, refrigeration, or air conditioning units, the project owner must demonstrate that the project would use refrigerants that comply with the Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Stationary Airconditioning and Other End-Uses (California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 10 Climate Change, Article 4, Subarticle 5, Sections 95371, et seq.) in all onsite cooling, refrigeration, or air conditioning units.

Verification: To ensure compliance with this condition the project owner must identify and confirm the compliant refrigerant cooling fluid installation or provide a copy of the variance approval from CARB for any non-compliant refrigerant, along with

an estimated annual greenhouse gas emissions in metric tons of CO_2-equivalent ($MTCO_2e$) to be submitted to the CEC CPM for verification, within 30 days prior to installation of any onsite cooling, refrigeration, or air conditioning units. Once confirmed and approved by the CEC CPM, this verification is considered complete.

GHG-2 Prior to the start of construction, the project owner shall submit final design demonstrating compliance with the CALGreen Tier 2 off-street electric vehicle requirements. Upon completion of construction, the project owner shall provide documentation confirming compliance with these requirements.

Verification: To ensure compliance with this condition, the project owner shall submit final design to the CPM demonstrating compliance with the CALGreen Tier 2 off-street electric vehicle requirements, within 30 days prior to construction. Within 30 days after completion of construction, the project owner shall provide documentation confirming compliance with these requirements.

GHG-3 The project owner shall use biodiesel for 100 percent of total energy use by the gensets, and only use ultra-low sulfur diesel (ULSD) as a secondary fuel in the event of supply challenges or disruption in obtaining biodiesel. The project owner shall provide documentation of biodiesel supply challenges or disruptions to the CPM within 10 calendar days of occurrence and demonstrate a good faith effort to comply with the requirement and that compliance is not practicable. The project owner shall provide an annual report of the status of procuring and using biodiesel to the CPM demonstrating compliance with the condition.

Verification: To ensure compliance with this condition, the project owner shall provide an annual report of the status of procuring and using biodiesel to the CPM demonstrating compliance with the condition. Within 10 calendar days of biodiesel supply challenges or disruptions, the project owner shall provide documentation to the CPM demonstrating a good faith effort to comply with the requirement and that compliance is not practicable.

5.3.6 Recommended Mitigation Measures

For the project components outside the CEC's Opt-In certification, the mitigation measure **MM AQ-1** in **Section 5.1, Air Quality** can and should be adopted by the agency with permitting authority over those components consistent with California Code of Regulations title 14, section 15091(a)(2). Please refer to **Section 5.1, Air Quality**, for details of the mitigation measure.

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5.4 Cultural and Cultural Tribal Resources

5.4.1 Environmental Setting

This section describes the environmental and regulatory setting and discusses the impacts associated with the construction and operation of the project with respect to cultural and tribal cultural resources.

Existing Conditions

The proposed project is near the eastern boundary of Alameda County approximately 2.5 miles west of the city of Tracy and two miles south of the interchange of Interstates 580 and 205. The project site is surrounded by vacant, open space, rural roads, and the PG&E Tesla Substation. The project site located within Sections 31 and 32, Township 2 South, Range 4 East of the Midway, California, 7.5-minute U.S. Geological Survey Quadrangle map.

Development of the BESS facility would occur on about 70 permanently disturbed acres of Assessor's Parcel Number (APN) 99B-7890-002-04, which currently comprises fallowed annual grasslands suitable for grazing. The gen-tie line would extend southeast from the project substation, crossing Patterson Pass Road, and then proceed east to the Point of Interconnection at the transmission tower approximately 1,300 feet from the Tesla Substation. The project's gen-tie line would be sited on APNs 99B-7890-2-4, 99B-7890-2-6, and 99B-7885-12. Land uses in the immediate vicinity of the project include undeveloped rural agricultural lands, multiple high-voltage transmission lines and electrical substations, rural roads, and railroad lines. The nearest municipality to the project site is the city of Tracy 2.5 miles to the northeast. There are a few single-family residences near the Tesla Substation's southern and eastern boundaries. The nearest residence is about 1,500 feet southeast of the project site and 560 feet south of the proposed gen-tie line; it is owned by the landowner who would lease out the lands for the project.

The project falls at the transition between the Coast Ranges and Great Valley geomorphic provinces at the margin of the Sacramento Valley. Portions of the Area of Potential Effects (APE) have been substantially modified by construction roads and agricultural activities. The Sacramento Valley has two major river systems, the Sacramento and American Rivers, which carry water that originates in the Sierra Nevada south and west into the Sacramento–San Joaquin River Delta. Elevation in the project vicinity ranges from approximately 380 to 523 feet above mean sea level and the topography of the project area is flat.

This region is characterized by a Mediterranean climate, which includes dry hot summers and cool wet winters. The region within which the project area occurs receives an average of about 12 inches of precipitation annually. Annual temperatures

range from 38.3°F to 92.6°F, with the coolest temperatures in January and warmest temperatures in July (WRCC 2023).

Native American Archaeological Context

The archaeology and prehistory of the eastern Coast Ranges foothills/western San Joaquin Valley are not well understood. Early and widespread agricultural use of the valley floor has destroyed much of the bottomland archaeology, and siltation has most likely buried many resources well below the surface sediments. Much of the recovered archaeological material from the valley area is devoid of context, having been scavenged from the surface and placed in private collections. Cultural resources within the foothills are often covered by the thick grass of the agricultural grazing landscape. Despite these difficulties, a general chronological framework developed for the region has been developed and follows the general California chronology.

Paleoindian Period (11,550 to 8550 BC)

While few sites of Paleoindian age have been identified in the region, occupation is known to date to at least 11,000 years ago (Dudek 2021, page 16). Most of the evidence for a Paleoindian presence has been limited to surface finds of fluted projectile points, which are typically regarded by North American archaeologists as late Pleistocene/early Holocene-epoch time markers. Numerous specimens of these fluted, concave base (Clovis or "Clovis-like") projectile points and other artifacts presumed to be Paleoindian in age (e.g., "humpies" and crescents) (Dudek 2021, page 16) have been collected from surface contexts in several locations throughout California. Unfortunately, most of these discoveries have been made by amateur collectors with no locational or contextual data being recorded, resulting in an enormous and irretrievable loss of data for understanding the Paleoindian Period.

The most cited and well-known examples of Paleoindian habitation in California come from the southwest shore of Tulare Lake at the Witt Site (CA-KIN-32) which contained fluted projectile points, scrapers, crescents, and Lake Mojave series points (Dudek 2021, page 16). On the edge of a dry lakebed near two arms of Clear Lake at the Borax Lake Site (CA-LAK-36) in Lake County, which contained fluted lanceolate projectile points, projectile points resembling Lake Mojave and Silver Lake types, foliate bifaces, crescents, scrapers, and choppers (Moratto 2004, page 83). Finally, several localities in the China Lake Basin in Kern County have produced fluted projectile points, crescents, lanceolate knives, saws, scrapers, and hammerstones (Morrato 2004, page 85). These and other isolated finds elsewhere indicate an initial occupation of California near the end of the Pleistocene and into the early Holocene.

Sites dating to this period are most commonly located around ancient pluvial lake shores and seem to have had a hunting and gathering economic focus with a mix of big to small game hunting which includes fish and birds as well as plant collecting. The absence of groundstone tools in the assemblages suggests a lack of hard seeds in the diet.

Archaic Period (8550 BC to AD 1100)

The Archaic Period in California is generally characterized by gradual development of specific regional adaptations and the proliferation and regional differentiation of subsistence strategies and tool types as people became increasingly sedentary or at least reoccupied a greater number of locations with greater frequency, resulting in the formation of a larger number of regionally or functionally distinct sites. The Archaic Period in the California chronology is subdivided into three phases: Lower Archaic, Middle Archaic, and Upper Archaic.

Lower Archaic Period (8550 to 5550 BC)

As with the Paleoindian Period, Lower Archaic deposits tend to be isolated finds lacking stratigraphic context. Stemmed projectile points, flaked stone crescents, and other distinctive flaked stone artifact types are associated with this period (Dudek 2021, page 16). It is believed that human subsistence during this period was largely the same as the previous with a focus on general hunting and gathering practices (Dudek 2021, page 16). There remains a lack of grinding implements, such as mortars, pestles, milling stones, and hand stones during this time as well. Other types of artifacts that do appear in these assemblages include hand-molded baked clay net weights, olive snail and abalone shell beads and ornaments, and charm stones.

Middle Archaic Period (5550 to 550 BC)

The onset of the Middle Archaic in Central California was marked by a substantial change in the climate, with warmer, drier conditions resulting in the shrinking and eventual drying out of the lakes of the San Joaquin Valley, a phenomenon common among other Pleistocene Lakes throughout the Western United States during this time. This also coincided with the formation of new wetland habitats as rising sea levels pushed inland, forming the Sacramento–San Joaquin River Delta (Delta). These climatic processes resulted in substantially more stable landforms as fans and floodplains stabilized within the Delta, making buried Middle Archaic deposits much more common than those from the Early Archaic.

Middle Archaic sites are typified by the distinct adaptive pattern of more generalized and logistically organized subsistence practices and residential stability along river corridors (Dudek 2021, page 17). While hunting, fowling, and fishing continue to be important aspects of subsistence, the prevalence of ground stone tools, including mortars and pestles, suggest an increased reliance on vegetal resources, likely the result of greater residential stability driving resource intensification (Dudek 2021, page 17). The continued importance of fishing is indicative in the adoption of new fishing technologies, including gorge hooks, composite bone hooks, and spears, along with abundant ichthyofaunal remains, identified at Middle Archaic sites in Contra Costa, Sacramento, and San Joaquin counties (Dudek 2021, page 17). Other artifact types characteristic of the period includes Olivella and Haliotis beads and other ornaments, distinctive spindle-shaped charm stones, cobble mortars, chisel-ended pestles, and

large projectile points (implying use of the atlatl, or spear-thrower) (Dudek 2021, page 17).

Upper Archaic Period (550 BC to AD 1100)

The transition to the Upper Archaic Period coincides with the onset of late Holocene environmental conditions, during which time the climate was markedly cooler, wetter, and more stable. The archaeological record from the Upper Archaic is better understood and represented, and is marked by an increase in cultural diversity, with numerous regional distinctions in burial posture, artifact styles, and other elements of material culture (Dudek 2021, page 17).

The Upper Archaic record is marked by the development and proliferation of numerous bone tools and implements, as well as widespread production and trade of manufactured goods, including Olivella shell beads, Haliotis ornaments, and obsidian bifacial roughouts and ceremonial blades (Dudek 2021, page 17). Subsistence economies during the Upper Archaic focused on seasonally structured resources that could be harvested and processed in bulk, including acorns, salmon, shellfish, deer, and rabbits. The proliferation of mortars and pestles and archaeobotanical remains indicate that the first widespread reliance on acorns occurred during this period (Dudek 2021, page 17). Large, mounded village sites also first occurred in the Delta region during this period (Dudek 2021, page 17).

Overall, the Archaic Period is characterized by increasing residential stability, cultural diversity, and subsistence intensification though time.

Emergent Period (AD 1100 to 1750)

The archaeological record for the Emergent Period is the most substantial and well-documented of any period in the region, and the assemblages and adaptations represented therein are the most diverse. The Emergent Period also marks the onset of cultural traditions consistent with those documented at European contact and the disappearance of several previous archaeological traditions. Large villages developed in areas of the Sacramento Valley, and the number of mound villages and smaller hamlets increased across the region. Subsistence economies during the Emergent Period were increasingly reliant on fishing and plant gathering, with increased subsistence intensification evident in the increased reliance on small seeds and a more diverse assortment of mammals and birds (Dudek 2021, page 18). Perhaps the most notable technological change during the Emergent Period is the introduction of the bow and arrow, which replaced atlatl technology as the favored hunting implement sometime between AD 1100 and AD 1300 (Dudek 2021, page 18). The material record during the Emergent Period is also marked by the introduction of new Olivella bead and Haliotis ornament types, and eventually the introduction of clamshell disk beads (Dudek 2021, page 18). The Emergent Period in general is marked by an increase in population size and the number of residential sites and villages throughout the region, with increasing regional variability and resource intensification.

Ethnohistoric Period (post-AD 1750)

The history of California Native American communities prior to the mid-1700s has largely been reconstructed through later Mission-Period and early ethnographic accounts. The first records of the Native American inhabitants of the region come predominantly from European merchants, missionaries, military personnel, and explorers. These brief, and generally peripheral, accounts were prepared with the intent of furthering respective colonial and economic aims and were combined with observations of the landscape. They were not intended to be unbiased accounts regarding the cultural structures and community practices of the newly encountered cultural groups. The establishment of the missions in the region brought more extensive documentation of Native American communities, though these groups did not become the focus of formal and in-depth ethnographic study until the early twentieth century. The principal intent of these researchers was to record the pre-contact, culturally specific practices, ideologies, and languages that had survived the destabilizing effects of missionization and colonialism. This research, often understood as "salvage ethnography," was driven by the understanding that traditional knowledge was being lost due to the impacts of modernization and cultural assimilation. Alfred Kroeber applied his "memory culture" approach (Dudek 2021, page 18) by recording languages and oral histories within the region.

Based on ethnographic information, it is believed that at least 88 different languages were spoken from Baja California Sur to the southern Oregon state border at the time of Spanish contact (Dudek 2021, page 18). The distribution of recorded Native American languages has been dispersed as a geographic mosaic across California through six linguistic stocks (Dudek 2021, page 18; Shipley 1978, page 81).

Victor Golla has contended that one can interpret the amount of variability within specific language groups as being associated with the relative "time depth" of the speaking populations (Dudek 2021, page 18). A large amount of variation within the language of a group represents a greater time depth than a group's language with less internal diversity. One method that he has employed is by drawing comparisons with historically documented changes in Germanic and Italic (Romance) language groups. Victor Golla has observed that the "absolute chronology of the internal diversification within a language family" can be correlated with archaeological dates (Dudek 2021, page 18). This type of interpretation is modeled on concepts of genetic drift and gene flows that are associated with migration and population isolation in the biological sciences.

The project area falls near the northwestern periphery of the area occupied Yokuts speaking groups, bordered to the west by Costanoan (Ohlone) and to the north by Plains Miwok populations during the Ethnohistoric Period. These three languages form a branch ("Yok-Utian") of the Penutian linguistic stock, with two distinct sub-branches: (1) Yokuts and (2) the more closely related Costanoan and Miwok ("Utian") (Dudek 2021, page 19). The Yok-Utian language group is believed to have originated in the Great Basin and been subsequently brought to California in two separate migration

events, an initial Utian migration that reached the Delta region approximately 2500 to 2000 calibrated years (cal) BC, and a later Yokut migration, possibly as late as 600 to 700 cal AD (Dudek 2021, page 19). Kroeber's interpretation of the ethnographic distribution of the major sub-dialects of the Yokut language suggests that the original diversification of Yokut-speaking groups in California originated in the southern San Joaquin Valley and subsequently spread northward (Dudek 2021, page 19). Golla notes that the most specialized subdialects of Yokut, and thus presumably the oldest variants, are from the southern end of Yokut territory, suggesting that the Yokut language group likely originated in the vicinity of the Lower Kern River or Tehachapi Pass, with the language diversifying as it spread north along the San Joaquin Valley and southern Sierra Nevada foothills (Dudek 2021, page 19).

Ethnographic Context

Northern Valley Yokuts

Ethnohistoric inhabitants of the area now representing the project site would have likely spoken Tamukamne (or Tamcan), a dialect of Delta (or Far Northern Valley) Yokuts centered approximately 15 miles west of Lathrop (Dudek 2021, page 19). People speaking Delta Yokuts dialects occupied the lower course of the San Joaquin River from the Merced River east of Newman to the Delta sloughs north of Stockton. Little is known about Tamukamne, or any Delta Yokuts dialects, because of early missionization activities and Euro-American settlement, with the only linguistic documentation from late nineteenth- and early twentieth-century word lists. Despite the paucity of linguistic data, it appears that these dialects can be classified as Valley Yokuts on phonological and morphological grounds, though several portions of the language are non-cognate with other Yokuts dialects and word borrowing from the adjacent Miwok and Costanoan languages is evident (Dudek 2021, page 19). The similarity between Delta Yokuts and Valley Yokuts has generally led to the grouping of Delta Yokuts with the Northern Valley Yokuts in ethnographic works describing the ethnographic lifeways of the region.

Broadly defined, Northern Valley Yokuts refers to groups speaking several distinct dialects who inhabited the lower San Joaquin River watershed and its tributaries extending from Calaveras River in the north to approximately the large bend of San Joaquin River eastward near Mendota. The lower San Joaquin River meanders through the territory making bends, sloughs, and marshes full of tule reeds. Farther from the rivers and marshes, the valley floor would have been dry and sparely vegetated grassland with occasional stands of sycamores, cottonwoods, and willows along stream courses and groves of valley oaks where the soil was rich enough (Dudek 2021, page 19). In contrast to the limited diversity of available plants, the fauna of the region was both plentiful and diverse on land and water. Fish, freshwater shellfish, migratory waterfowl, tule elk, pronghorn antelopes, and other smaller animals would all have been available and often seasonally abundant.

Northern Valley Yokuts habitation was most common and dense in areas situated in proximity to rivers and major tributaries, though the drier plains were occupied at lower

density, more often on the east side of the San Joaquin River (Dudek 2021, page 19). West of the river, populations were much sparser and concentrated in the foothills on minor waterways. The concentration of the population near waterways is unsurprising given that many of the Northern Yokuts subsistence staples, particularly fish and waterfowl, would have been most available in these areas. The focus on fishing is seen in the material culture consisting of net sinkers and harpoons, likely used from rafts constructed from tule reed bundles (Dudek 2021, page 20). Gathered vegetable resources would also have been an important part of subsistence, particularly acorns, although tule roots and various seeds were also gathered. These vegetal resources would likely have been processed in portable mortars—often made from oak, although stone mortars were occasionally used (Dudek 2021, page 20).

Due to abundant riverine resources, the Northern Valley Yokuts were generally sedentary, occupying the same locations year-round, though there were times of seasonal disbandment for harvesting wild plant resources such as acorns and seeds (Dudek 2021, page 20). Principal settlements were perched atop low mounds on or near riverbanks, where their elevated position prevented inundation during seasonal flooding (Dudek 2021, page 20). Northern Valley Yokuts' dwellings were constructed of tule reed woven mats places over a pole frame oval or round structure. These structures were usually 25 to 40 feet in diameter and would belong to a single family (Dudek 2021, page 20). This contrasts with the larger multifamily dwellings erected sometimes by the Southern Yokuts. In addition to dwellings, earth-covered ceremonial sweat lodges and larger ceremonial assembly chambers were constructed, with each community likely having one or more of these buildings (Dudek 2021, page 20).

As with most aspects of their lifeways, little can be said for certain about the political organization among the Northern Valley Yokuts, but it is believed that these groups were organized into tribes of as many as 300 individuals, guided by a headman or chief (Dudek 2021, page 20). Most members of the tribe congregated in a single principal settlement, although smaller hamlets of two or three houses also existed.

Based on the information about population density and settlement distribution, it is possible to conjecture that the total population of the Northern Valley Yokuts may have been quite large prior to European contact. However, the Northern Valley Yokut population saw sharp and devastating decline from disease and relocation to coastal missions nearly immediately after Spanish contact (Dudek 2021, page 20). This only increased with the large influx of cattle ranching and Anglo Americans after the gold rush (Dudek 2021, page 20).

Costanoan (Ohlone)

The area immediately west of the project site was occupied by Ohlone groups that spoke a dialect of Costanoan (Dudek 2021, page 20). Costanoan-speaking groups occupied much of the Bay Area, from the San Francisco and San Ramon down to the Monterey Bay and Salinas. Due the effects of missionization, relatively little is known about the Ohlone ethnographically and their material culture has largely been

reconstructed from the archaeological record. Like their neighboring Yokuts, Ohlone communities were generally organized into autonomous tribelets of 200 to 400 people, which were overseen by a headman and council of elders, and occupied villages near the coast or major drainages (Dudek 2021, page 21). These primary settlements were supplemented with temporary camps located in prime resource-collecting areas.

Subsistence practices were similar to those of the Yokuts, with a heavy reliance on terrestrial vegetal food sources including acorn, nuts, seeds, greens, and bulbs. The Ohlone also pursued terrestrial game including deer, pronghorn, tule elk, rabbit, and waterfowl. Whereas the Yokuts relied heavily on riverine resources, marine resources made up an important component of the Ohlone diet, in particular shellfish and sea mammals. The Ohlone traded shell ornaments, animal furs, salt, shellfish, and other items with neighboring Miwok, Yokuts, and Patwin for bows and arrows, basketry materials, pigments, and feather blankets (Dudek 2021, page 21). Thus, it is likely that the area around the project site would have been frequently traversed by both Yokuts and Ohlone groups in pursuit of trading partners.

Plains Miwok

The area to the north of the project site would have been occupied by the Plains Miwok–speaking groups who inhabited the region of the lower Mokelumne and Cosumnes Rivers, roughly bounded by the Yolo Basin to the west, the American River to the north, the Sierra Nevada to the east, and the Calaveras River to the south. These groups were similar to the Yokuts in their subsistence settlement system with settlements situated on rivers, and a reliance on fishing, hunting, and collecting vegetative resources. These groups may have been more logistically mobile than the Yokuts, with satellite sites used during hunting excursions and for pre-processing of collected plant resources, such as acorns; however, the primary settlements were likely permanently occupied (Dudek 2021, page 21). As with the Yokuts, the Plains Miwok were organized into tribelets, although the basic social unit was the patrilineal extended family. The Plains Miwok are somewhat better documented ethnographically than either the Yokuts or Ohlone, though not nearly as well documented as the Eastern Miwok groups of the Sierra Nevada foothills.

In general, the ethnographic groups surrounding project site shared very similar subsistence and settlement systems relying on intensive processing of vegetal resources in addition to a reliance on riverine or marine resources when plentiful. However, dialects and other social practices did vary in non-trivial ways. Unfortunately, the effects of missionization have made more detailed reconstruction of the lifeways and social practices of ethnographic period inhabitants of the region very difficult.

Historic Period Context

This historic context is provided to ascertain the significant themes present, which are used to understand any identified previously recorded or newly documented resources in the APE.

Spanish Period (1769 to 1822)

As early as 1769, the Spanish explorer José Francisco Ortega led an expedition through present-day Alameda County. Other Spanish expeditions in the region were led by Pedro Fages, Juan Bautista de Anza, and Pedro Font. During this period, the Spanish began to set up a series of missions and presidios along the California coast, including Misión del Gloriosísimo Patriarca Señor San Jose (currently known as Mission San Jose), located just north of San Jose and approximately 24 miles to the west of the study area. The presidios served as military forts for protection from competing interests and the native population. Once the missions and presidios were established, the government set up secular towns (pueblos) nearby and populated them with colonists from Mexico. The missions served as agricultural and educational centers for the surrounding rural area (Dudek 2024dddd, page 37).

Mexican Period (1822 to 1848)

In 1822, Mexico gained independence from Spain. The mission system was secularized in 1834 and Mexico granted large tracts of land to individuals and families, resulting in the rancho system becoming more widely established throughout present-day California. Vast tracts of land granted in the vicinity of the study area included the 8,880-acre Rancho Las Positas (located west of the study area), which then Mexican Governor Juan Alvarado granted to Robert Livermore and Jose Noriega in 1839. Rancho Cañada de los Vaqueros granted to Manuel Micheltorena in 1844 and located north and west of the study area between the present day Bethany and Los Vaqueros Reservoirs. Rancho El Pescadero, patented by Andres Pico and H. M. Nagle in 1865, was located to the northeast of the study area in what is now San Joaquin County. Cattle ranching dominated other agricultural activities and the development of the hide and tallow trade with the United States increased during the early part of this period (Dudek 2024dddd, page 37; NAHC 2025).

In 1848, the United States defeated Mexico in the Mexican War, and Mexico surrendered its Alta California land through the Treaty of Guadalupe Hidalgo. That same year, the Gold Rush brought hundreds of immigrants to the state and San Francisco Bay became one of the world's busiest seaports, dominating shipping and transportation in the American West until the last years of the nineteenth century. Attracted by the fertile land and mild climate of the Bay Area, many miners chose to stay to start a new life. The region, including the study area, soon became one of the leading agricultural hubs of California, with agriculture, dairy farming, and livestock grazing serving as the principal industries of the period. The bay's regional importance only increased once the transcontinental railroad extended its western terminus to Alameda on September 6, 1869 (Dudek 2024dddd, page 37).

American Period (post-1848)

Early in 1853, Alameda County separated from Contra Costa and Santa Clara counties and, in June of that year, the eastern part of the county was established (one of five townships) and named Murray Township for an early non-native inhabitant, Michael

Murray. Murray Township saw increased settlement, especially in the Livermore Valley. This coincided with the breaking up of the big ranchos which began after 1850. Complicated rules and laws pertaining to rancho ownership contributed to the decline of the rancho and by the late nineteenth century, very few ranchos remained intact as settlers moved into the surrounding towns and hamlets. Where the project is located and surrounding areas, the typical parcel ranged from a quarter section (160 acres) to a section (640 acres) of land, with several containing more than 1,000 acres. In the valleys, 80- to 160-acre farms were the norm, although larger holdings ranging up to several thousand acres were not uncommon. While most valley farms included buildings, few of the hill parcels, which were mostly used for livestock grazing, had been improved with the addition of buildings (Dudek 2024dddd, pages 37–38).

Alameda County has 14 incorporated cities and several unincorporated communities, and Oakland is the county seat. Presently, the total population of Alameda County is approximately 1,628,997 (Alameda County 2024b).

Midway and the Midway Public School. In 1862, the U.S. government granted 160 acres of land in the Midway area of Alameda County to Franz (Frank) Haera (also Heara), who immigrated from Germany in 1856. Haera was one of the earliest non-native inhabitants in the area, and he built and operated the Zinc House, a tavern along the stagecoach trail that extended from the Bay Area to the mines in Livermore Valley. In 1868, the Western Pacific Railroad constructed tracks through the hills surrounding the Midway area and, in 1869, the Midway Station was built. The new rail station encouraged settlement, and the area developed into a small community of ranchers and farmers. New settlers in the 1870s included Reinhold Haera, half-brother of Franz, and Michael Mulqueeney, an immigrant from Ireland. By the time of his death in 1884, Mulqueeney had a sheep ranch that amassed over 5,000 acres, which he left to his wife and three sons upon his death (Dudek 2024dddd, page 38).

In 1872, Franz and Reinhold Haera and Michael Mulqueeney petitioned the Alameda County Board of Education to establish new boundaries and construct a new school to serve the growing Midway area. The Midway School District was established and, by 1878, the district elected Franz Haera and Henry Carstens as District School Trustees (Dudek 2024dddd, page 38). In 1881, the district approved funds provided by a special tax applied to the Central Pacific Railroad for the construction of the school. Carpenter H. B. Goochey constructed the Midway Public School, at a cost of $1,100, on a parcel close to Patterson Pass Road and Midway Road deeded to the Central Pacific Railroad. The school operated from 1883 to 1946, when it was closed due to lack of enrollment. In the 1950s, the Mulqueeney family relocated the schoolhouse to their ranch (Dudek 2024dddd, page 38).

Pacific Gas and Electric Company. In the first decades of the twentieth century, the rapid spread of electric power fueled the growth of American industry and brought with it an unprecedented standard of living. Gas lighting was commonplace in major American cities by the middle decades of the nineteenth century, but in the second half of that century, inventions and innovations by Thomas Edison, Nikola Tesla, George

Westinghouse, and others made it possible for virtually every town in the United States to have electricity. These advancements made possible the long-distance transmission of power which was first demonstrated by the success of the 22-mile transmission line installed between Folsom and Sacramento, California, in 1895. In California, the state's resources and geography made the long-distance transmission of hydropower both practical and necessary (Dudek 2024dddd, page 38).

In many ways the history of PG&E parallels the history of twentieth-century California. Incorporated in San Francisco in 1905, PG&E has helped shape the utility industry and played an important role in the growth and development of the state's economy. The company began as the merger of two power-holding companies: (1) the San Francisco Gas and Electric Corporation, one of San Francisco's oldest corporations, and (2) the California Gas and Electric Corporation, a relatively recent consolidation. San Francisco Gas and Electric owned steam-power generating facilities that complemented California Gas and Electric's hydroelectric resources by picking up the slack during peak periods and when winter freeze or summer drought reduced the flow of water through the company's turbines in the Sierra. By 1930, PG&E had become one of the state's largest landowners, one of the nation's largest hydroelectric producers, and a major supplier of natural gas for home and industry (Dudek 2024dddd, pages 38–39).

The virtue of long-distance transmission of electricity is the ability to move the power at high volumes and then step it down before delivery to the user. To accomplish this and other tasks, such as transferring bulk power around a utility network, electrical utility companies built distribution substations at various points along the transmission lines to decrease the power or to accumulate and transfer power from various sources. With its hydropower sources located in the Sierra Nevada, PG&E could send high-voltage power more than 100 miles along its transmission lines then step it down before delivering to the customer. California differed from other parts of the country in other ways as well. In the East and Midwest, for example, most power came from fossil fuels. When power demand dropped, companies could shut down facilities. In California, it became more practical to keep the hydropower plants running whenever possible and to develop new classes of customers that would use power at different times (Dudek 2024dddd, page 39).

At the beginning of the twentieth century, the Bay Area was the state's most heavily populated and industrialized region, and more than 60 percent of California's 1.5 million people lived in urban areas. California's growth was explosive. Between 1900 and 1910, California added almost 900,000 people and more than 1 million in the following decade. While people moved toward the cities, agricultural production also grew. Since the beginning of the twentieth century, farmers had been adapting electricity to their poultry operations, dairy farms, and replacing windmills with steam, gasoline, and then electric pumps. The 1910s brought a more systematic approach to the development of irrigation in California, especially in the Central Valley. PG&E worked with water users to generate power from the water before it was released into irrigation canals. This process would accelerate in the following decades as the state and federal governments

would play an increasingly active role in the development of water and power (Dudek 2024dddd, page 39).

PG&E invested in waterpower even while the price of steam power dropped as the crude oil industry matured and prices for fuel oil declined. By the end of the 1910s, the company supplied more than one-third of the power in the state. With America's direct involvement in World War I in 1917, fears that the diversion of fuel oil and the inability to meet an expected upsurge in demand led the California State Railroad Commission (precursor to the Public Utilities Commission) to insist that power companies interconnect transmission lines to increase power availability. First implemented in California, the concept of superpower would spread throughout the United States during and after the war. When PG&E and Southern California Edison introduced extra high-voltage transmission lines in 1924, the age of superpower had arrived in earnest (Dudek 2024dddd, page 39).

As the state's population grew and became more urbanized in the 1910s, the demand for electrical power increased for everything from home appliances to industrial presses. As a result, PG&E expanded its hydroelectric capacity on the South Yuba and Bear Rivers and built the Drum-Cordelia-Marin power transmission line to bring the power to the north end of the Bay Area. It also constructed the Newark Substation, a modern substation and switching station near the East Bay town of Newark, to accommodate power from the Halsey and Wise powerhouses on the South Yuba River in Placer County. The Wise Tower line carried power from the South Yuba powerhouses through the Newark Substation to the southern end of the bay. As additional power from its Salt Spring and Tiger Creek powerhouses on the Mokelumne River came online in the early 1930s, the company expanded the Newark Substation to receive power flowing into the station from the 110-mile transmission line built from the Sierra foothills (Dudek 2024dddd, pages 39–40).

In the early 1920s, the company began to refer to itself as P.G. and E. Company through the publication of its monthly newsletter, P.G. and E. Progress. The company reinforced its commitment to California with the construction of a 17-story headquarters building in 1925, designed by the renowned architectural firm of Bakewell and Brown. The structure reflects the era's emphasis on beauty and the company's focus on design and functionality, evident in nearly everything the company built in its first decades, including its power plants, substations, and other transmission facilities. In the first decades of the twentieth century, PG&E adapted the Spanish Renaissance style of architecture for many of its structures because it suggested the company's linkage to the pioneer era of California. The Halsey and Wise powerhouses and the Newark Substation were typical in this regard (Dudek 2024dddd, page 40).

California became virtually self-sufficient in energy in the 1930s. The company's discovery of natural gas supplies and its completion of a pipeline from Southern California to San Francisco and one from the gas fields in Texas to California were supplemented in the 1930s by California's maturing oil industry and the completion of Shasta and Hoover dams. However, by the 1940s, World War II growth in population

and industrial production left the state in need of new energy supplies. The war helped establish momentum for steam power in California and, as cheap oil became available after the war, nearly three-quarters of all planned and newly built generating capacity in the state was designed for thermal steam power (Dudek 2024dddd, page 40).

In the decade after World War II, PG&E embarked on an unprecedented building program. California's population grew by more than 50 percent in the 1940s to nearly 10.5 million people in 1950. PG&E added more than 125,000 new customers in that year alone, its largest customer increase on record. The company spent more than $1 billion on construction projects including new steam plants in San Francisco, Bakersfield, Eureka, and at Moss Landing on Monterey Bay, as well as 14 new hydro powerhouses on the Pit, Feather, and Yuba rivers. In addition to new power facilities, the company expanded and remodeled several older facilities and added new substations. The Vaca-Dixon Substation (Solano County), dating to the 1910s, was connected to a new substation in Moraga (Contra Costa County), and new substations at Midway and Tesla (Alameda County) were built to control delivery of power from the northern to the southern San Joaquin Valley (Dudek 2024dddd, page 40).

As fuel prices climbed in the 1960s and 1970s, and the environment became a higher priority among Americans, the company turned its focus toward conservation and alternative energy sources. In 1978, the Public Utility Regulatory Policies Act mandated that utilities buy power from independent producers at prices set by state utility commissions. In the 1980s, the company began purchasing energy created by wind turbines, located primarily in the Altamont Pass area, and by the end of the 1980s had become the country's largest purchaser of alternative energy. The company has also since became an industry leader in conservation and alternative energy sources. Energy created in the wind turbine farm at Altamont, for example, is funneled through its Tesla Substation, where it is distributed throughout the network. In 1985, PG&E opened the Diablo Canyon Power Plant, the company's second nuclear-powered facility (Dudek 2024dddd, page 40).

In 1995, PG&E became a subsidiary of the PG&E Corporation. Since passage of the Public Utility Regulatory Policies Act, many of the company's largest customers dropped PG&E in favor of independent energy producers or built their own power facilities. As a result, the company lost significant revenue in the last decade of the century and found itself with a significant surplus of energy. PG&E relied on a "grow and build" strategy for most of its first century and, like the state of California, its growth was spectacular at times. Presently, the company's focus is on maintaining its system as well as conservation and alternative energy sources (Dudek 2024dddd, pages 40–41).

Development of Tesla Substation. Construction of Tesla Substation began in 1947 and was completed in 1948. Originally planned for only 38 acres, the first three buildings constructed were a temporary construction warehouse, shop building, and control building. To the north of these buildings were the associated bus, switch, and other electrical transmission structures. In 1947, PG&E's plans to spend $55 million toward expanding its facilities and transmission lines into the San Joaquin Valley

included the construction of Tesla Substation. As technology improved, electrical demands increased, and wind-generators increased in numbers in the area, PG&E continued to expand and construct updated control rooms as well as bus/switch structures at the substation in the late-1950s, 1960s, 1980s, and 1990s (Dudek 2024dddd, page 41).

Regulatory

Federal

Section 106 of the National Historic Preservation Act. Federal permits are required; the Army Corps of Engineers and the Applicant are responsible for conformance to federal laws and regulations.

State

California Register of Historical Resources (Pub. Resources Code § 5024.1). A historical resource is defined as a "resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources", or "a resource included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code," or "any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the agency's determination is supported by substantial evidence in light of the whole record." (Cal. Code Regs., tit. 14, § 15064.5[a]). Historical resources that are automatically listed in the California Register of Historical Resources (CRHR) include California historical resources listed in or formally determined eligible for the National Register of Historic Places NRHP and California Registered Historical Landmarks from No. 770 onward (Pub. Resources Code, § 5024.1(d)).

Under the CRHR a resource is generally considered historically significant in addition to being at least 50 years old, a resource must meet one or more of the following four criteria (Pub. Resources Code, § 5024.1):

- Criterion 1, is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Criterion 2, is associated with the lives of persons important in our past;
- Criterion 3, embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- Criterion 4, has yielded, or may be likely to yield, information important in prehistory or history.

The CRHR also includes the following:

- properties determined eligible for or listed in the National Register of Historic Places.
- a resource included in a local register of historical resources or identified in a historical resources survey.
- any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant.
- Points of Historical Interest and State Historical Landmarks with a number greater than No 770.

California Environmental Quality Act (Pub. Resources Code, § 21084.1)

- The California Environmental Quality Act (CEQA) requires lead agencies to determine if a project could have a significant impact on historical or unique archaeological resources. CEQA establishes that an impact that results in a substantial adverse change in the significance of a historical resource is considered a significant impact on the environment. A substantial adverse change could result from physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired (Cal. Code Regs., tit. 14, § 15064.5 (b)(1)). Material impairment is defined as demolition or alteration in an adverse manner [of] those characteristics of a historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the CRHR or a local register (Cal. Code Regs., tit. 14, § 15064.5(b)(2)(A)).

Additional Considerations

In addition, historical resources must also possess integrity of location, design, setting, materials, workmanship, feeling, and association (Cal. Code Regs., tit. 14, § 4852(c)).

Even if a resource is not listed or determined to be eligible for listing in the CRHR, CEQA requires the lead agency to decide whether the resource is a historical resource as defined in Public Resources Code, sections 5020.1(j) or 5024.1.

In addition to historical resources, archaeological artifacts, objects, or sites can meet CEQA's definition of a unique archaeological resource, even if the resource does not qualify as a historical resource (Cal. Code Regs., tit. 14, § 15064.5(c)(3)). Archaeological artifacts, objects, or sites are considered unique archaeological resources if it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that the resource meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type

3. Is directly associated with a scientifically recognized important prehistoric or historic event or person. (Pub. Resources Code, § 21083.2[g])

To determine whether a proposed project may have a significant effect on the environment, CEC staff analyzes the project's potential to cause a substantial adverse change in the significance of historical or unique archaeological resources. The magnitude of an impact depends on:

- the affected historical resource(s);
- the specific historic significances of any potentially impacted historical resource(s);
- how the historical resource(s) significance is manifested physically and perceptually;
- appraisals of those aspects of any historical resource's integrity that figure importantly in the manifestation of the resource's historical significance; and
- how much the impact will change historical resource integrity appraisals.

Title 14, California Code of Regulations, section 15064.5(b) defines a "substantial adverse change" as the "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired."

California Native American Tribes, Lead Agency Tribal Consultation Responsibilities, and Tribal Cultural Resources

CEQA defines what constitutes a California Native American tribe for the purposes of the act, lead agency responsibilities to consult with California Native American tribes, and tribal cultural resources. In 2014, CEQA was expanded to include the category tribal cultural resource. A project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment (Pub. Resources Code, § 21084.2). It further states the CEQA lead agency shall, when feasible, avoid damaging effects to any tribal cultural resource (Pub. Resources Code, § 21084.3).

If consultation is requested, CEQA lead agencies are required to consult with tribes about potential tribal cultural resources, a recognized category of "historical resources" within the Survey Area and immediately surrounding area, the potential significance of project impacts, the development of project alternatives, and the type of environmental document that should be prepared.

A "California Native American tribe" is a "Native American tribe located in California that is on the contact list maintained by the Native American Heritage Commission (NAHC) for the purposes of Chapter 905 of the Statutes of 2004" (Pub. Resources Code, §21073). Lead agencies implementing CEQA are responsible for consultation with California Native American tribes about tribal cultural resources within specific timeframes, observant of tribal confidentiality, and if tribal cultural resources could be

impacted by a CEQA project, are to exhaust the consultation to points of agreement or termination.

Tribal cultural resources are either of the following:

1. Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
   a. Included or determined to be eligible for inclusion in the CRHR
   b. Included in a local register of historical resources as defined in the Public Resources Code, section 5020.1(k)
2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in the Public Resources Code, section 5024.1(c). In applying these criteria, the lead agency shall consider the significance of the resource to a California Native American tribe. (Pub. Resources Code, § 21074(a)).

To qualify as a tribal cultural resource, a resource must be: 1) listed on or eligible for listing on the CRHR or a local historic register, or 2) a resource that the lead agency, at its discretion and supported by substantial evidence, determines should be treated as a TCR (Pub. Resources Code § 21074). Tribal cultural resources include "non-unique archaeological resources" that, instead of being important for "scientific" value as a resource, can also be significant because of the sacred and/or cultural tribal value of the resource. Tribal representatives are considered experts appropriate for providing substantial evidence regarding the locations, types, and significance of Tribal cultural resources within their traditionally and cultural affiliated geographic area (Pub. Resources Code § 21080.3.1(a)). A cultural landscape that meets the criteria of Public Resources Code, section 21074(a), is a tribal cultural resource to the extent that the landscape is geographically defined in terms of its size and scope (Pub. Resources Code, § 21074(b)). Historical resources, unique archaeological resources, and non-unique archaeological resources, as defined at Public Resources Code, sections 21084.1, 21083.2(g), and 21083.2(h), may also be tribal cultural resources if they conform to the criteria of Public Resources Code, section 21074(a).

Health and Safety Code, § 7050.5. In the event of the discovery of human remains outside of the context of a formal cemetery, the California Health and Safety Code, section 7050.5 requires that construction be halted and that the coroner be notified. Requires the coroner to notify the Native American Heritage Commission (NAHC) i remains are determined to be Native American in origin.

Public Resources Code, § 5097.98. In the event human remains are discovered, the Public Resources Code, section 5097.98 authorizes the NAHC to assign a Most Likely Descendant (MLD). Requires that the landowner ensure the discovery is not further damaged and the MLD then may, with the landowner's permission, inspect the find and make recommendations for the culturally appropriate treatment or disposition of the human remains and any associated grave goods. The landowner shall confer with the

MLD all reasonable options regarding the MLD's preferences for treatment. Where the parties are unable to agree on the appropriate treatment measures, the Native American human remains and associated items shall be reinterred on the property with appropriate dignity. In the event human remains are discovered, the Public Resources Code, section 5097.98 authorizes the NAHC to assign a Most Likely Descendant (MLD). Requires that the landowner ensure the discovery is not further damaged and the MLD then may, with the landowner's permission, inspect the find and make recommendations for the culturally appropriate treatment or disposition of the human remains and any associated grave goods. The landowner shall confer with the MLD all reasonable options regarding the MLD's preferences for treatment. Where the parties are unable to agree on the appropriate treatment measures, the Native American human remains and associated items shall be reinterred on the property with appropriate dignity.

Local

Alameda County Register. The Alameda County Register is a list of landmarks, historic preservation districts, contributing resources, and structures of merit. A resource eligible for listing on the Alameda County Register must meet one or more of the following criteria:

a. It is associated with events that have made a significant contribution to the broad patterns of the history of the County, the region, the state or the nation
b. It is associated with the lives of persons significant in the County's past
c. It embodies the distinctive characteristics of a type, period or method of construction
d. It represents the work of an important creative individual or master
e. It possesses high artistic values
f. It has yielded, or may be likely to yield, information important in the prehistory or history of the County, the region, the state or the nation

The resource must have integrity of location, design, setting, materials, workmanship, feeling, and association. Integrity shall be judged with reference to the particular criterion or criteria specified above (Alameda County 2024a).

Methods to Identify Cultural and Tribal Cultural Resources

Literature Review Methods

Records Search

Records searches of the California Historical Resources Information System (CHRIS) were completed for the current proposed project site and a 1-mile radius on behalf of Dudek by staff at the Central California Information Center (San Joaquin County) and the Northwest Information Center (Alameda County) on August 1 and 30, 2023. These

searches included a review of their collections of mapped California Native American, historical, and built-environment resources, Department of Parks and Recreation (DPR) 523 forms, technical reports, historical maps, and local inventories. Additional consulted sources included the National Register of Historic Places (NRHP), California Inventory of Historical Resources/CRHR and listed California Office of Historic Preservation (OHP) Archaeological Determinations of Eligibility, California Points of Historical Interest, and California Historical Landmarks.

Built Environment Resource Directory

The OHP maintains the Built Environment Resource Directory, an inventory of built environment cultural resources that are processed through OHP's office. An October 10, 2024, search of the Built Environment Resource Directory for Alameda County showed that several resources pertaining to the Western Pacific Railroad/Union Pacific Railroad (WPRR/UPRR) were previously recorded and evaluated within Alameda County. However, none of these resources are within the study area.

ParcelQuest

ParcelQuest provides California county assessor's property data from all 58 California counties. On October 29, 2025, the CEC staff reviewed ParcelQuest for relevant assessor information pertaining to subject properties.

Historical Aerials

CEC staff consulted aerial photographs to understand development of the proposed project site and surrounding properties. Aerial photographs were available for the project area from 1949, 1957–1959, 1966, 1968, 1971, 1979, 1981, 1982, 1987, 1993, 2005, 2009, 2010, 2012, 2014, 2016, 2018, and 2020 (NETR 2024a). The aerial images are consistent with the topographic maps (discussed below), with the 1949 image showing an undeveloped project area with Patterson Pass Road, the paved road/driveway to the residential property to the south of the project area, and a drainage parallel to and immediately east of Patterson Pass Road all visible. A small electrical substation is also visible along Patterson Pass Road to the north of the project area. No changes are evident within the project area or immediate vicinity until 1966 at which time the substation expands to the south and further expands west to its current footprint in the 2005 image. No other development is evident within the project area on any of the aerial images.

Historical Maps

Topographic maps were available from 1907, 1914, 1929, 1941–1943, 1948, 1955, 1964, 1969, 1975, 1981, 1986, 2012, 2015, 2018, and 2021 (NETR 2024b). The earliest topographic map depicts Patterson Pass Road and the north–south-running road on the western edge of the substation in their present orientation, with two drainages running parallel to and just east of each of the roadways. No other development is evident within the project area or its immediate surroundings. The 1943 topographic map is the first to depict the residential structure located south of the project site, as well as

several other structures to the northeast along Patterson Pass Road; however, there are no evident changes or development within the project area itself. The 1955 topographic map is the first to depict the Tesla Substation that intersects and is immediately north of the project. Transmission lines associated with the substation are depicted to the east of, but not intersecting, the project. No further changes are evident on any of the subsequent topographic maps. CEC staff also reviewed historic maps of Alameda County from the David Rumsey Map Collection, but the maps did not contain any information relevant to the development of the subject properties.

Tribal Outreach and Consultation

Applicant Tribal Outreach Methods

On August 1, 2023, Dudek requested a search of the NAHC's Sacred Lands File for the area of the project site. The NAHC results, received August 12, 2023, indicated the Sacred Lands File search failed to identify any cultural resources within the records search area (Dudek 2024dddd, Confidential Appendix B). The NAHC then provided a list of Native American tribes culturally affiliated with the location of the project site and recommended contacting them for further information. On October 3, 2024, tribal information request letters were sent to the listed tribes with no responses received. In addition, tribal consultation in support of Section 106 of the NHPA has been initiated by the U.S. Army Corp of Engineers (Dudek 2024dddd, page 43).

CEC Tribal Outreach and Consultation

CEQA requires consideration of impacts to tribal cultural resources as part of the CEQA process and requires the CEQA lead agency to notify any groups (who have requested notification) of the project who are traditionally or culturally affiliated with the geographic area of the project. The CEC staff, pursuant to their responsibilities under CEQA, contacted the NAHC to obtain an updated contact list and Sacred Lands File search. The NAHC responded on September 9, 2024, with negative results for the Sacred Lands File search and a list of Native American tribes culturally affiliated with the location of the project site and recommended contacting them for further information. The CEC sent initial informational notification letters on September 30, 2024. Once the application was deemed complete, official consultation letters were mailed on August 15, 2025, with follow-up e-mails sent on September 9, 2025, to one or more representatives from the following tribes:

- Northern Valley Yokut/Ohlone Tribe
- Amah Mutsun Tribal Band
- Confederated Villages of Lisjan Nation
- Muwekma Ohlone Tribe of the San Francisco Bay Area
- The Ohlone Indian Tribe
- Tule River Indian Tribe
- Wilton Rancheria

- Wuksachi Indian Tribe/Eshom Valley Band

On September 30, 2024, an e-mail requesting a desire to consult was received from the Confederated Villages of the Lisjan Nation. The CEC staff responded on October 8, 2024, acknowledging their request to consult. On October 3, 2024, an e-mail was received from the Northern Valley Yokut Tribe requesting consultation on the project. The CEC staff sent a response on October 8, 2024, acknowledging their desire to consult. On September 2, 2025, an email was received from Wilton Rancheria stating they do not wish to open consultation at this time. The CEC staff acknowledged their letter with an e-mail on September 2, 2025. On September 22, 2025, an e-mail was received from a representative from the Muwekma Ohlone Tribe of the San Francisco Bay Area with a list of tribal contacts and services and a request that the CEC update their mailing list. No other responses have been received, and consultation is on-going.

Historical Society Review

Alameda County Historical Society

The Alameda County Historical Society was established in 1965 to "foster and encourage interest in the history of Alameda County; to publish and to aid in the publication of materials designed to preserve historical data and to increase the general knowledge of the history of the county; to provide opportunities for sociability among members of the Society; and to encourage coordination and cooperation with other history organizations" (ACHS 2025). On October 23, 2025, the CEC staff reviewed the list of local landmarks on the Alameda County Historical Society website. None of the resources in the APE or the 0.5-mile built environment study area were listed as local landmarks.

Livermore Heritage Guild

The Livermore Heritage Guild (LHG) was founded in 1973 by Livermore residents who mobilized to preserve the local train depot, and the group later transformed into Livermore's historical society. LHG collects and preserves local historical artifacts, photos, and documents, serving as a resource for local history and family background history (LHG 2025). On October 23, 2025, the CEC staff reviewed the LHG website for relevant information on the subject properties. The LHG website contained historic photographs of the Midway Public School.

Field Investigation Methods

On October 11, 2023, Dudek archaeologists Gregory Wada and Victoria Martin conducted an intensive pedestrian survey of the project area using standard archaeological procedures and techniques that meet the Secretary of the Interior's Standards and Guidelines for cultural resources inventory. On October 2, 2024, Victoria Martin conducted additional intensive pedestrian survey for the required buffer surrounding the project area. During both archaeological surveys, exposed ground surfaces were observed for surface artifacts, undisturbed areas, archaeological deposits,

and historic structures; periodic boot scrapes were employed to expose additional ground surface. Evidence of artifacts and archaeological deposits were also opportunistically sought after in animal burrows and other areas with disturbed soil.

On behalf of the applicant, Dudek architectural historian Claire Flanegin, M.A., conducted an intensive survey of the project area on October 2, 2024. Claire Flanegin meets the Secretary of the Interior's Professional Qualifications Standards for architectural history and history. The survey entailed documenting the exteriors of each property with notes and photographs, specifically noting character-defining features, spatial relationships, and observed alterations, and examining any historic landscape features. Access was granted for Assessor's Parcel Number 99B-7925-2-1. The remaining survey was conducted from the public right-of-way.

Results of Investigation

The Northwest Information Center and Central California Information Center records indicate that 38 previous cultural resources technical investigations have been conducted within 1 mile of the proposed project site, of which 18 have included portions of the proposed project site.

The records search indicates that one built-environment resource is on file within the project site, P-39-005337, Tesla-Salado-Manteca 115-kilovolt (kV) Transmission Line, and an additional 30 archaeological or built-environment resources are recorded within the 1-mile record search buffer. Only one of these resources consists of a precontact indigenous site while the remaining resources are historic-era structures. The Tesla Substation (P-01-010502), also within the project area, and the Kelso to Tesla Transmission Line DPR 523 form sets were not submitted to the CHRIS and, therefore, did not come back as part of the records search results. Copies were obtained through a request to PG&E cultural resources staff.

Archaeological Survey

Surface visibility was low (less than 10 percent) throughout the project site due to dense non-native grasses. The previously recorded transmission lines intersecting the project site were relocated and found to be in the same condition as described in the site record. No archaeological resources were observed within the project site during the field survey or identified from the records check.

Built Environment Survey

Two resources are in the project area: the Tesla Substation and Tesla Substation Butler Building (P-01-010502) and the Tesla-Salado-Manteca 115-kV Transmission Line (P-39-005337) which crosses the project area. The remaining 12 resources are within the Built Environment project APE. Each resource was evaluated in accordance with the California Code of Regulations, title 14, section 1515064.5(a)(2)–(3), using the criteria outlined in the Public Resources Code, section 5024.1. Only one resource in the study area, the Mulqueeney Ranch, is a newly recorded resource. Only the 500-kV

Transmission Lines (P-01-010499) are eligible for the CRHR or the Alameda County Register. Two additional resources, the WPRR/UPRR (P-39-000098) and the Midway Public School (P-01-012147) are significant under one or more criteria of the CRHR and the Alameda County Register, however, neither retain sufficient integrity to convey this significance. Therefore, they are not historical resources under CEQA.

TABLE 5.4-1 BUILT ENVIRONMENT RESOURCES IN THE PROJECT AREA

Name or Identification	Proximity to project Site	Description	Eligibility Recommendation
P-01-010502	Within project Area	Tesla Substation and Tesla Substation Butler Building	Not eligible
P-01-010499	Within APE	500-kV Transmission Lines	Eligible
P-01-010500	Within APE	Haera Brockman-Griffith Ranch	Not eligible
P-01-010614	Within APE	Midway Road	Not eligible
P-01-010947	Within APE	Pittsburg-Tesla Transmission Line	Not eligible
P-01-011395	Within APE	Tracy-Tesla 230-kV Transmission Line	Not eligible
P-01-011479	Within APE	Transmission Line	Not eligible
P-01-011480	Within APE	Transmission Line	Not eligible
P-01-012147	Within APE	Midway Public School	Not eligible
P-39-000098	Within APE	Western Pacific/Union Pacific Railroad	Not eligible
P-39-004290	Within APE	Historic Telegraph Line	Not eligible
P-39-005337	Within project Area	Tesla-Salado-Manteca 115-kV Transmission Line	Not eligible
N/A	Within APE	Kelso to Tesla Transmission Line	Not eligible
N/A	Within APE	Mulqueeney Ranch	Not eligible

P-01-010502 Tesla Substation

This 75-acre property consists of the Tesla Substation and its associated switches, bus terminals, transformers, and wiring, as well as three-historic-era buildings located on the northern perimeter of the property, and two modern-era buildings. A combination of walls and fencing surrounds the property. Building number one is a single-story rectangular prefabricated metal building with a side-gabled corrugated metal roof. There are louvered vents beneath the gables, and steel-frame casement windows covered by metal security bars. The building sits on a concrete slab foundation. Building number one was originally constructed circa 1948 as a temporary construction warehouse. Building number two is located to the east of Building number 1. It is a concrete-masonry-unit building with a rectangular plan and a flat roof. The windows are steel-frame casement windows. There is a pair of modern utility lights on the north side of the building, and a modern roll-up door and a single-entry personnel door on the east side of the building. This building was built in 1948, as a shop building and may have been moved from west side of the gate. Building number three is a concrete masonry building with a basic T-plan and a flat roof. A set of metal double doors is on the west side of the building, and a single-entry metal door is on the east side of the building. This building was built after 1953 as a control building for the substation. Construction of the substation began in 1947 as part of PG&E's plans for expansion into

the San Joaquin Valley following the end of World War II. It was completed in 1948. Originally, the substation was planned for 38 acres, however the resource currently spans almost seventy acres (Dudek 2024dddd, Appendix C, P-01-010502 DPR 523 Form).

Evaluation. The Tesla Substation and Tesla Substation Butler Building were evaluated using the NRHP and the CRHR criteria in 2011 by AECOM as part of the PG&E's proposed Kelso to Tesla 230-kV Reconductoring project. AECOM recommended the Tesla Substation and Tesla Substation Butler Building as ineligible for listing on the NRHP or CRHR. Both the CEC staff and the project applicant's consultant concur with this evaluation. Additionally, this resource is not eligible for the Alameda County Register, which contains nearly identical criteria to the NRHP and CRHR (Dudek 2024dddd, Appendix C, P-01-010502 DPR 523 Form).

The Tesla Substation does not have any known significant association with any significant historic events or historic patterns. While the Tesla Substation was built during a period of community development in the region, a mere association with community development is not significant because all PG&E's infrastructure has a basic association with some aspect of California's development. As such the Tesla Substation is not eligible under Criterion 1 of the CRHR or Criterion A of the Alameda County Register. This resource has no known important associations with the lives of any people or groups of people significant to history. As such the Tesla Substation is not eligible under Criterion 2 of the CRHR or Criterion B of the Alameda County Register. The Tesla Substation is not a significant example of any type, period, or method of construction, nor was it designed by a master architect or master engineer. It is also a ubiquitous property type for PG&E and lacks technological innovation and architectural merit. As such, it is not eligible under Criterion 3 of the CRHR or Criterion C of the Alameda County Register. The Tesla Substation is not a source of significant information regarding history, nor does it appear to have any likelihood of yielding important information about construction materials or technologies. As such the Transmission Line is not eligible under Criterion 4 of the CRHR or Criterion D of the Alameda County Register. The Transmission Line is not a historical resource under CEQA.

P-01-010499 500-kV Transmission Lines

This resource consists of two 500-kV transmission line segments that connect to the Tesla Substation in northeastern Alameda County: (1) the Vaca Dixon-Tesla line and (2) the Table Mountain-Tesla line. A 0.25-mile and a 0.32-mile-long segment of each of these respective transmission lines lies within the built environment APE. The Vaca Dixon-Tesla line extends for 57 miles outside of the APE and the Table Mountain-Tesla line extends for 134 miles outside of the APE. The towers are galvanized steel, measuring between 106 and 116 feet in height and feature 2-bundled conductors. These transmission lines were built as part of a project authorized in 1964 by Congress known as the Pacific Northwest-Southwest Intertie—a major effort to develop increased electrical interconnection. In 1968 the Pacific Northwest-Southwest Intertie was

described as "the most exciting transmission project of this century" (Dudek 2024dddd, Appendix C, P-01-010499 DPR 523 Form). The applicant's consultant observed no changes since these structures were last recorded.

Evaluation. These transmission lines were previously recorded in 2002. The survey suggested that the lines may be eligible for the CRHR, but did not evaluate the resources for the CRHR or the Alameda County Register. The applicant's consultant evaluated the power lines and concluded that the resource meets NRHP/CRHR/Alameda County Register criteria A/1/A and C/3/C. CEC staff concurs with this evaluation. The 500-kV Transmission Lines are associated with PG&E's efforts that began in the early 1960s to develop increased electrical interconnection with a 500-kV line as part of the "Pacific Intertie" program. The resource is part of the transmission corridor that extends from Northern California to an interconnection with Southern California Edison in Kern County. It has a direct physical and operational association to a key technological innovation; the development of the Pacific Intertie program that helped shape patterns of electrical generation and consumption. Properties noted to be associated with such a significant trend are eligible under this criterion within the theme of technological innovation during PG&E's transmission era and the conversion to using 500-kV transmission lines in the years between 1960 and 1970. As such, the 500-kV Transmission Lines are eligible under Criterion 3 of the CRHR or Criterion C of the Alameda County Register (Dudek 2024dddd, page 55-56).

This resource has no known important associations with the lives of any people or groups of people significant to history. As such the 500-kV Transmission Lines are not eligible under Criterion 2 of the CRHR or Criterion B of the Alameda County Register. The 500-kV Transmission Lines consists of utility engineering and design that directly reflect significant advances within the theme of technological innovation because its key constituent components (towers, insulators, conductor) embody leading-edge engineering that allowed for demonstrable and important innovations in voltage regulation, and voltage levels. As such, the 500-kV Transmission Lines are eligible under Criterion 3 of the CRHR or Criterion C of the Alameda County Register. The 500-kV Transmission Lines is not a source of significant information regarding history, nor does it appear to have any likelihood of yielding important information about construction materials or technologies. As such the Transmission Lines are not eligible under Criterion 4 of the CRHR or Criterion D of the Alameda County Register.

The 500-kV Transmission Lines retain sufficient integrity to convey their significance. The line has not been moved, retaining integrity of location. The integrity of design and materials are retained; the original form, function, and physical elements of the resource remain. The setting has not been significantly altered and largely remains rural. The 500-kV Transmission Lines retain their integrity of feeling and association. Integrity of workmanship is not considered an important aspect of integrity for this type or resource. The integrity of setting is more difficult to ascertain for this resource since one of the transmission lines spans approximately 57 miles and the other spans approximately 134 miles. However, the setting of the portions of the transmission lines

within and near the built environment study area largely retain their rural character. The 500-kV Transmission Lines are a historical resource under CEQA.

P-01-010500 Haera-Brockman-Griffith Ranch

The Haera-Brockman-Griffith Ranch is property containing a wood-frame building and multiple outbuildings, a trailer, and other structures constructed after 1979. The wood-frame building has a post and pier foundation and a metal roof. The roof is side gabled and the exterior walls are clad in wood. There is one entrance on the north side of the building and one on the west side of the building. Both entrances have wooden steps.

This property was previously owned by Franz (Frank) Haera, one of the first non-native inhabitants in the region. In 1856, Frank Haera built the Zinc House, a tavern and the first structure in Midway at this location. However, the Zinc House burned down and replaced by the Haera-Brockman-Griffith Ranch in the 1930s. Of the 1930s ranch only the wood-frame residence remains. The ranch originally also included a barn and outbuildings; however, the other buildings are no longer extant (Dudek 2024dddd, page 56-58, Appendix C P-01-010500 DPR 523 Form).

Evaluation. The Haera-Brockman-Griffith Ranch has no specific important associations with significant events or historical patterns. The Haera-Brockman-Griffith Ranch does not have any known significant association with any significant historic events or historic patterns. The property once belonged to Franz (Frank) Haera, one of the first non-native inhabitants in the Midway area who owned the Zinc house, an early Midway area tavern. However, the Zinc House burned down, and the property has not since been used as a tavern. Additionally, of the 1930s ranch buildings, residence, the barn, and the outbuildings, only the residence remains. As such the Haera-Brockman-Griffith Ranch is not eligible under Criterion 1 of the CRHR or Criterion A of the Alameda County Register. While Franz Haera, a significant individual in the history of the Midway area, is associated with the property, all the extant buildings on the Haera-Brockman-Griffith Ranch were built after his death. This resource has no known important associations with the lives of any people or groups of people significant to history. As such Haera-Brockman-Griffith Ranch is not eligible under Criterion 2 of the CRHR or Criterion B of the Alameda County Register. The Haera-Brockman-Griffith Ranch is not a significant example of any type, period, or method of construction, nor is it the work of a master, and it does possess high artistic value. As such Haera-Brockman-Griffith Ranch is not eligible under Criterion 3 of the CRHR or Criterion C of the Alameda County Register. Haera-Brockman-Griffith Ranch is not a source of significant information regarding history, nor does it appear to have any likelihood of yielding important information about construction materials or technologies. As such Haera-Brockman-Griffith Ranch is not eligible under Criterion 4 of the CRHR or Criterion D of the Alameda County Register. The Haera-Brockman-Griffith Ranch is not a historical resource under CEQA (Dudek 2024dddd, page 56-58, Appendix C P-01-010500 DPR 523 Form).

P-01-010614 Midway Road

Midway Road is a paved two-lane road approximately 30 feet wide and flanked by dirt shoulders. Midway Road was constructed around the 1860s but has since been paved and striped. An approximately 0.93-mile segment of this resource is inside of the Built Environment APE (Dudek 2024dddd, page 58-59, Appendix C P-01-010614 DPR 523 Form).

Segments of Midway Road in northeastern Alameda County have been previously recorded. In 2003, PAR Environmental Services, Inc. inventoried a 2-mile-long segment of the road north of the study area. The 2003 inventory did not evaluate Midway Road for eligibility under NRHP/CRHR/Alameda County Register criteria. The applicant's consultant evaluated the road and concluded that the resource does not meet the criteria for the NRHP or the CRHR. The applicant's consultant also evaluated the road using the criteria of the Alameda County Register and concluded that it does not meet any of the criteria, which are nearly identical criteria to those of the NRHP and the CRHR. CEC staff concurs with this evaluation (Dudek 2024dddd, Appendix C P-01-010614 DPR 523 Form).

Evaluation. Midway Road has no specific important associations with significant events or historical patterns. Midway Road was part of the transportation development needed to accommodate the growing ranches and farms in the Livermore Valley in the 1860s and did not play an important role within the general pattern of agricultural or community development in the region. As such Midway Road is not eligible under Criterion 1 of the CRHR or Criterion A of the Alameda County Register. Midway Road has no known important association with the lives of any people or groups of people significant to history. As such Midway Road is not eligible under Criterion 2 of the CRHR or Criterion B of the Alameda County Register. Midway Road is not a significant example of any type, period, or method of construction, nor is it the work of a master, and it does possess high artistic value. As such Midway Road is not eligible under Criterion 3 of the CRHR or Criterion C of the Alameda County Register. Midway Road is not a source of significant information regarding history, nor does it appear to have any likelihood of yielding important information about construction materials or technologies. As such Midway Road is not eligible under Criterion 4 of the CRHR or Criterion D of the Alameda County Register. Midway Road is not a historical resource under CEQA.

P-01-010947 Pittsburg-Tesla Transmission Line

The Pittsburg-Tesla Transmission Line is an approximately 31-mile-long transmission line connecting the Pittsburg Substation in the city of Pittsburg in Contra Costa County and the Tesla Substation in Alameda County. The line consists of riveted steel towers with three horizontal arms/masts mounted to the upper half of the towers. The rectangular and truncated lattice transmission towers rest on four concrete piers. A form of "X" bracing with radiating steel lattice braces is used on opposing sides of the tower for support. The three steel arms, also containing lattice bracing, connect to twisted or elongated insulators attached to high lead cables that transmit electricity

from tower to tower. The towers are mounted on concrete piers. The exact age of this transmission line is unknown, however, it dates prior to 1943 (Dudek 2024dddd, pages 59–61, Appendix C P-01-010947 DPR 523 Form).

Evaluation. In 2008, the line was evaluated and recommended not eligible for the NRHP or the CRHR. In 2017, a portion of the line and towers was recorded and recommended as appearing "eligible as a linear district for the NRHP under criteria A and C, with the towers and lines as contributing elements. The towers and transmission lines do not appear to be individually eligible. Both transmission lines built as early as the late 1920s, were and still are, essential to providing necessary electrical power to businesses and residences in Contra Costa County and the East Bay Area, including the cities of Antioch, Pittsburg, Clayton, Walnut Creek, Lafayette, and Moraga during a significant period in the region's growth, namely the 1920s through late -1940s" (Dudek 2024dddd, Appendix C P-01-010947 DPR 523 Form). The transmission line was not evaluated under NRHP criteria B or D. The applicant's consultant re-evaluated this transmission line and concluded that the resource does not meet the criteria for the NRHP, CRHR, or Alameda County Register. The CEC staff concurs with this evaluation.

The Pittsburg-Tesla Transmission Line has no specific important associations with significant events or historical patterns. While the transmission line was built during a period of community development in the region, a mere association with community development is not significant because all PG&E's infrastructure has a basic association with some aspect of California's development. Nor is it directly associated with important events or trends in PG&E's corporate history. As such the Pittsburg-Tesla Transmission Line is not eligible under Criterion 1 of the CRHR or Criterion A of the Alameda County Register. This resource has no known important associations with the lives of any people or groups of people significant to history. As such the Tracy-Tesla 230-kV Transmission Line is not eligible under Criterion 2 of the CRHR or Criterion B of the Alameda County Register. The Pittsburg-Tesla Transmission Line is not a significant example of any type, period, or method of construction, nor was it designed by a master engineer. It is also a ubiquitous property type for PG&E and lacks technological innovation and architectural merit. As such, it is not eligible under Criterion 3 of the CRHR or Criterion C of the Alameda County Register. The Pittsburg-Tesla Transmission Line is not a source of significant information regarding history, nor does it appear to have any likelihood of yielding important information about construction materials or technologies. As such the Pittsburg-Tesla Transmission Line is not eligible under Criterion 4 of the CRHR or Criterion D of the Alameda County Register. The Pittsburg-Tesla Transmission Line is not a historical resource under CEQA.

P-01-011395 Tracy-Telsa 230-kV Transmission Line

The Tracy-Tesla Transmission Line is a 6-mile long 230-kV transmission line connecting the Telsa Substation to the Tracy Switchyard in the north-northwest. The overhead high voltage transmission line is strung between several galvanized steel-lattice towers approximately eighty to 110 feet tall. The base of the towers extends outward and the footings are anchored to concrete pads. The towers have three arms on each side with

insulators that support the lines. It was built between 1949 and 1953 (Dudek 2024dddd, pages 61–62, Appendix C P-01-011395 DPR 523 Form).

The segment of the Tracy-Tesla Transmission Line recorded within the built environment APE is 0.42 mile long, beginning at the Tesla Substation at Patterson Road and North Midway Road. The applicant's consultant observed no changes to the transmission line since it was last recorded in 2013 (Dudek 2024dddd, Appendix C P-01-011395 DPR 523 Form).

Evaluation. Both the original evaluator and the applicant's consultant evaluated the transmission line for eligibility for listing on the NRHP and the CRHR. Both proposed that the transmission line is ineligible for listing on the NRHP and CRHR. Additionally, the applicant's consultant found the resource to be ineligible for the Alameda County Register, which contains nearly identical criteria to the NRHP and CRHR (Dudek 2024dddd, Appendix C P-01-011395 DPR 523 Form). CEC staff concurs with these evaluations.

The Tracy-Tesla 230-kV Transmission Line does not have any known significant association with any significant historic events or historic patterns. While the transmission line was built during a period of community development in the region, a mere association community development is not significant because all PG&E's infrastructure has a basic association with some aspect of California's development. As such the Tracy-Tesla 230-kV Transmission Line is not eligible under Criterion 1 of the CRHR or Criterion A of the Alameda County Register. This resource has no known important associations with the lives of any people or groups of people significant to history. As such the Tracy-Tesla 230-kV Transmission Line is not eligible under Criterion 2 of the CRHR or Criterion B of the Alameda County Register. The Tracy-Tesla 230-kV Transmission Line is not a significant example of any type, period, or method of construction, nor was it designed by a master engineer. It is also a ubiquitous property type for PG&E and lacks technological innovation and architectural merit. As such, it is not eligible under Criterion 3 of the CRHR or Criterion C of the Alameda County Register. The Tracy-Tesla 230-kV Transmission Line is not a source of significant information regarding history, nor does it appear to have any likelihood of yielding important information about construction materials or technologies. As such the Tracy-Tesla 230-kV Transmission Line is not eligible under Criterion 4 of the CRHR or Criterion D of the Alameda County Register. The Tracy-Tesla 230-kV Transmission Line is not a historical resource under CEQA.

P-01-011479 Transmission Line

This resource is a transmission line that extends southwest to northwest and consists of two towers and cables. The towers are roughly 50 feet tall and measure 19 feet and 10 inches on each side. The towers sit on four cement footing and are constructed in a latticed steel frame. The footing measure 1 foot and 6 inches on each side.

The recorded segment of this transmission line is 0.32 mile and connects with the Tesla Substation. This resource was previously recorded in 2014, and the applicant's consultant found no changes since its last recordation (Dudek 2024dddd, Appendix C P-01-011479 DPR 523 Form).

Evaluation. Both the original evaluator and the applicant's consultant evaluated the transmission line for eligibility for listing on the NRHP and CRHR. Both concluded the transmission line to be ineligible for listing on the NRHP or CRHR. Additionally, the applicant's consultant found the resource to be ineligible for the Alameda County Register, which contains nearly identical criteria to the NRHP and CRHR. (Dudek 2024dddd, Appendix C P-01-011479 DPR 523 Form). The CEC staff concurs with these evaluations.

The Transmission Line does not have any known significant association with any significant historic events or historic patterns. While the transmission line was built during a period of community development in the region, a mere association with community development is not significant because all PG&E's infrastructure has a basic association with some aspect of California's development. As such the Transmission Line is not eligible under Criterion 1 of the CRHR or Criterion A of the Alameda County Register. This resource has no known important associations with the lives of any people or groups of people significant to history. As such the Transmission Line is not eligible under Criterion 2 of the CRHR or Criterion B of the Alameda County Register. The Transmission Line is not a significant example of any type, period, or method of construction, nor was it designed by a master engineer. It is also a ubiquitous property type for PG&E and lacks technological innovation and architectural merit. As such, it is not eligible under Criterion 3 of the CRHR or Criterion C of the Alameda County Register. The Transmission Line is not a source of significant information regarding history, nor does it appear to have any likelihood of yielding important information about construction materials or technologies. As such the Transmission Line is not eligible under Criterion 4 of the CRHR or Criterion D of the Alameda County Register. The Transmission Line is not a historical resource under CEQA.

P-01-011480 Transmission Line

This resource is a transmission line that extends southwest to northwest and consists of two towers and cables. The towers are roughly 55 feet tall and measure 19 feet and 10 inches on each side. The towers sit on four cement footings and are constructed in a latticed galvanized steel frame.

The recorded segment of this transmission line is 0.32 mile long and connects with the Tesla Substation. This resource was previously recorded in 2014, and the applicant's consultant found no changes since its last recordation (Dudek 2024dddd, Appendix C P-01-011480 DPR 523 Form).

Evaluation. Both the original evaluator and the applicant's consultant evaluated the transmission line for eligibility for listing on the NRHP and CRHR. Both found the

transmission line to be ineligible for listing on the NRHP and CRHR. Additionally, the applicant's consultant found the resource to be ineligible for the Alameda County Register, which contains nearly identical criteria to the NRHP and CRHR (Dudek 2024. Appendix C P-01-011480 DPR 523 Form). The CEC staff concurs with these evaluations.

The Transmission Line does not have any known significant association with any significant historic events or historic patterns. While the transmission line was built during a period of community development in the region, a mere association with community development is not significant because all PG&E's infrastructure has a basic association with some aspect of California's development. As such the Transmission Line is not eligible under Criterion 1 of the CRHR or Criterion A of the Alameda County Register. This resource has no known important associations with the lives of any people or groups of people significant to history. As such the Transmission Line is not eligible under Criterion 2 of the CRHR or Criterion B of the Alameda County Register. The Transmission Line is not a significant example of any type, period, or method of construction, nor was it designed by a master engineer. It is also a ubiquitous property type for PG&E and lacks technological innovation and architectural merit. As such, it is not eligible under Criterion 3 of the CRHR or Criterion C of the Alameda County Register. The Transmission Line is not a source of significant information regarding history, nor does it appear to have any likelihood of yielding important information about construction materials or technologies. As such the Transmission Line is not eligible under Criterion 4 of the CRHR or Criterion D of the Alameda County Register. The Transmission Line is not a historical resource under CEQA.

P-01-012147 Midway Public School

The Midway Public School is a one-story building previously used as a one-room schoolhouse built in 1883. It is a wooden building with a rectangular and symmetrical plan, a hipped roof clad in corrugated sheet metal and a centered front entry door flanked by two tall horizontal window openings covered in plywood. The exterior walls are clad in horizontal redwood siding. The building sits on a post and pier foundation. The shadow of the original front entry porch, which was most likely removed in the 1950s, is visible. The school was originally constructed on an adjacent parcel but was moved in the 1950s. For more than 50 years the building has been utilized as a horse stable and tack storage. (Dudek 2024dddd, pages 64–67, Appendix C P-01-012147 DPR 523 Form).

The applicant's consultant evaluated the Midway Public School for eligibility for listing on the NRHP, CRHR, and Alameda County Register and recommended it ineligible for the CRHR and Alameda County Register. The applicant's consultant contends that while the resource does meet criteria 1/A (CRHR/Alameda County Register) and 2/B, significant integrity issues interfere with the resource's ability to convey its significance (Dudek 2024dddd, pages 64–67, Appendix C P-01-012147 DPR 523 Form).

Evaluation. In 2018, Evans & De Shazo, Inc. (EDS) inventoried the former Midway Public School as part of a historic resource survey and assessment for the building's

potential relocation and restoration. EDS did not evaluate the property. Rather, in their report, EDS stated that it was "likely eligible for listing on the CRHR and possibly the NRHP; however, a full evaluation in accordance with CEQA would be required to make this determination" (Dudek 2024dddd, Appendix C P-01-012147 DPR 523 Form). EDS did not inventory or evaluate the other buildings and structures that share Assessor's Parcel Number 99B-7925-2-1 with the former school building. The applicant's consultant recommended that the Midway Public School be found ineligible for the CRHR and Alameda County Register (Dudek 2024dddd, pages 64–67, Appendix C P-01-012147 DPR 523 Form). The CEC staff concurs with evaluation.

The Midway Public School made significant contributions to the history of the region. The schoolhouse. The former schoolhouse played a significant role as the first public school and one-room schoolhouse in Midway Station as the Livermore area developed into an important ranching and agricultural area. After the Gold Rush of the 1850s ended, settlers in the area turned to farming. The construction of the rail station at Midway encouraged settlers, making the area popular enough to warrant the establishment of a post office in 1870. Many families, including the Haeras and Mulqueeneys, established their ranches and families in Midway, necessitating the petition from the Midway School District in the early 1880s for a schoolhouse. The schoolhouse served as the primary educational center for Midway residents throughout the end of the nineteenth century and early twentieth century. As such, the Midway Public School meets CRHR/Alameda County Register Criterion 1/A. The Midway Public School has significant associations with individuals and groups of who have made significant contributions to the history of the region. Franz Haera, who built the first building in Midway, the Zinc House, before it burned down, his half-brother Reinhold, and the notable Midway rancher Michael Mulqueeney, petitioned the Alameda County Board of Education to establish new school district boundaries and construct a schoolhouse. Franz Haera was elected as trustee for the new school district, and Reinhold took on the role as clerk for the district. Because of their efforts, the children of Midway, including the Haera and Mulqueeney children, were granted a schoolhouse that served the entire community until 1943. The Haeras and Mulqueeney initially petitioned the Alameda School District in the 1870s and continued to solicit the district for a public schoolhouse until its construction in 1883. Both the Haeras and Mulqueeney were integral to the development of the community's school district and schoolhouse. Additionally, a building that might otherwise have a more significant association with Franz Haera, the Zinc House, burned down in the 1930s. As such, the Midway Public School meets CRHR/Alameda County Register Criterion 2/B. The Midway Public School is not a significant example of any type, period, or method of construction, nor was it designed by a master architect or a master builder. It is also a ubiquitous property type and lacks technological innovation and architectural merit. As such, it is not eligible under Criterion 3 of the CRHR or Criterion C of the Alameda County Register. The Midway Public School is not a source of significant information regarding history, nor does it appear to have any likelihood of yielding important information about construction materials or technologies. As such the Midway Public School is not eligible

under Criterion 4 of the CRHR or Criterion D of the Alameda County Register (Dudek 2024dddd, pages 64–67, Appendix C P-01-012147 DPR 523 Form).

While the Midway Public School does meet the significance criteria of the CRHR and Alameda County Register 1/A and 2/B, it does not have sufficient integrity to convey this significance. The Midway Public School was moved to its present location around 1950. This is a significant impact on the resource's integrity as it longer retains its integrity of location. The design of the Midway Public School has been altered to aid in its present use as a horse stable and tack storage. To this end a shed addition has been tacked to the side of the building and has changed the massing of the building. Additionally, the front porch of the building has been removed. Combined these changes to the design of the building constitute significant damage to the building's integrity of design. The Midway Public School has experienced alterations and removal of the building's materials. Notably, the windows and porch have been removed, and this constitutes an impact on the Midway Public School's integrity of materials. The setting of the Midway Public has changed substantially since its use as a public school. While the property retains its rural character, it is surrounded by buildings and structures that were not present until after the school was no longer in use for its original purpose. This also includes the large amount of industrial electrical equipment such as the Tesla substation and several large transmission lines. This constitutes an impact on the integrity of setting for the Midway Public School. The change in use to a horse stable and tack stable, and especially the associated shed addition and the removal of the front porch impacts the resource's integrity of feeling, association, and workmanship, however, on their own the impacts to these types of integrity may not be significant. Since the impacts to these types of integrity are in addition to the more significant integrity impacts of location, design, materials, and setting, the Midway Public School does not retain sufficient integrity to convey its significance and is therefore not a historical resource under CEQA.

P-39-000098 Western Pacific Railroad/Union Pacific Railroad

The segment of the Western Pacific Railroad/Union (WPRR) documented extends 1.47 miles in northeastern Alameda County near the community of Midway. This segment of the railroad contains a concrete railroad bridge that runs perpendicular to Patterson Pass Road. The bridge is supported by two headers each with four piers. There is a metal railing flanking either side of the bridge. The bridge is approximately 87 feet long and 17 feet wide.

Evaluation. The resource is significant under Criterion A/1. The WPRR has been evaluated numerous times in numerous locations throughout the state. However, the resource has significant integrity issues. The State Historic Preservation Officer has previously determined it to not be eligible and in multiple counties it is assigned a 6Z California Historical Resources Status Code: found ineligible for the NRHP, CRHR, and local designation through survey evaluation. The CEC Staff concurs that the WPRR and the portion in the study area for this project is not eligible for the CRHR since loss of integrity for this resource has been well established in previous documentation and

there is no new information that would warrant a reassessment of integrity. For the same reasons that the WPRR was determined not eligible for the CRHR, the resource is not eligible for the Alameda County Register (Dudek 2024dddd, Appendix C P-39-000098 DPR 523 Form).

P-39-004290 Historic Telegraph Line

This resource is a telegraph line with wooden poles, 1.44 miles of which is within the Built Environment APE. Several of the wooden poles have been cute down and replaced. The applicant's consultant was unable to gain access to the property for survey because of safety concerns, and the resource could not be surveyed from the public right-of-way. Because of this, the description is based on a previous evaluation and aerial imagery. To the east of the APE a previously recorded segment of the line had several of the poles replaced as of 2001. Maker marks and stamps were visible on some of the poles on this segment, as well as glass insulators, which varied in color from pole to pole. This included aqua and brown glass. Most glass insulators were attached to the single crossbar, but some insulators were found lying on the ground. One of the aqua colored insulators on the ground was embossed "HEMINGRAY" which is an embossing that first appeared on insulators in the 1890s (Dudek 2024dddd, Appendix C P-39-004290 DPR 523 Form).

Evaluation. While the Historic Telegraph Line was previously recorded in 2001 by URS Corporation, it was not evaluated. The applicant's consultant evaluated the telegraph line and recommended that it be found not eligible for the CRHR and the Alameda County Register (Dudek 2024dddd, Appendix C P-39-004290 DPR 523 Form). The CEC staff concurs with this evaluation.

The Historic Telegraph Line does not have any known significant association with any significant historic events or historic patterns. As such the Historic Telegraph Line is not eligible under Criterion 1 of the CRHR or Criterion A of the Alameda County Register. This resource has no known important associations with the lives of any people or groups of people significant to history. As such the Historic Telegraph Line is not eligible under Criterion 2 of the CRHR or Criterion B of the Alameda County Register. The Historic Telegraph Line is not a significant example of any type, period, or method of construction, nor was it designed by a master engineer. It is also lacks technological innovation and architectural merit. As such, it is not eligible under Criterion 3 of the CRHR or Criterion C of the Alameda County Register. The Historic Telegraph Line is not a source of significant information regarding history, nor does it appear to have any likelihood of yielding important information about construction materials or technologies. As such the Historic Line is not eligible under Criterion 4 of the CRHR or Criterion D of the Alameda County Register. The Historic Telegraph Line is not a historical resource under CEQA.

P-39-005337 Tesla-Salado-Manteca 115-kV Transmission Line

The Tesla-Salado-Manteca Transmission Line is an approximately 50-mile-long transmission line that runs from the Tesla Substation to the Manteca Substation in the

north and the Salado Substation to the south. The single circuit line consists of a variety of pole and tower types reflecting multiple periods of construction and improvements. Pole and tower construction dates range from the 1920s to the 2000s. Both wood poles and steel towers are present along the transmission line route; however, the section within and near the built environment APE consist of steel towers reflecting the 1970s period of infrastructure development on this line (Dudek 2024dddd, Appendix C P-39-005337 DPR 523 Form).

The recorded segment of this transmission line is 0.93 mile and connects with the Tesla Substation. This resource was previously recorded in 2017, and the applicant's consultant found no changes since its last recordation (Dudek 2024dddd, Appendix C P-39-005337 DPR 523 Form).

Evaluation. Both the original evaluator and the applicant's consultant evaluated the transmission line for eligibility for listing on the NRHP and the CRHR. Both recommended the transmission line ineligible for listing on the NRHP or CRHR. Additionally, the applicant's consultant found the resource to be ineligible for the Alameda County Register, which contains nearly identical criteria to the NRHP and CRHR (Dudek 2024dddd, Appendix C P-39-005337 DPR 523 Form). The CEC staff concurs with these evaluations.

The Tesla-Salado-Manteca 115-kV Transmission Line does not have any known significant association with any significant historic events or historic patterns. While the transmission line was built during a period of community development in the region, a mere association with community development is not significant because all PG&E's infrastructure has a basic association with some aspect of California's development. As such the Tesla-Salado-Manteca 115-kV Transmission Line is not eligible under Criterion 1 of the CRHR or Criterion A of the Alameda County Register. This resource has no known important associations with the lives of any people or groups of people significant to history. As such, the Tesla-Salado-Manteca 115-kV Transmission Line is not eligible under Criterion 2 of the CRHR or Criterion B of the Alameda County Register. The Tesla-Salado-Manteca 115-kV Transmission Line is not a significant example of any type, period, or method of construction, nor was it designed by a master engineer. It is also a ubiquitous property type for PG&E and lacks technological innovation and architectural merit. As such, it is not eligible under Criterion 3 of the CRHR or Criterion C of the Alameda County Register. The Tesla-Salado-Manteca 115-kV Transmission Line is not a source of significant information regarding history, nor does it appear to have any likelihood of yielding important information about construction materials or technologies. As such the Tesla-Salado-Manteca 115-kV Transmission Line is not eligible under Criterion 4 of the CRHR or Criterion D of the Alameda County Register. The Tesla-Salado-Manteca 115-kV Transmission Line is not a historical resource under CEQA.

Kelso to Tesla Transmission Line

The Kelso to Tesla Transmission Line follows a north-to-south alignment for approximately 6 miles from the Kelso substation to the Tesla Substation and has forty-five towers. The twin sets of three electrical high voltage wires are supported by large approximately 80 feet high steel lattice towers. All towers are similar in design and they all feature diagonal cross bracing, and four angled legs set in concrete footings. Three arms with insulators at each end extend from the upper part of the tower to carry the twin 230-kV circuits. The cable lines suspend from the insulators. Planning of this transmission line began in September 1949 and construction completed in 1951 (Dudek 2024dddd Appendix C Kelso to Tesla Transmission Line DPR 523 Form).

Evaluation. The Kelso to Tesla Transmission Line was originally evaluated in 2011 by AECOM. Both the original evaluator and the applicant's consultant evaluated the transmission line for eligibility for listing on the NRHP and CRHR. Both found the transmission line to be ineligible for listing on the NRHP or CRHR. Additionally, the applicant's consultant recommended the resource ineligible for the Alameda County Register, which contains nearly identical criteria to the NRHP and CRHR (Dudek 2024dddd, Appendix C Kelso to Tesla Transmission Line DPR 523 Form). The CEC staff concurs with these evaluations.

The Kelso to Tesla Transmission Line does not have any known significant association with any significant historic events or historic patterns. While the transmission line was built during a period of community development in the region, a mere association with community development is not significant because all PG&E's infrastructure has a basic association with some aspect of California's development. As such the Kelso to Tesla Transmission Line is not eligible under Criterion 1 of the CRHR or Criterion A of the Alameda County Register. This resource has no known important associations with the lives of any people or groups of people significant to history. As such the Kelso to Tesla Transmission Line is not eligible under Criterion 2 of the CRHR or Criterion B of the Alameda County Register. The Kelso to Tesla Transmission Line is not a significant example of any type, period, or method of construction, nor was it designed by a master engineer. It is also a ubiquitous property type for PG&E and lacks technological innovation and architectural merit. As such, it is not eligible under Criterion 3 of the CRHR or Criterion C of the Alameda County Register. The Kelso to Tesla Transmission Line is not a source of significant information regarding history, nor does it appear to have any likelihood of yielding important information about construction materials or technologies. As such the Kelso to Tesla Transmission Line is not eligible under Criterion 4 of the CRHR or Criterion D of the Alameda County Register. The Kelso to Tesla Transmission Line is not a historical resource under CEQA.

Mulqueeney Ranch

The Mulqueeney Ranch consists of a residence and several outbuildings. The residence is partially obscured by vegetation, but it appears to have a rectangular footprint, a composition roof, and walls clad in stucco. Horizontal sliding vinyl windows are visible. A woodshed with a corrugated metal roof sits to the west of the residence. There are

several outbuildings and structures to the southwest of the residence. These include a one wood garage with a corrugated metal roof, another woodshed with a corrugated metal roof, and a corrugated metal loafing shed. South of the residence are two other sheds; one corrugated metal shed, and one wood-framed shed with a corrugated metal roof.

The Mulqueeney Ranch does not have any known significant association with any significant historic events or historic patterns. Originally the property was used as a 5,000-acre sheep ranch, but this historic use is not reflected on the current property. Aerials from 1949 do not show any of the buildings currently on the property. The oldest buildings on the property most likely date to sometime in the 1950s. The property also no longer encompasses the original 5,000 acres because of the construction of the Tesla Substation. Research does not suggest that this property played an important role in the development of the ranching industry or the development of the larger region. As such the Mulqueeney Ranch is not eligible under Criterion 1 of the CRHR or Criterion A of the Alameda County Register. While the 5,000-acre sheep ranch was associated with Michael Mulqueeney, a significant settler in the Midway area, all the extant buildings on the property were built after his death. This resource has no known significant associations with the lives of any other people or groups of people significant to history. As such the Mulqueeney Ranch is not eligible under Criterion 2 of the CRHR or Criterion B of the Alameda County Register. The Mulqueeney Ranch is not a significant example of any type, period, or method of construction, nor was it designed by a master architect or a master builder. It is also a ubiquitous property type with no discernable style. As such, it is not eligible under Criterion 3 of the CRHR or Criterion C of the Alameda County Register. The Mulqueeney Ranch is not a source of significant information regarding history, nor does it appear to have any likelihood of yielding important information about construction materials or technologies. As such the Mulqueeney Ranch is not eligible under Criterion 4 of the CRHR or Criterion D of the Alameda County Register. The Mulqueeney Ranch is not a historical resource under CEQA (Dudek 2024dddd, pages 73–75, Appendix C Mulqueeney Ranch DPR 523 Form).

Buried Archaeological Site Sensitivity

Potential for yet-identified cultural resources in the vicinity was reviewed against geologic and topographic data for the area and information from other nearby projects. The "archaeological sensitivity," or potential to support the presence of a buried prehistoric archaeological deposits, is generally interpreted based on geologic landform and environmental parameters (i.e., distance to water and landform slope).

The project site is situated within the Alameda Creek Watershed. An ephemeral stream system, the Patterson Run, intersects the northwest portion of the project site, running parallel to Patterson Road. This waterway and Patterson Road are visible on the earliest historical topographic maps and aerial images; as such, it is unclear the extent to which the course of the drainage is natural or has been modified to accommodate the roadway.

The project site is flat to gently sloping. Soils within the project site consist of Linne Clay Loam and Rincon Clay Loam series (USDA 2024). These soils consist of moderately deep to deep, well-drained soils that form in material weathered from fairly soft shale and sandstone (Linne series) or alluvium from sedimentary rocks (Rincon series).

The northwest portion of the project site, in the vicinity of the waterway, would be low to moderately well-suited to support the formation of buried cultural deposits or surface manifestations. Given the lack of disturbance in the area and review of this information, the project site has low-to-moderate archaeological sensitivity.

Tribal Cultural Resources

Background research including record searches and document reviews, archaeological surveys, and consultation with local tribes have not identified any tribal cultural resources within the project site.

Outcome of Historical Significance Evaluations

For a cultural resource to be a historical resource and thus significant under CEQA, it must meet one of the four criteria for listing in the CRHR or Alameda County Register (outlined above under Regulatory) and have sufficient integrity to convey this significance. The applicant's consultant recommended that one resource meets the CRHR and Alameda County Register criteria and retains sufficient integrity, and thirteen do not (Table 5.1). The one resource the applicant's consultant recommended eligible is the 500-kV Transmission Lines (P-01-010499). The remaining 13 built environment resources are recommended not eligible for the CRHR and Alameda County Register. After review, CEC staff have determined that the 500-kV Transmission Lines (P-01-010499) are eligible for the CRHR, and the Alameda County Register. Additionally, two resources; the Western Pacific Railroad/Union Pacific Railroad (P-39-000098) and the Midway Public School (P-01-012147) are significant under one or more criteria of the CRHR and the Alameda County Register, but do not retain sufficient integrity to convey this significance. Therefore, they are not historical resources under CEQA. The remaining eleven built environment resources do not meet any of the four criteria for listing in the CRHR or Alameda County Register and are therefore not historical resources under CEQA.

5.4.2 Environmental Impacts

CULTURAL AND TRIBAL CULTURAL RESOURCES	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Public Resources Code, section 15064.5?	☐	☒	☐	☐
b. Would the project cause a substantial adverse change in the significance of a	☐	☒	☐	☐

CULTURAL AND TRIBAL CULTURAL RESOURCES	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
unique archaeological resource pursuant to Public Resources Code, section 15064.5?				
c. Would the project disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐
d. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code, section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	☐	☒	☐	☐
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code, section 5020.1(k), or	☐	☐	☐	☒
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code, section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code, section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, cultural resources and tribal cultural resources.

5.4.2.1 Methodology and Thresholds of Significance

For a cultural resource to be a historical resource and thus subject to the requirements of CEQA, it must meet one of the four criteria for listing in the CRHR or the Alameda County Register (outlined above under LORS) and retain sufficient integrity to convey significance. CEC staff determined that one resource the 500-kV Transmission Lines (P-01-010499) meets the CRHR criteria or Alameda County Register and retained sufficient integrity and thirteen do not (Table 5.4-1). The CEC staff recommendations regarding the recommended eligible property are as follows.

Thresholds of Significance

The significance criteria listed below are used to determine whether a project or alternatives would result in significant impacts under CEQA related to cultural resources. These criteria are also from CEQA Appendix G. Under CEQA, the proposed project would cause a significant impact if it caused a substantial adverse change in the significance of a historical resource, an archeological resource, or a tribal cultural resource as defined under California Code of Regulations, Title 14, Chapter 3, Section 15064.5.

5.4.2.2 Direct and Indirect Impacts

Criteria for determining if a proposed project will have a significant impact on an identified historical resource is whether the project will alter the physical integrity of the historical resource in an adverse manner such that it would no longer be eligible to the NRHP, the CRHR, or any other local landmark programs. Under CEQA, the proposed project would cause a significant impact if it caused a substantial adverse change in the significance of a historical resource, an archeological resource, or a tribal cultural resource as defined in Public Resources Code § 21084.1 and further implemented by California Code of Regulations, Title 14, Chapter 3, section 15064.5.

The proposed project would have a significant impact on these cultural resources if it would:

- Physically alter, damage, or cause destruction of all or a part of a historical or archaeological resource.
- Demolish or materially alter in an adverse manner those physical characteristics of a historical resource that convey its significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources, inclusion in a local register of historical resources, or its determination to be a historical resource by a CEQA lead agency.
- Demolish or materially alter in an adverse manner those physical characteristics of an archaeological artifact, site, or object that enable it to meet the definition of a unique archaeological resource under CEQA.
- Disturb any human remains, including those interred outside of formal cemeteries.

Direct and indirect impacts to significant historical resources are considered herein as follows.

- Direct or primary impacts are caused by the project and occur at the same time and place (14 CCR §15358 (a)(1)).
- Indirect impacts, or secondary effects, are reasonably foreseeable and caused by a project but occur at a different time or place (14 CCR §15358 (a)(2)).

a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Public Resources Code, section 15064.5?

Project Components Within CEC's Opt-In Certification and Components Outside CEC's Opt-In Certification

Construction

Less Than Significant with Mitigation Incorporated. No built environment historical resources are known to exist within the project area. However, one built environment resource, the 500-kV Transmission Lines (P-01-010499), is within the built environment APE. The 500-kV Transmission Lines connect to the Tesla Substation and are part of PG&E's statewide electrical infrastructure. Because of the industrial electrical nature of the resource, as well as the historical connection to the Tesla Substation, continued development of electrical infrastructure relating to the Tesla Substation constitutes a considerably less significant impact to the 500-kV Transmission Lines than other development patterns. The construction of the project would not impact the resource's integrity of location. The construction of the project would affect the resource's integrity of setting, however, this impact would be less than significant. Despite construction of the BESS and its associated components and infrastructure, the setting of the 500-kV Transmission Lines within and near the built environment APE would still remain largely rural in character, and thus the project would not constitute a significant impact to the resource's integrity of setting. Construction of the project would not impact the resource's integrity of design. The construction of the project would not impact the resource's integrity of materials. Construction of the project would not impact the resource's integrity of workmanship. Construction of the project would impact the resource's integrity of feeling, however, since the project would largely consist of industrial electrical equipment this would impact the resource's integrity of feeling to a significant degree. Overall, the proposed project would impact the 500-kV Transmission Lines to a less than significant degree.

No archaeological historical resources are known to exist within the project area. However, ground visibility during the survey was reduced to 10 percent in most areas due to non-native grasses and a geoarchaeological assessment of the project site concluded there is a low to moderate archaeological sensitivity for buried archaeological resources. If unknown or buried archaeological resources are damaged during construction, it would be considered a significant impact.

Building upon the applicant's proposed Conditions of Certification/Mitigation Measures (COC/MMs), CEC staff using their own analysis and expertise recommend COC/MMs **CUL-1** through **CUL-6** to reduce potentially significant impacts to potential historical resources to a less than significant level.

Operation

No Impact. Operation activities associated with the project would not involve activities that would have the potential to alter a built environment historical resource or to unearth archaeological resources. Therefore, no operational impacts to historical resources would occur as a result of the project components.

b. Would the project cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Public Resources Code, section 15064.5?

Project Components Within CEC's Opt-In Certification and Components Outside CEC's Opt-In Certification

Construction

Less Than Significant with Mitigation Incorporated. No unique archaeological resources are known to exist within the project area. However, ground visibility during the survey was reduced to 10 percent in many locations due to non-native grasses and a geoarchaeological assessment of the project site concluded there is a low to moderate archaeological sensitivity for buried archaeological resources. If unknown or buried unique archaeological resources are damaged during construction, it would be considered a significant impact.

The applicant has proposed the incorporation of COC/MMs **CUL-1** through **CUL-6** to reduce potentially significant impacts to unique archaeological resources to a less than significant level.

Operation

No Impact. Operational activities would not involve ground-disturbing activities and therefore no operational impacts to unique archaeological resources would occur as a result of the project.

c. Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Project Components Within CEC's Opt-In Certification and Components Outside CEC's Opt-In Certification

Construction

Less Than Significant with Mitigation Incorporated. No formal cemeteries or human remains interred outside of formal cemeteries are known to exist within the project area, however, there is a potential that previously unidentified human remains might be unearthed during construction. COC/MM **CUL-6** would require that construction be halted in the vicinity of discovery of human remains and work remain halted until

avoidance or treatment of the human remains has been carried out. With adherence to COC/MM **CUL-6**, potentially significant impacts would be less than significant.

Operation

No Impact. Operational activities would not involve ground-disturbing activities that would have the potential to disturb human remains. Therefore, no operational impacts on human remains would occur as a result of the project.

d. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code, section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

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

Project Components Within CEC's Opt-In Certification and Components Outside CEC's Opt-In Certification

Construction

No Impact. There are no known tribal cultural resources on or directly adjacent to the proposed site that are listed or eligible for listing in the CRHR. Therefore, there would be no impact to tribal cultural resources that are listed or eligible for listing in the CRHR during construction.

Operation

No Impact. Ground-disturbing activities are not part of the operational or maintenance profile of the proposed project. Impacts on tribal cultural resources are therefore not expectable during operation.

ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code, section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code, section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Project Components Within CEC's Opt-In Certification and Components Outside CEC's Opt-In Certification

Construction

Less Than Significant with Mitigation Incorporated. Although there are no known tribal cultural resources on or directly adjacent to the proposed site, ground disturbance associated with the proposed project could result in the exposure and destruction of buried, as-yet unknown precontact archaeological resources that might qualify as tribal cultural resources. If these resources were to be exposed or destroyed, it would be a significant impact. Implementation of COC/MM **CUL-1** through COC/MM **CUL-6** would reduce impacts on buried, tribal cultural resources to a less-than-significant level.

Operation

No Impact. Ground-disturbing activities are not part of the operational or maintenance profile of the proposed project. Impacts on tribal cultural resources are therefore not expectable during operation.

5.4.2.3 Cumulative Impacts

Impacts of the project would be considered cumulatively considerable if they would have the potential to combine with other past, present, or reasonably foreseeable projects to become significant (Cal. Code Regs., tit. 14, § 15130(b)(1)).

Cumulative impacts of the project must be discussed if the incremental effect of the project, combined with the effects of other projects is "cumulatively considerable" (Cal. Code Regs., tit. 14, § 15130[a]).

In accordance with CEQA Guidelines, section 15130(b), "…the discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as much detail as is provided for the effects attributable to the project alone. The discussion should be guided by standards of practicality and reasonableness and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact." (Cal. Code Regs., tit. 14, § 15130[b]).

"Where a lead agency is examining a project with an incremental effect that is not 'cumulatively considerable,' a lead agency need not consider that effect significant but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable." (Cal. Code Regs., tit. 14, § 15130[a]).

Impacts to cultural resources are generally site- and resource-specific, and therefore potential cumulative impacts may be realized if two or more projects occur in the same location. The geographic scope of potential cumulative cultural resource impacts is limited to the immediate vicinity of ground-disturbing activities that would occur during construction or operation. As shown in Appendix A Figure A-1, Cumulative projects within 15 Miles of the project site, the project would not create a cumulatively considerable impact on historical resources when considering it along with any of the Cumulative projects included in **Appendix A, Table A-1**. Moreover, all cumulative project proponents would be expected to comply with state law relating to cultural

resources. Cumulative impacts on cultural and tribal cultural resources would be less than significant.

5.4.3 Project Conformance with Applicable LORS

Federal permits are required for the project; the Army Corps of Engineers and the applicant are responsible for ensuring the project is in conformance with applicable federal laws, ordinances, regulations, and standards (LORS). The CEC is the lead agency under CEQA and is responsible for ensuring the project conforms with applicable state and local LORS. Staff concludes that with implementation of specific COCs, the proposed project would conform with all applicable LORS. The subsection below, "5.4.5 Proposed Conditions of Certification/Mitigation Measures," contains the full text of the referenced COCs.

5.4.4 Conclusions and Recommendations

As discussed above, with implementation of COCs/MMs the proposed project would have a less than significant impact related to cultural resources and tribal cultural resources and would conform with LORS. Staff recommends adopting the COCs and MMs as detailed in subsection "5.4.5 Proposed Conditions of Certification/Mitigation Measures" below. In instances where COCs/MMs are applicable to components outside the CEC's Opt-In Certification, PG&E shall be responsible, under the authority of the CPUC, to implement recommended measures intended to mitigate project impacts. For components within and outside the Opt-In certification, see **Section 2, Introduction**.

5.4.5 Proposed Conditions of Certification/Mitigation Measures

COC/MM CUL-1 Appointment and Qualifications of Cultural Resource Personnel The project owner shall assign a Cultural Resource Specialist (CRS) to the project. The project owner may elect to assign one or more alternate CRSs as well. The project owner shall submit the resumes of the proposed CRS and Alternative CRS(s), with at least three references and their contact information, to the CEC's Compliance project Manager (CPM) for review and approval.

The CRS and Alternate CRS(s) shall have training and background that conform to the U.S. Secretary of the Interior's Professional Qualifications Standards, as published in Title 36, Code of Federal Regulations, part 61. In addition, the CRS and Alternate CRS(s) shall have the following qualifications:

A background in anthropology, archaeology, history, architectural history, or a related field, and

- At least 10 years of archaeological or historical experience (as appropriate for the project site), with resources mitigation and fieldwork;
- At least one year of field experience in California; and

- At least three years of experience in a decision-making capacity on cultural resources projects in California and the appropriate training and experience to knowledgably make recommendations regarding the significance of cultural resources.

The project owner may replace the CRS by submitting the required resume, references and contact information of the proposed replacement CRS to the CPM.

The CRS shall manage all cultural resource monitoring, mitigation, curation, and reporting activities, and any pre-construction cultural resource activities, unless management of these is otherwise provided for in accordance with the cultural resource and tribal cultural resource COCs. The CRS shall serve as the primary point of contact on all cultural resource matters for the CEC. The CRS shall retain Native American Monitors and may elect to obtain the services of Cultural Resource Monitors (CRMs) and other technical specialists, if needed, to assist in monitoring, mitigation, and curation activities. The project owner shall ensure that the CRS makes recommendations regarding the CEQA significance of any cultural or tribal cultural resources that are newly discovered or that may be affected in an unanticipated manner. After all ground disturbances are completed and the CRS has fulfilled all responsibilities specified in these cultural and tribal cultural resource COCs, the project owner may discharge the CRS after receiving approval from the CPM.

If required, Cultural Resources Monitors (CRMs) shall have the following qualifications:

- B.S. or B.A. degree in anthropology, archaeology, historical archaeology, or a related field; and one year of archaeological field experience in California; or
- A.S. or A.A. degree in anthropology, archaeology, historical archaeology, or a related field, and four years of archaeological field experience in California; or
- Enrollment in upper division classes pursuing a degree in the fields of anthropology, archaeology, historical archaeology, or a related field, and two years of archaeological field experience in California.

If tribal monitor(s) become necessary hiring preference should be given to consulting Native American tribes and the monitors should have:

- Traditional ties to the area being monitored.
- Knowledge of local historic and prehistoric Native American tribal cultural resources.
- Knowledge and understanding of Health and Safety Code, section 7050.5, and Public Resources Code, section 5097.9 et seq.
- Ability to effectively communicate the requirements of Health and Safety Code, section 7050.5, and Public Resources Code, section 5097.9 et seq.

- Ability to work with law enforcement officials and the Native American Heritage Commission to ensure the return of all associated grave goods taken from a Native American grave during excavation.
- Ability to travel to proposed project sites within traditional tribal territory.
- Knowledge and understanding of Title 14, California Code of Regulations, section 15064.5.
- Ability to advocate for the preservation in place of Native American cultural features through knowledge and understanding of CEQA mitigation provisions.
- Ability to read a topographical map and be able to locate site and reburial locations for future inclusions in the Native American Heritage Commission's Sacred Lands Inventory.
- Knowledge and understanding of archaeological practices, including the phases of archaeological investigation.

Verification: The project owner shall submit the prospective CRS's and any Alternate CRS's qualifications at least 75 days prior to the start of ground disturbance associated with site mobilization and construction.

The project owner may replace a CRS by submitting the required resume, references and contact information to the CPM at least 10 working days prior to the termination or release of the then-current CRS. In an emergency, the project owner shall immediately notify the CPM to discuss the qualifications and approval of a short-term replacement while a permanent CRS is proposed to the CPM for consideration.

At least 20 days prior to site mobilization, the CRS shall provide proof of qualifications for any anticipated CRMs and additional specialists for the project to the CPM.

Within 20 days prior to site mobilization, the CRS shall provide proof that Native American Monitors have been employed and identifying the Native American Monitors.

COC/MM CUL-2 Cultural and Tribal Cultural Resources Mitigation and Monitoring Plan Prior to the start of ground disturbance, the project owner shall submit the Cultural and Tribal Cultural Resources Mitigation and Monitoring Plan (CTRMMP), as prepared by or under the direction of the CRS, to the CPM for review and approval. The CTRMMP shall follow the content and organization of the draft model CTRMMP, provided by the CPM, and the authors' name(s) shall appear on the title page of the CTRMMP. The CTRMMP shall identify measures to minimize potential impacts on cultural and tribal cultural resources. Implementation of the CTRMMP shall be the responsibility of the CRS and the project owner. Copies of the CTRMMP shall reside with the CRS, alternate CRS,

each CRM, and the project owner's on-site construction manager. No ground disturbance shall occur prior to CPM approval of the CTRMMP, unless such activities are specifically approved by the CPM. Portions of the CTRMMP that describe or map the location(s) of cultural and tribal cultural resources shall be designated as confidential.

The CTRMMP shall include the following elements and measures.

- The following statement included in the Introduction: "Any discussion, summary, or paraphrasing of the Conditions of Certification (COCs) in this CTRMMP is intended as general guidance and as an aid to the user in understanding the COCs and their implementation. The COCs, as written in the Commission Decision, shall supersede any summarization, description, or interpretation of the conditions in the CTRMMP. The Cultural and Tribal Cultural Resources COCs from the Commission Decision are contained in Appendix A."
- A proposed general research design that includes a discussion of cultural research questions and testable hypotheses specifically applicable to the project area, and a discussion of artifact collection, retention/disposal, and curation policies as related to the research questions formulated in the research design. The research design will specify that the preferred treatment strategy for any cultural or tribal cultural resource is avoidance. A specific mitigation plan shall be prepared for any unavoidable impacts to any historical resources, unique archaeological resources, or tribal cultural resources (as defined in the California Environmental Quality Act and determined by the CPM). A prescriptive treatment plan may be included in the CTRMMP for limited data types. Specification of the implementation sequence and the estimated time frames needed to accomplish all project-related tasks during the ground-disturbance and post-ground–disturbance analysis phases of the project.
- Identification of the person(s) expected to perform each of the tasks, their responsibilities, and the reporting relationships between project construction management and the mitigation and monitoring team.
- A description of how Native American Monitors or observers will be included, the procedures to be used to select them, and their role and responsibilities.
- A description of all impact-avoidance measures (such as flagging or fencing) to prohibit or otherwise restrict access to cultural or tribal cultural resources that are to be avoided during ground disturbance, construction, and/or operation, and identification of areas where these measures are to be implemented. The description shall address how these measures would be implemented prior to the start of ground disturbance and how long they would be needed to protect the resources from project-related effects. A statement that all encountered cultural and tribal cultural resources over 50 years old shall be recorded on Department of Parks and Recreation (DPR)

523 forms and mapped and photographed. In addition, all archaeological materials retained during archaeological investigations (survey, testing, data recovery) shall be curated in accordance with the California State Historical Resources Commission's (SHRC's) *Guidelines for the Curation of Archaeological Collections* (1993, or future updated guidelines from the SHRC), into a retrievable storage collection in a public repository or museum.

- A statement that the project owner will pay all curation fees for artifacts recovered and for related documentation produced during cultural and tribal cultural resource investigations conducted for the project. The project owner shall identify three possible curation facilities that could accept archaeological materials resulting from project activities.
- A statement demonstrating when and how the project owner will comply with Health and Human Safety Code, section 7050.5(b), and Public Resources Code, section 5097.98(b) and (e), including the statement that the project owner will notify the CPM and the Native American Heritage Commission of the discovery of human remains.
- A statement that the CRS has access to equipment and supplies necessary for site mapping, photography, and recovery of any archaeological materials that are encountered during ground disturbance and cannot be treated prescriptively.
- A description of the contents, format, and review and approval process of a final Cultural and Tribal Cultural Resources Report (CTRR), if resources are encountered, which shall be prepared according to *Archaeological Resource Management Report (ARMR)* guidelines.

Verification: Upon approval of the CRS proposed by the project owner, the CPM will provide the project owner an electronic copy of the draft model CTRMMP for the CRS.

At least 90 days prior to the start of ground disturbance, the project owner shall submit the CTRMMP to the CPM for review and approval. The CPM must approve the CTRMMP before construction can begin.

At least 30 days prior to the start of ground disturbance, in a letter to the CPM, the project owner shall agree to pay curation fees for any materials generated or collected during archaeological investigations (survey, testing, data recovery).

Within 90 days after completion of ground disturbance (including landscaping), if archaeological materials requiring curation were generated or collected, the project owner shall provide to the CPM a copy of an agreement with, or other written commitment from, a curation facility that meets the standards stated in the SHRC's *Guidelines for the Curation of Archaeological Collections* (1993, or future updated guidelines from SHRC), to accept the archaeological materials

from this project. Any agreements concerning curation will be retained and available for audit for the life of the project.

COC/MM CUL-3 Worker Environmental Awareness Program (WEAP) Prior to and for the duration of ground disturbance, the project owner shall provide WEAP training to all new workers within their first week of employment at the project site, along the linear facilities routes, and at laydown areas, roads, and other ancillary areas. The cultural and tribal cultural resources part of this training shall be prepared by the CRS, may be conducted by any member of the cultural and tribal cultural resources team, and may be presented in the form of a video. The CRS shall collaborate with any consulting California Native American tribal members if requested by a tribe in preparing and presenting the training. During the training and during construction, the CRS shall be available (by telephone or in person) to answer questions posed by employees. The training may be discontinued when ground disturbance is completed or suspended, but must be resumed when ground disturbance, such as landscaping, resumes. The training shall include:

- A discussion of applicable laws and penalties under law;
- Samples or visuals of artifacts that might be found in the project vicinity;
- A discussion of what such artifacts may look like when partially buried, or wholly buried and then freshly exposed;
- A discussion of what prehistoric and historical archaeological deposits look like at the surface and when exposed during construction, and the range of variation in the appearance of such deposits;
- Instruction that the CRS, Alternate CRS, and CRMs have the authority to halt ground disturbance around a discovery to an extent sufficient to ensure that the resource is protected from further impacts, as determined by the CRS;
- Instruction that employees, if the CRS, Alternate CRS, or CRMs are not present, are to halt work on their own in the vicinity of a potential cultural or tribal cultural resource discovery, and shall contact their supervisor and the CRS or CRM, and that redirection of work would be determined by the construction supervisor and the CRS;
- An informational brochure that identifies reporting procedures in the event of a discovery;
- An acknowledgement form signed by each worker indicating that they have received the training; and
- A sticker that shall be placed on hard hats indicating that environmental training has been completed.

No ground disturbance shall occur prior to implementation of the WEAP program unless such activities are specifically approved by the CPM.

Verification: At least 30 days prior to the beginning of ground disturbance, the CRS shall provide the draft text and/or training video for the cultural and tribal cultural resources WEAP with graphics and the informational brochure to the CPM for review and approval.

At least 15 days prior to the beginning of ground disturbance, the CPM will provide to the project owner a WEAP Training Acknowledgement form for each WEAP-trained worker to sign.

Monthly, until ground disturbance is completed, the project owner shall provide in the Monthly Compliance Report the WEAP Training Acknowledgement forms of workers who have completed the training in the prior month and a running total of all persons who have completed training to date.

COC/MM CUL-4 Archaeological Monitoring The CRS or an assigned Archaeological monitor(s) working under the direction of the CRS shall visit the site prior to construction and once every two weeks during construction or at the discretion of the CRS when ground-disturbance moves to a new location. During monitoring visits, the monitors shall examine the work areas for the presence of precontact artifacts (e.g., chipped stone tools and production debris, stone milling tools, ceramics), historic-period debris (e.g., metal, glass, ceramics), and/or soil discoloration that might indicate the presence of a cultural midden.

The archaeological monitor shall have the authority to halt and redirect work in the event of a discovery. If archaeological resources are encountered during ground-disturbing activities, work in the immediate area shall be halted and/or redirected, and the find evaluated for listing in the CRHR. Should an unanticipated resource be found as CRHR eligible and avoidance is infeasible, additional analysis (e.g., testing) may be necessary to determine if project impacts would be significant.

Archaeological monitoring may be expanded at the discretion of the CRS in consultation with the lead agency, as warranted by conditions such as encountering unanticipated cultural resources and/or tribal cultural resources.

Verification: Prior to signing a contract with a qualified archaeological specialists and Native American monitor(s), the Applicant shall provide a copy of the scope of work to the CEC's compliance proposed project manager (CPM) for review, including the qualification of the proposed monitors, proposed number of monitors to be employed, proposed construction schedule/hours during which monitors would be present on site, and other relevant details of the proposed cultural monitoring program for approval.

COC/MM CUL-5 Unanticipated Discovery of Cultural Resources In the event archaeological resources are unexpectedly encountered during ground-disturbing activities, work within 50 feet of the find shall halt and the CRS be contacted

immediately to evaluate the resource. Procedures laid out in the CTCRMMP shall be followed. These may include testing, excavation, and monitoring of the rest of construction. If the resource is determined by the CRS to be precontact, then representatives from interested Native American tribes shall also be contacted to participate in the evaluation of the resource. If the resource proves to be eligible for the CRHR and significant impacts to the resource cannot be avoided via project redesign, the CRS shall prepare a data recovery plan tailored to the physical nature and characteristics of the resource, per the requirements of the California Code of Regulations Guidelines § 15126.4(b)(3)(C). The data recovery plan shall identify data recovery excavation methods, measurable objectives, and data thresholds to reduce any significant impacts to cultural resources related to the resource. Pursuant to the data recovery plan, the CRS and Native American representative, as appropriate, shall recover and document the scientifically consequential information that justifies the resource's significance. The lead agency shall review and approve the treatment plan and archaeological testing as appropriate, and the resulting documentation shall be submitted to the regional repository of the California Historical Resources Information System, per California Code of Regulations Guidelines § 15126.4(b)(3)(C).

Verification: The CRS shall contact the CPM within 48 hours of any unanticipated discovery. The discovery will be recorded and documented in accordance with the CTCRMMP.

COC/MM CUL-6 Human Remains In the event human remains are uncovered during ground-disturbing activities on private or state owned land (including construction, operations and maintenance, and decommissioning), the applicant or its contractor shall immediately halt work within a 100-foot radius, contact the Alameda County Coroner to evaluate the remains, and follow the procedures and protocols pursuant to the California Code of Regulations, title 14, section 15064.5(e)(1). The Health and Safety Code, section 7050.5, requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to the Public Resources Code, section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the Native American Heritage Commission (NAHC). The NAHC will then identify the most likely descendant of the deceased Native American. The most likely descendant will make recommendations for means of treating, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code, section 5097.98.

Verification: Should human remains be discovered, the archaeological specialist and Native American Monitor(s) shall comply with state law. The archaeological specialist shall notify CPM within 24 hours of the discovery and invite CEC's participation in the resolution of the find.

5.4.6 References

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5.5 Efficiency and Energy Resources

5.5.1 Environmental Setting

Existing Conditions

The proposed Potentia-Viridi Battery Energy Storage System (project) would store and discharge electricity utilizing a battery energy storage system (BESS) to enhance grid reliability. The project would consist of a BESS with a total capacity of up to 400 megawatts (MW) for up to eight hours (AMLGMN 2024jj, Section 1.2, and AMLGMN 2024kk, Section 2). A BESS stores electricity from the grid during periods of low demand and discharges power back to the grid during peak demand to enhance reliability and stability. See **Section 2, Introduction**, for a description of the project components within the California Energy Commission's (CEC's) Opt-In certification and project components outside the CEC's Opt-In certification.

The project would not include any permanent diesel, natural gas, or liquid petroleum-powered emergency generators to support critical loads during operations. Instead, power for critical loads would be provided through a separate auxiliary power connection to the on-site project substation (AMLGMN 2024p, Section 1.3).

Regulatory

Federal

There are no applicable federal laws, ordinances, regulations, and standards (LORS) that govern the efficiency of the utilization of BESS.

State

California 2025 Energy Efficiency Standards for Residential and Nonresidential Buildings—Green Building Standards Code, California Code of Regulations, Title 24. The California Green Building Standards Code (California Code of Regulations, Title 24, Part 11) applies to the planning, design, operation, construction, use, and occupancy of newly constructed power plants and their ancillary facilities and requires the installation of energy efficient indoor infrastructure.

Senate Bill 100—The 100 Percent Clean Energy Act of 2018. Senate Bill (SB) 100 (Chapter 312, Statutes of 2018) requires that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt-hours of those products sold to their retail end-use customers achieve 44 percent of retail sales by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030. The bill also requires the Public Utilities Commission, California Energy Commission, and State Air Resources Board to utilize programs authorized under existing statutes to meet the state policy goal of 100 percent of total retail sales of electricity in California provided

by eligible renewable energy resources and zero-carbon resources by December 31, 2045.

Local

Alameda County General Plan. The Community Climate Action Plan Element of the General Plan promotes the conservation of energy, utilization of renewable energy resources and energy efficiency.

Cumulative

Section 15130 of the CEQA Guidelines (Cal. Code Regs., tit. 14) requires a discussion of cumulative environmental impacts. Cumulative impacts are two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. The CEQA Guidelines require that the discussion reflect the severity of the impacts and the likelihood of their occurrence but need not provide as much detail as the discussion of the impacts attributable to the project alone.

Pursuant to CEQA, a cumulative impacts analysis can be performed by either 1) summarizing growth projections in an adopted general plan or in a prior certified environmental document, or 2) compiling a list of past, present, and probable future projects producing related or cumulative impacts. The second method has been utilized for the purposes of this Staff Assessment.

5.5.2 Environmental Impacts

EFFICIENCY AND ENERGY RESOURCES Would the project:	**Significant and Unavoidable Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, energy

5.5.2.1 Methodology and Thresholds of Significance

Methodology

The above environmental checklist constitutes the methodology for this analysis.

Thresholds of Significance

There are no thresholds of significance applicable to this project. However, the project would have a significant impact if its construction and operation significantly impact the available energy resources.

5.5.2.2 Direct and Indirect Impacts

a. Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Construction

Less Than Significant Impact. Based on the analysis below, the construction of the project would have a less than significant impact on local and regional energy supplies and would not consume energy resources in a wasteful, inefficient, or unnecessary manner.

Project Components Within the CEC's Opt-In Certification and Project Components Outside the CEC's Opt-In Certification

Construction would take approximately 18 months to complete, followed by an additional six months of testing and commissioning (AMLGMN 2024p, Section 1.5, page 137). Construction activities would include site preparation, grading, foundations, BESS installation, substation installation, and linear facilities construction (AMLGMN 2024o Section 2.3.1, Table 2-5). Throughout these construction activities, various equipment, such as excavators, dozers, rollers, graders, and cranes, would consume nonrenewable energy resources, primarily fossil fuels such as gasoline and diesel (AMLGMN 2024i, Section 3.7.3.3, Table 3.7-3). It is anticipated that fossil fuels used by this equipment during construction would be used efficiently and would not result in significant long-term depletion of these energy resources or permanently increase the project's reliance on them.

The idling time of construction equipment during the construction phase would be minimized by either shutting off equipment when not in use or reducing the idling time to a maximum of five minutes (Dudek 2025g, Section 1.4). Therefore, construction would have a less-than-significant impact on local and regional energy supplies and a less-than-significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources.

Operation

Less Than Significant Impact. Based on the analysis below, the project's use of fuel during operations would have a less than significant impact on energy supplies and resources. Furthermore, project operations would not consume energy in a wasteful, inefficient or unnecessary manner.

Project Components Within the CEC's Opt-In Certification and Project Components Outside the CEC's Opt-In Certification

The included BESS is designed to store electricity during periods of low demand and discharge it back to the grid during periods of high demand. This system would help balance energy supply, enhance grid reliability, and improve overall energy efficiency by shifting electricity usage to when it is most needed.

For energy storage systems, the round-trip efficiency is a useful measure of energy consumption from the grid. A higher round-trip efficiency indicates less energy is lost in the processes of storing and discharging electricity. The round-trip efficiency is calculated as the ratio of useful energy output divided by useful energy input. A BESS has a high round-trip efficiency of approximately 85 percent, meaning most of energy stored is returned for use (NREL 2024). Their inefficiency can be attributed to heat and electrical transmission losses.

As discussed above, the project would not include any permanent diesel, natural gas, or liquid petroleum-powered emergency generators to support critical loads. Therefore, the project's operation would contribute to the consumption of fossil fuel resources such as diesel or liquefied petroleum gas (LPG) in minimal amounts, resulting in a less than significant impact on available fossil fuel resources of California. Furthermore, the project's energy demand would be limited to electricity usage during battery charging and maintenance operations, which would be negligible.

Staff concludes that energy consumed during operations would not create significant adverse effects on energy supplies or resources, nor would it consume energy in a wasteful or inefficient manner.

b. Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Construction

No Impact. Based on the analysis below, construction of the project would neither conflict with nor obstruct a state or local plan for renewable energy or energy efficiency, and therefore, would have no impact on those plans.

Project Components Within the CEC's Opt-In Certification and Project Components Outside the CEC's Opt-In Certification

The project is committed to energy-efficient construction and would implement measures to reduce energy consumption during construction. The project would recycle construction and demolition debris in compliance with Assembly Bill 341 (Chesbro, Chapter 476, Statutes of 2011) and Senate Bill 1018 (Chapter 39, Statutes of 2012) (AMLGMN 2024w, Section 3.14.6.2). Moreover, the project would also comply with the California Green Building Code.

Operation

No Impact. Based on the analysis below, project operations would not impact a state or local plan for renewable energy or energy efficiency.

Project Components Within the CEC's Opt-In Certification and Project Components Outside the CEC's Opt-In Certification

During operation, the project would utilize grid electricity from Pacific Gas & Electric Company (PG&E) to charge the BESS, which would have a capacity of up to 400 MW and 3,200 megawatt-hours. The BESS would then discharge electricity back into the PG&E grid during peak demand periods to stabilize the system and enhance overall energy reliability (AMLGMN 2024p, Section 1.3).

PG&E has committed to meeting California's Renewable Portfolio Standard through its Integrated Resource Plan (PG&E 2022). PG&E's 2023 Power Content Label's Base Plan includes 32.8 percent Eligible Renewable, which includes 3.4 percent biomass and biowaste, 0.3 percent geothermal, 2.5 percent eligible hydroelectric, 20.2 percent solar, and 6.3 percent wind (PG&E 2023). The project would support California's renewable energy and storage goals by enabling the storage and discharge of renewable electricity to the PG&E grid. Furthermore, the project would be consistent with SB 100 (AMLGMN 2024o, Section 2.1.2).

The project would comply with the California Green Building Code through consistency with the California Building Standard Codes (AMLGMN 2024w, Section 3.14.6.2).

The project would not include permanent diesel, natural gas, or LPG emergency generators and, therefore, would consume minimal fossil fuels. Project energy consumption would be limited to minimal electricity for charging and maintenance.

Through energy-efficient design and increased renewable electricity storage, the project would neither conflict with nor obstruct state or local plans for renewable energy or energy efficiency and, therefore, would have no impact on those plans.

5.5.2.3 Cumulative Impacts

No Impact. The project would not significantly consume diesel, natural gas, or liquid petroleum energy resources. Also, a BESS stores electricity for later use rather than consuming energy. Thus, the project would have no cumulative efficiency and energy resource impact with past, present, or probable future projects.

5.5.3 Project Conformance with Applicable LORS

Table 5.5-1 below details staff's determination of conformance with applicable LORS. As shown in this table, staff concludes that the proposed project components within the CEC's Opt-In certification would conform with all applicable LORS.

TABLE 5.5-1 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
State	
Senate Bill (SB) 100—The 100 Percent Clean Energy Act of 2018.	**Yes.** The project would comply with SB 100 through its energy-efficient design and increasing electricity storage.
California 2025 Energy Efficiency Standards for Residential and Nonresidential Buildings—Green Building Standards Code, California Code of Regulations, Title 24.	**Yes.** The project would comply with the California Green Building Code through conformance with the California Building Standard Codes.
Alameda County General Plan.	**Yes.** The project would comply with the County's General Plan since the project would conserve and utilize energy resources efficiently.

5.5.4 Conclusions and Recommendations

As discussed above, the project components within the CEC's Opt-In certification and the project components outside the CEC's Opt-In certification would have a less than significant impact related to efficiency and energy resources and the project components within the CEC's Opt-In certification would conform with applicable LORS.

5.5.5 Proposed Conditions of Certification

There are no proposed conditions of certification for the project components within the CEC's Opt-In certification for efficiency and energy resources.

5.5.6 Recommended Mitigation Measures

There are no recommended mitigation measures for the project components outside the CEC's Opt-In certification for efficiency and energy resources.

5.5.7 References

AMLGMN 2024i – Allen Matkins Leck Gamble Mallory & Nats (TN 258010). Noise, dated July 26, 2024. Accessed online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-OPT-04

AMLGMN 2024jj – Allen Matkins Leck Gamble Mallory & Nats (TN 258043). Waste Management Plan, dated July 26, 2024. Accessed online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-OPT-04

AMLGMN 2024kk – Allen Matkins Leck Gamble Mallory & Nats (TN 258044). Emergency Response Plan, dated July 26, 2024. Accessed online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-OPT-04

AMLGMN 2024o – Allen Matkins Leck Gamble Mallory & Nats (TN 258016). Project Description, dated July 26, 2024. Accessed online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-OPT-04

AMLGMN 2024p – Allen Matkins Leck Gamble Mallory & Nats (TN 258017). Introduction, dated July 26, 2024. Accessed online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-OPT-04

AMLGMN 2024w – Allen Matkins Leck Gamble Mallory & Nats (TN 258026). Waste Management, dated July 26, 2024. Accessed online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-OPT-04

Dudek 2025g – Dudek (TN 261404). DR Response 2, dated January 29, 2025. Accessed online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-OPT-04

NREL 2024 – National Renewable Energy Laboratory (NREL). Annual Technology Baseline. Utility-Scale Battery Storage. Accessed on: August 8, 2024. Accessed online at: https://atb.nrel.gov/electricity/2024/utility-scale_battery_storage

PG&E 2022 – Pacific Gas and Electric (PG&E). 2022 Integrated Resource Plan. Accessed on: January 3, 2024. Accessed online at: https://www.pge.com/en/about/doing-business-with-pge/integrated-resource-planning.html

PG&E 2023 – Pacific Gas and Electric (PG&E). 2023 Power Content. Accessed on: April 10, 2025. Accessed online at: https://www.pge.com/assets/pge/docs/account/billing-and-assistance/bill-inserts/1224-power-content-label.pdf

SWRCB 2024 – California State Water Resources Control Board. Land Disposal Program. dated March 29, 2023. Accessed online at: https://www.waterboards.ca.gov/water_issues/programs/land_disposal/treated_wood_waste.html#:~:text=Class%20III%20and%20II/III,found%20on%20the%20About%20page.

5.6 Geology, Paleontology, and Minerals

Section 5.6.1 describes the environmental and regulatory setting related to geology, paleontology, and minerals. Section 5.6.2 evaluates if project construction and operation may impact existing geologic hazards, paleontological resources, mineral resources, and geologic resources of commercial, recreational, and scientific value. The section also evaluates if geologic hazards would impact project construction and operation. Mitigation would reduce the identified potential impacts to less than significant.

Section 5.6.3 evaluates the project's conformance with applicable laws, ordinances, regulations, and standards (LORS) regarding geology, paleontology, and minerals. Section 5.6.4 provides CEC staff's recommendation to adopt the Conditions of Certification (COCs) provided in Section 5.6.5. Section 5.6.6 provides CEC staff's recommended Mitigation Measures (MMs). Section 5.6.7 lists references cited in Section 5.6.

5.6.1 Environmental Setting

Existing Conditions

The proposed 400-megawatt Potentia-Viridi Battery Energy Storage System (BESS; project) is proposed on approximately 102 acres in eastern unincorporated Alameda County, 2.5 miles southwest of Tracy, CA, near Patterson Dry Creek. Land uses at, and near, the project site consists of the existing Pacific Gas and Electric (PG&E) owned and operated Tesla Substation, a few single-family residences, rural roads, railroads, and undeveloped rural agricultural lands that are used for grazing. The proposed project components include a 3,200-megawatt-hour BESS facility, three operations and maintenance (O&M) buildings, a substation, a 500-kilovolt overhead intertie transmission (gen-tie) line, and interconnection facilities within the Tesla Substation (Dudek 2025d).

The proposed BESS site is on the western portion of Assessor's Parcel Number (APN) 99N-7890-002-04, a privately owned parcel of annual grasslands that is suitable for grazing. The gen-tie line would traverse southeast from the project substation, cross Patterson Pass Road, and extend east to the Point of Interconnection at the Tesla Substation. The gen-tie line is sited on APNs 99B-7890-2-4, 99B-7890-2-6, and 99B-7885-12 (Dudek 2025d). For additional information, including a list of which project components are within, as well as those outside of the CEC's Opt-In Certification, see **Section 2, Introduction**, and **Section 3, Project Description**.

Geological Hazards and Resources

Regional Geology

The proposed project site is in the northeastern part of the Diablo Range, a NW-trending mountain range in the central Coast Ranges geomorphic province. The proposed project is near the western border of the Central Valley geomorphic province (CDOC 2002). Surface Quaternary[1] deposits in the region include Holocene alluvium and artificial fill, Holocene[2] and Pleistocene[3] alluvial fans and landslides, and Pleistocene pediments. Bedrock in the northeastern Diablo Range includes Pliocene[4] to Miocene[5] continental and marine sedimentary rocks, Eocene[6] marine sedimentary rocks, Cretaceous[7] to Jurassic[8] marine sedimentary and metasedimentary rocks, and Mesozoic[9] ultramafic rocks (CDOC 2023).

The North American and Pacific transform tectonic plate boundary, which contains major subparallel NW-striking dextral faults, such as the San Andreas, Rodgers Creek-Hayward, Calaveras, and Clayton-Marsh Creek-Greenville fault zones, travels through, and creates, the central Coast Ranges. In the northern Diablo Range, plate motion along the NW-striking dextral faults creates restraining bends, or compressional zones where dextral faulting, local thrust faulting, and folding occur. In the northern Diablo Range, a restraining bend between the Calaveras and Greenville faults formed the Mount Diablo fold-and-thrust belt (CDOC 2023).

Local Geology and Stratigraphy

The proposed project site is in the northeastern Diablo Range, near Patterson Dry Creek and the existing Tesla Substation. The California Department of Conservation (CDOC) California Geological Survey (CGS) completed recent regional geologic mapping that includes the project site. According to the CGS 2023 Geologic and Geophysical Maps of the Stockton 30' x 60' Quadrangle, California, the following geologic units are mapped at the surface within two miles of the project (CDOC 2023):

- Historical (≤ 150 years old) artificial fill (af) is mapped underlying a railroad within one mile of the project (Dudek 2025yy). CDOC (2023) described the map unit as an undifferentiated constructed deposit of various materials and ages.

1 The Quaternary period began 2.58 million years ago (Ma) and is ongoing (GSA 2022).
2 The Holocene epoch began 11.7 thousand years ago (ka) and is ongoing (GSA 2022).
3 The Pleistocene epoch began 2.58 million years ago (Ma) and ended 11.7 ka (GSA 2022).
4 The Pliocene epoch began 5.33 Ma and ended 2.58 Ma (GSA 2022).
5 The Miocene epoch began 23.03 Ma and ended 5.33 Ma (GSA 2022).
6 The Eocene epoch began 55.6 Ma and ended 33.9 Ma (GSA 2022).
7 The Cretaceous period began about 145.0 Ma and ended 66.0 Ma (GSA 2022).
8 The Jurassic period began 201.3 MA and ended about 145.0 Ma (GSA 2022).
9 The Mesozoic era began 251.9 Ma and ended 66.0 MA (GSA 2022).

- Quaternary surficial deposits underlie parts of the eastern project site and are found within two miles of the project. These deposits are recent in age, presumably Holocene to Pleistocene, and unconformably overlie older rock formations (CDOC 2023; Dudek 2025yy).
    - Undivided Holocene Alluvium (Qha) underlies parts of the northeastern and southeastern project site (Dudek 2025yy). CDOC (2023) described the map unit as alluvial sediment deposited on fans, terraces, or in basins. Alluvial deposits are poorly to moderately sorted sand, gravel, and silt grain size sediments that were deposited by streams. Alluvium mapped as undivided indicates that different types of this unit were not delineated (CDOC 2023).
    - Holocene to Pleistocene Landslide Deposits (Qls) occur within two miles of the project (Dudek 2025yy). CDOC (2023) described the map unit as are chaotic deposits of sediment and bedrock. CDOC (2023)'s landslide mapping included previously mapped, and generally larger, landslides. CDOC (2023) did not conduct a uniform or thorough mapping of landslides and landslide hazards.
    - Latest Pleistocene Alluvial Fan Deposits (Qpf) occur at the surface within one mile of the project (Dudek 2025yy). CDOC (2023) described the map unit as alluvial fans that are dissected and topographically higher compared to more recent Holocene alluvial fans. Alluvial fan deposits are poorly to moderately sorted and bedded sand, gravel, and silt grain size sediments that were deposited by streams and rivers (CDOC (2023).
    - Late to Early Pleistocene Old Pediment Deposits (Qop) occur at the surface within one mile of the project (Dudek 2025yy). CDOC (2023) described the map unit as a veneer of old alluvium that was deposited on broad and planar erosional surfaces of older formations. Old pediment deposits were originally deposited by streams and can now be found tens to hundreds of feet above active Holocene stream channels. Well-formed soils typically cap old pediment deposits (CDOC 2023).
- Early Pliocene (age inferred) to Late Miocene Carbona Formation (PMc) is mapped at the surface within one mile of the project's eastern boundary (Dudek 2025yy). CDOC (2023) described the map unit as poorly to moderately consolidated and moderately well-bedded conglomerate, sandstone, and siltstone. The formation locally contains lacustrine clay, silt, diatomite, and freshwater limestone (CDOC 2023). The formation is folded concordantly with underlying formations, including the older Neroly Formation, and is unconformably overlain by Quaternary surficial deposits (CDOC 2023).
- Late Miocene Neroly Formation (Mnr) underlies most of the project and is widely mapped at the surface within one mile of the project (Dudek 2025yy). CDOC (2023) described the map unit as blue to blue-gray, fine to coarse-grained, volcanic-rich, shallow marine sandstone, with minor siltstone, shale, tuff, and andesite-pebble conglomerate. The formation contains locally mapped shale, sandstone, and conglomerate and sandstone members. K/Ar geochronology on tuffs in the

formation yield ages of 9.7 million years old (Ma) and 10 Ma to 12 Ma. The Neroly Formation is concordantly folded with younger and older bedrock formations, and is unconformably overlain by Quaternary surficial deposits (CDOC 2023).

- Late Miocene Cierbo Sandstone (Mc) is mapped at the surface within one mile of the project's western boundary (Dudek 2025yy). CDOC (2023) described the map unit as light-gray, light-blue, and white, massive to thick-bedded, fine- to coarse-grained, moderately consolidated, quarzitic, marine sandstone with minor lithic and biotite grains. The formation locally contains beds of highly fossiliferous, coarse-grained sandstone, minor pebble conglomerate, siltstone, and tuff. The Cierbo Sandstone underlies the younger Neroly Formation. The Cierbo Formation is concordantly folded with younger and older bedrock formations, and is unconformably overlain by Quaternary surficial deposits (CDOC 2023).
- The Late Cretaceous Upper Great Valley sequence is a thick sequence of marine and lesser nonmarine clastic sediment rocks. CDOC (2023) compiled and attemped to reconcile many decades of geologic mapping investigations. Due to challenges in reconciling stratigraphy across the northern Diablo Range, CDOC (2023) split the northern Diablo Range into two zones, VI South and VI North. The proposed project is near the boundary between the two zones. For this document, CEC staff considers the Panoche Formation and the combined Late Cretaceous Units C and D as mostly the same rock formation, with different names.
    - In Zone VI South, south of the project site, CDOC (2023) retained earlier mapping, which mapped much of the upper Great Valley Sequence as the Panoche Formation.
        - The Late Cretaceous Panoche Formation – Sandstone member (Kps) is mapped at the surface within two miles of the project's southeastern boundary (Dudek 2025yy). CDOC (2023) described the map unit as light gray to light brown, hard, bedded, fine- to medium-grained arkosic sandstone. The formation contains local large (up to 0.5 m) dark brown concretions and thin interbeds of gray sandstone.
    - In Zone VI North, north of the project site, CDOC (2023) used recent geologic investigations to split the Panoche Formation into Late Cretaceous Units D, C, and B. From Units D to B, the units are a sequence of rock formations that descend in stratigraphic order and increase in age. Late Cretaceous Units D through B uncomforably underlie concordantly folded younger bedrock formations and Quaternary surficial deposits
        - Late Cretaceous Unit D – Marine sandstone (Kd) is mapped at the surface within one mile of the project's northwestern boundary (Dudek 2025yy). CDOC (2023) described the map unit as medium- to coarse-grained, light gray, clean sandstone. The formation locally contains interbeds of wacke, siltstone, mudstone, and a locally mapped shale member (CDOC 2023).
        - Late Cretaceous Unit C – Upper Member (Kcu) is mapped at the surface within two miles of the project's western boundary (Dudek 2025yy). CDOC

(2023) described the map unit as shale and siltstone with local sandstone interbeds.

- Late Cretaceous Unit B is not mapped at the surface within two miles of the project (CDOC 2023).

Subsurface Soils

The applicant completed a preliminary site-specific geotechnical investigation. The purpose of the geotechnical investigation was to evaluate shallow soil and rock at the project site and make preliminary facility design recommendations to mitigate potential geologic hazards. The geotechnical investigation advanced, sampled, and tested eleven soil penetration test borings and conducted geophysical surveys (Dudek 2025bbb).

At the BESS site, six soil borings (boring IDs B6, B7, B8, B9, B10, and B11) were completed and evaluated (AMLGMN 2024o; Dudek 2025bbb). Boring B6 encountered fat clay with sand, lean clay with sand, and clayey sand from 0 feet (ft) to 24 ft below ground surface (bgs) and sandstone from 24 ft to 28 ft bgs. Boring B7 encountered sandy silt from 0 ft to 2.5 ft bgs, sandstone from 2.5 ft to 4.5 ft bgs, poorly graded sand with silt from 4.5 ft to 9 ft bgs, and siltstone from 9 to 15.5 ft bgs. Boring B8 encountered sandy silt from 0 ft to 2.5 ft bgs and sandstone from 2.5 ft to 28.3 ft bgs. Boring B9 encountered siltstone from 0 ft to 27.8 ft bgs. Boring B10 encountered fat clay from 0 ft to 4 ft bgs, lean clay from 4 ft to 7 ft bgs, and claystone from 7 ft to 31.5 ft bgs. Boring B11 encountered sandy lean clay from 0 ft to 5 ft and alternating claystone and sandstone from 5 ft to 28 ft bgs. To summarize, at the BESS site, a thin layer of clay and silt soil overlie siltstone and claystone bedrock (Dudek 2025bbb). The results are consistent with CDOC (2023) regional mapping, which reports the Miocene Neroly Formation at the surface of the BESS site.

At the O&M building and substation sites, four soil borings (boring IDs B2, B3, B4, and B5) were completed and evaluated (AMLGMN 2024o; Dudek 2025bbb). Boring B2 encountered silty sand from 0 ft to 9 ft bgs, sandstone from 9 ft to 23ft bgs, sandy silt from 23 ft to 28 ft bgs, and sandstone and siltstone from 28 ft to 40.9 ft bgs. Boring B3 encountered silt with sand from 0 ft to 2.5 ft bgs and siltstone from 2.5 ft to 40.8 ft. Boring B4 encountered fat clay with sand from 0 ft to 4 ft bgs, siltstone from 4 ft to 14 ft bgs, lean clay from 14 ft to 19 ft, and claystone from 19 ft to 40.9 ft. To summarize, at the O&M building and substation sites, a thin layer of clay, silt, and sand soil overlie siltstone and sandstone (Dudek 2025bbb). The results are consistent with CDOC (2023) regional mapping, which reports the Miocene Neroly Formation at the surface of the O&M building and substation sites.

Along the gen-tie line route, one soil boring (boring ID B1) was completed and evaluated (AMLGMN 2024o; Dudek 2025bbb). Boring B1 encountered silty sand and sandy silt from 0 ft to 18 ft bgs and siltstone from 18 to 23 ft bgs. From 23 ft to 37 ft bgs, the boring encountered sandy silt, silt with sand, and silty sand. From 37 ft to 51.5 bgs, the boring encountered lean clay with sand. Bedrock was not encountered. To summarize, a relatively thicker layer of sand and silt soil underlie the gen-tie line route

(Dudek 2025bbb). The results are consistent with CDOC (2023) regional mapping, which reports the Undivided Holocene Alluvium at the surface of the gen-tie line site.

The geotechnical investigation included seismic and resistivity surveys to evaluate subsurface soil and rock at the project site. Seismic Refraction (SR) surveys, SR-1 to SR-4, and Multichannel Analysis of Surface Waves (MASW) soundings, MASW-1 to MASW-4, were conducted along ridge lines to evaluate areas where the largest amount of grading is proposed. Electrical Resistivity Sounding (ERS) surveys, ERS-1 and ERS-2, were conducted to evaluate the project's western and eastern areas, respectively (Dudek 2025bbb).

In the northern project area, the SR and MASW seismic surveys indicate a relatively thick layer of soil, poorly consolidated sedimentary deposits, and/or weathered rock overlie harder rock. In the western project site, SR-1 indicates soil from 0 ft to 10 ft bgs, poorly consolidated sediments from 10 to 20 ft bgs, and consolidated or cemented sedimentary deposits or intensely to highly weathered rock from 20 ft to 40 ft bgs. The shape of the contact between poorly consolidated sediments and underlying coherent sediments or rock indicates the contact may be a paleochannel. MASW-1 indicates soft and stiff soil from 5 ft to 15 ft bgs and very dense soil and soft rock from 15 ft to 100 ft bgs (Dudek 2025bbb).

In the northeastern project site, SR-2 indicates soil from 0 ft to 10 or 20 ft bgs, poorly consolidated sediments from 20 ft to 30 ft bgs, and consolidated or cemented sedimentary deposits or intensely to highly weathered rock from 30 ft to 40 ft bgs. MASW-2 indicates stiff soil from 5 ft to 9 ft bgs, very dense soil and soft rock from 9 ft to 60 ft bgs, and rock from 60 ft to 100 ft bgs (Dudek 2025bbb).

In the southwestern project area, the SR and MASW seismic surveys indicate a relatively thinner layer of soil and weathered rock overlie harder rock. In the southwestern project site, SR-3 indicates soil from 0 to 10 ft bgs, weathered rock from 5 ft or 10 ft to 25 ft bgs, and competent rock from 25 ft to 35 ft bgs. MASW-3 indicates stiff soil from 5 ft to 23 ft bgs and very dense soil and soft rock from 23 ft to 100 ft bgs. Nearby, SR-4 indicates soil from 0 to 5 ft or 10 ft bgs, weathered rock from 5 ft or 10 ft to 25 ft bgs, and competent rock from 25 ft or 35 ft to 40 ft bgs. MASW-4 indicates stiff soil from very dense soil and soft rock from 5 ft to 18 ft bgs, and rock from 18 ft to 100 ft bgs (Dudek 2025bbb).

The ERS surveys indicate the project's subsurface is comprised of mixed soils, sediments, and sedimentary rock (Dudek 2025bbb).

Faulting and Seismicity

The San Francisco Bay Region, including Alameda County, is in a tectonic plate boundary containing many Holocene-active faults that produce high-magnitude earthquakes. Modeling predicts there is a 72 percent chance of a magnitude (M) ≥ 6.7 earthquake in the San Francisco Bay Region during 2014 to 2043 (USGS 2016). The

potential for seismic hazards to impact the project depends on the proximity to, and length, of nearby Holocene-active and potentially active faults, the local geologic and topographic conditions, and earthquake magnitudes. Potential seismic hazards include ground rupture along fault traces, strong ground motion, seismically induced ground failure, including liquefaction, and landslides (CBC 2022).

In accordance with the 1972 Alquist-Priolo Earthquake Fault Zone Act and 1990 Seismic Hazards Mapping Act, the CGS delineates Zones of Required Investigation to reduce human and property losses from fault rupture, liquefaction, and earthquake-induced landslides (CDOC 2008, 2018, 2024). To mitigate impacts from fault rupture, the CGS delineates Earthquake Fault Zones to prevent the construction of buildings for human occupancy on Holocene-active faults and fault zones. Earthquake Fault Zones are regulatory boundary zones surrounding well defined Holocene-active faults or fault zones. Holocene-active faults are those that have ruptured in the past 11,700 years (CDOC 2018).

The CGS also delineates Pre-Holocene faults. Pre-Holocene faults show evidence of rupture in the past 1.6 million years, but do not show evidence of rupture in the past 11,700 years. Evidence that Pre-Holocene faults may rupture in the future should be considered (CDOC 2018). For the evaluation in this section, Pre-Holocene faults showing evidence of rupture in the past 1.6 million years are termed "potentially active".

According to the CGS Earthquake Zones of Required Investigation online mapping application, the CGS has not evaluated the Midway 7.5' topographic quadrangle, which contains the project site, for Earthquake Fault Zones, also known as Zones of Required Investigation for Alquist-Priolo faults or fault zones (CDOC 2024).

The CGS has evaluated Altamont 7.5' topographic quadrangle, which is adjacent and west of the Midway 7.5' topographic quadrangle. Six miles west of the proposed project, the Greenville segment of the Clayton-Marsh Creek-Greenville fault zone is the closest known and mapped Alquist Priolo fault zone to the project (CDOC 2024).

According to the United States Geological Survey (USGS) Quaternary Fault and Fold Database of the United States and the CGS Fault Activity Map of California, there are no Holocene-active nor potentially active faults intersecting the project site. **Table 5.6-1** lists many Holocene-active and potentially active faults that exist within 25 miles of the project (USGS 2017; CDOC 2022).

At 0.4 miles east of the project, the Midway fault is the closest potentially active fault to the project. Several significant Holocene-active faults are within 25 miles of the project site. The Greenville segment of the Clayton-Marsh Creek-Greenville fault zone is six miles west of the project site. The Corral Hollow-Carnegie fault zone is six miles south of the project site. The Las Positas fault is seven miles west of the project site. The Pleasanton and Calaveras faults are 16 to 18 miles west of the project site. The Warm Springs fault and Hayward fault zone are 22 to 23 miles west of the project site.

TABLE 5.6-1 QUATERNARY FAULTS WITHIN 25 MILES TO THE PROJECT SITE

Fault	Status	Approximate Distance from the Project Site (miles)
Midway fault	Potentially active	0.4
Black Butte fault	Potentially active	4
Clayton-Marsh Creek-Greenville fault zone	Holocene-active	6
Corral Hollow-Carnegie fault	Holocene-active	6
Las Positas fault	Holocene-active	7
Williams fault	Potentially active	7
Vernalis fault	Potentially active	9
Great Valley thrust fault zone	Potentially active	10
Midland fault zone	Potentially active	10
San Joaquin fault	Potentially active	10
Livermore fault	Potentially active	12
Verona fault	Holocene-active	13
Mount Diablo thrust fault	Potentially active	14
Davis fault	Potentially active	16
Pleasonton fault	Holocene-active	16
Calaveras fault zone	Holocene-active	18
Warm Springs fault	Holocene-active	22
Chabot fault	Potentially active	23
Mission fault	Potentially active	23
Hayward fault zone	Holocene-active	23

Sources: USGS 2017; CDOC 2022

Strong Ground Motion

The intensity of strong ground motion depends upon the magnitude of an earthquake, the distance from the epicenter, and the geology between the epicenter and the site, and geology at the site. Ground motion intensity in soft subsurface materials, such as soil or alluvium, is typically high. In soft subsurface materials, seismic waves typically slow down and increase amplitude. Ground motion intensity in hard subsurface materials, such as rock formations, is usually less. In hard subsurface materials, seismic waves typically speed up and decrease in amplitude.

Numerous Holocene-active faults in Alameda County, and the San Francisco Bay Region, have ruptured in the recent past and will produce significant earthquakes again (USGS 2015, 2016). Earthquake rupture modeling predicts high probabilities that one or more significant earthquakes will impact the San Francisco Bay Region, including Alameda County, between 2014 and 2043. Modeling predicts probabilities of 98 percent for a M ≥ 6.0 earthquake, 72 percent for a M ≥ 6.7 earthquake, 51 percent for a M ≥ 7.0 earthquake, and 20 percent for a ≥ M 7.5 earthquake (USGS 2015).

About 62.5 percent of Alameda County's area has potential for severe shaking (Alameda County 2021). Severe shaking, defined as an intensity of Modified Mercalli Intensity (MMI) 8 scale, causes slight damage to specifically designed structures, considerable damage to ordinary buildings, and great damage to poorly built structures (CDOC 2025c).

CGS Map Sheet 48, Earthquake Shaking Potential for California, shows the level of shaking with a 2 percent probability of being exceeded in 50 years, which is equivalent to a 2,475-year average recurrence interval. CGS Map Sheet 48 predicts that violent shaking will impact the project site in eastern Alameda County. Violent shaking, defined as MMI 9, cracks, tilts, and shifts buildings off their foundations, cracks the ground, and breaks underground pipes (CDOC 2025c).

The preliminary site-specific geotechnical report classified the project site as Seismic Design Class C and calculated anticipated peak ground accelerations (PGA). Using USGS NSHM Coterminous U.S. 2018 interactive disaggregations for a 2 percent probability of exceedance in 50 years, the PGA calculated for the project site is 0.747 units of gravity (g). Using the ASCE 17-16 Standard, the mean peak PGA is about 0.794 g (Dudek 2025bbb).

Liquefaction and Lateral Spreading

Liquefaction is a geologic hazard that causes potentially damaging ground deformation. Liquefaction is a phenomenon in which dynamic forces, such as intense and prolonged ground shaking, cause saturated and cohesionless soils, such as sand, silt, and gravel, to temporarily lose their strength and act as a fluid. Liquefaction depends on the depth to water, grain size distribution, relative soil density, degree of saturation, and intensity and duration of the earthquake. Soils most susceptible to liquefaction are loose, uniformly graded, saturated, fine-grained sands that lie close to the ground surface (Youd and Idriss 2001).

The term liquefaction is typically used to describe materials that spread vertically. Lateral spreading is a type of liquefaction in which liquefied materials spread horizontally toward a free face (Youd and Idriss 2001).

The CGS has not evaluated the Midway 7.5’ topographic quadrangle for Zones of Required Investigation for liquefaction zones. The CGS has evaluated the adjacent Altamont 7.5’ topographic quadrangle for liquefaction zones. In some areas of the Diablo Range, the Altamont 7.5’ topographic quadrangle contains known and mapped liquefaction zones in flatter areas along streams (CDOC 2024).

The CGS has evaluated the Byron Hot Spring 7.5’ topographic quadrangle, which is adjacent and northwest of the Midway 7.5’ topographic quadrangle, for liquefaction zones. Within areas of the Diablo Range that are contiguous into the Midway 7.5’ topographic quadrangle, the Byron Hot Spring 7.5’ topographic quadrangle contains known and mapped liquefaction zones in flatter areas along streams.

Regional liquefaction susceptibility mapping evaluated the project site. The Neroly Formation is considered to have very low susceptibility to liquefaction. Undivided Holocene Alluvium is considered highly susceptible to liquefaction (ABAG 2022b).

The water content, or saturation, of subsurface materials influences liquefaction potential. In June 2024, the preliminary site-specific geotechnical investigation drilled

11 borings to depths of 15.5 ft to 51.5 ft bgs and did not encounter groundwater (Dudek 2025bbb).

Landslides

Mass wasting, including landslides or slope creep, is a mass of rock, soil, or debris that slides, flows, or falls downslope. Slope creep is a slow-moving type of mass wasting that occurs when plastic soils, such as clays, shrink and swell with seasonal changes in saturation.

The potential for naturally occurring slope instability depends on the shear strength of soil and rock in natural and cut slopes, saturation, and the occurrence of triggering events, such as seismic shaking or intense precipitation. Shear strength of slopes decreases if soil and rock are saturated. Seismic shaking and saturation, such as intense precipitation, can also trigger landslides.

The CGS has not evaluated Midway 7.5' topographic quadrangle for Zones of Required Investigation for landslide zones. The CGS evaluated the adjacent Altamont 7.5' and Byron Hot Springs 7.5' topographic quadrangles for landslides zones. These two quadrangles contain known and mapped landslide zones in hilly areas of the Diablo Range that are contiguous into the Midway 7.5' topographic quadrangle (CDOC 2024).

According to the CGS Landslide Maps and Reports online mapping application, the CGS has not completed comprehensive landslide mapping for the Midway 7.5' topographic quadrangle (CDOC 2025b). The CGS completed comprehensive landslide mapping for the adjacent Altamont 7.5' topographic quadrangle. The CGS observed many active, historic, and dormant landslides in hilly areas of the Diablo Range that are contiguous into the Midway 7.5' topographic quadrangle (CDOC 2010).

Regional geologic mapping observed landslides in the Miocene Neroly Formation in the Diablo Range (CDOC 2023). Unlike the landslide mapping that CDOC (2010) completed, CDOC (2023) did not attempt to comprehensively map active and dormant landslides.

The CGS Map Sheet 58: Deep-Seated Landslide Susceptibility online mapping application classifies the landslide susceptibility of areas, from 0 to 10 for low to high. The landslide susceptibility ratings are based on rock strength and slope steepness. Slopes in the western project site, which are underlain by clayey soils and the Miocene Neroly Formation, are rated class 5 to 9, moderate to high. Project areas that are underlain by Undivided Holocene Alluvium have flatter slopes and mostly lower landslide susceptibilities, such as class 0 (CDOC 2011).

Saturation influences slope stability. Regional mapping of rainfall induced landslides indicates the project, especially the Miocene Neroly Formation, is an area where few landslides occur (ABAG 2020).

Soil Erosion

Grading natural and artificial and slopes, and constructing and operating new structures, may alter existing natural flow pathways and increase the potential for water and wind to erode soils, alluvium, and rock. The impact of a project on erosion rates depends on the erodibility of subsurface materials, construction and operation methods, and schedule. The impact of a project on erosion depends on the erodibility of subsurface materials, grading, construction, and operation methods, and schedule.

Two ephemeral streams, including Patterson Dry Creek, flow through the northeastern and southeastern areas of the project site. Undivided Holocene Alluvium immediately underlies the stream channels (CDOC 2023; Dudek 2025bbb).

See **Section 5.16, Water Resources**, for more information.

Subsidence

Subsidence is the gradual settling of the ground surface in response to the movement of material belowground. Natural processes that may cause subsidence include soil compaction, sinkhole formation, and earthquakes. Artificial activities that may cause subsidence include removal or addition of material belowground, such as groundwater pumping, hydraulic fracturing, oil extraction, and mining.

A portion of the project is in the western margin of the Tracy Subbasin (DWR Basin No. 5-022.15), a subbasin in the San Joaquin Valley Groundwater Basin. Under the Sustainable Groundwater Management Act (SGMA), the California Department of Water Resources (DWR) designated the Tracy Subbasin as a medium-priority basin (DWR 2020).

According to the USGS (2018) Areas of Land Subsidence in California online mapping application, the project site is not a location where artificial subsidence has occurred or is occurring. The Tracy Subbasin GSAs' 2021 Groundwater Sustainability Plan (GSP) reported that the project site is an area where -0.05 ft to 0 ft of vertical displacement occurred during June 2015 to October 2020 (Tracy Subbasin GSAs 2021).

The applicant proposed purchasing and trucking water from the Alameda County Flood Control and Water Conservation District (Zone 7 Water Agency), a public water system. The Zone 7 Water Agency's water supply primary water supplies are surface water imported from the State Water Project and the Central Valley Project (80 percent), captured local watershed runoff (10 percent), and previously imported water stored in the Livermore Valley Groundwater Basin (DWR Basin No. 2-10) (10 percent) (Dudek 2025e).

Under the SGMA, the DWR designated the Livermore Valley Groundwater Basin as a medium-priority basin (DWR 2020). The Livermore Valley Groundwater Basin's yield is calculated at 18,700 AFY (Zone 7 Water Agency 2021). The Zone 7 Water Agency does not use the Livermore Valley Groundwater Basin for primary water supply, but instead

as a water storage facility. The Zone 7 Water Agency recharges the Livermore Valley Groundwater Basin with local surface water from the Arroyo Valle watershed and imported surface water from the State Water Project (Dudek 2025e).

Between 2025 and 2045, the Zone 7 Water Agency is forecast to have a surplus of 26,400 acre feet per year (AFY) to 37,900 AFY of water. The proposed water demand for project construction and decommissioning would be 6 acre-feet (AF) of water per acre, or 49.1 AF total. The proposed water demand for project operation would be 6 AFY (Dudek 2025e).

See **Section 5.16, Water Resources**, for more information.

Geologic and Mineral Resources of Recreational, Commercial, and Scientific Value

In the context of the California Environmental Quality Act (CEQA), mineral resources are land areas or deposits deemed significant by the CDOC (CCR 2018b). A mineral resource is a concentration of natural inorganic materials or fossilized organic material occurring in such form, quantity, or quality that there are reasonable prospects for economic extraction. Inorganic mineral resources include non-fuel materials such as aggregate (sand and gravel), metals (gold, silver, and iron), and industrial minerals (clays, limestone, and gypsum). Petroleum resources include fuel materials, such as coal, crude oil, and natural gas.

Extraction of mineral resources significantly contributes to Alameda County's economy, Several issues influence the extraction of mineral resources in Alameda County, including the location of the mineral resources, commercial values, potential impacts to the environment, and land use conflicts (Alameda County 1994). Actively mined mineral resources in Alameda County are sand and gravel, salt, stone, petroleum, and clays (CDOC 2025ab).

There is a history of mining metallic and non-metallic minerals and petroleum resources in Alameda County. During the 19th and 20th centuries, the following minerals and materials were mined in Alameda County: asbestos, bromine, chromite, coal, copper, gold, lead, lime, magnesite, magnesium compounds, manganese, potash (potassium salts), ochers, oyster shells, pyrite, silica, silver, soapstone, and travertine. These minerals are not presently mined in the county (Alameda County 1994).

The CDOC State Mining and Geology Board (SMGB) is responsible for administration of a mineral lands inventory process termed classification designation. Areas are classified based on geologic factors without regard to existing land use and land ownership. Using SMGB guidelines, the CGS has mapped MRZs throughout much of California. The CGS last updated MRZ mapping for Alameda County in 1996. The project site is in an area that was not evaluated (CDOC 1996).

The CDOC Division of Mine Reclamation (DMR) list of mines, referred to as the AB 3098 List and regulated under the Surface Mining and Reclamation Act (SMARA), and Mines

Online mapping application list approximately 12 active or potentially active mines in Alameda County. These mines extract sand and gravel, stone, and clay (CDOC 2016, 2025b). The closest active mines to the project site are about eight miles east, in Tracy, and about 14 miles west, in the Livermore Valley. These mines are open pits that produce sand and gravel (CDOC 2016). According to the USGS Mineral Resources online mapping application, the closest inactive mines to the project are two open pit mines that are about two miles east of the project (USGS 2011).

According to the CDOC Geologic Energy Management Division (CalGEM) Well Finder online mapping application, there are no energy production related wells at the project site. There are seven plugged and abandoned wells between 1.5 miles and three miles away from the project. (CDOC 2025a)

At the project site, the known or interpreted geologic units at the surface and shallow subsurface are the Miocene Neroly Formation and Undivided Holocene Alluvium. Excavation may encounter other underlying Quaternary sedimentary deposits or older rock formations.

Paleontological Resources

Paleontological resources are fossils and fossiliferous deposits consisting of vertebrate fossils, invertebrate fossils, plant, trace fossils and other data. Paleontological resources are typically found in rock formations and Quaternary sedimentary deposits. Paleontological resources are usually, but not always, older than recorded human history (SVP 2010).

Fossils are important scientific and educational resources because of their use in documenting the present and evolutionary history of extant and extinct organisms. Fossils help us understand geologic conditions and events that occurred in the past. For example, fossils provide information on the paleoenvironment that existed at the time and location in which the organism lived. Fossils help determine the relative ages of the rock formations in which they occur (SVP 2010).

Fossils are considered a nonrenewable scientific resource and are afforded protection under several federal, state, and local LORS because most organisms they represent are extinct (SVP 2010).

Paleontological Potential

Society of Vertebrate Paleontology

The Society of Vertebrate Paleontology (SVP) published professional standards for assessing the paleontological potential of geologic units and mitigating potential impacts to paleontological resources during ground disturbing activities. Each geologic unit's paleontological potential determines the mitigation needed to reduce potential impacts to paleontological resources during ground disturbing activities (SVP 2010).

SVP paleontological potential considers the potential for a geologic unit to yield abundant or significant vertebrate fossils or to yield a few significant vertebrate, invertebrate, plant, or trace fossils. A geologic unit is assumed to contain fossils of similar quantity and quality to those previously recorded in the unit elsewhere in the region. Therefore, potential fossil yield is inferred from the quality and quantity of fossil specimens at recorded fossil sites in that geologic unit in the region and from recorded sites in similar geologic units in similar geological settings (SVP 2010).

Paleontological potential also considers the importance of recovered fossils for stratigraphic interpretations, age determinations of geologic units, paleoenvironmental and paleoclimatic reconstructions, or for understanding evolutionary histories. SVP standards classify the paleontological potential of geologic units as High, Low, Undetermined, and None (SVP 2010). These categories are described in **Table 5.6-2**.

TABLE 5.6-2 SOCIETY OF VERTEBRATE PALEONTOLOGY DEFINITIONS OF PALEONTOLOGICAL POTENTIAL

Rating	Definition
High	Geologic units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional scientifically important paleontological resources. Geologic units that contain potentially datable organic remains older than late Holocene, including deposits associated with animal nests or middens, and geologic units which may contain new vertebrate deposits, traces, or trackways, are also classified as having High Potential.
Low	Geologic units with low potential are known to produce significant fossils only on rare occasions, and only preserve fossils in rare circumstances such that the presence of fossils is the exception not the rule, for example, basalt flows or recent colluvium.
Undetermined	Geologic units for which little information is available concerning their geologic context (depositional environment, age) and potential to contain paleontological resources are considered to have undetermined potential. The paucity of data is usually from a lack of study in that unit or because of high variability in the unit's lithology. Typically, further study is necessary to determine whether these units have high, low, or no potential to contain scientifically significant paleontological resources. In cases where no subsurface data are available, paleontological potential can sometimes be determined by strategically located excavations into subsurface stratigraphy.
None	Geologic units with no potential are those that formed at high temperatures and pressures, deep within the Earth, such as plutonic igneous rocks, and high-grade metamorphic rocks. Since the environment in which these rocks formed is not conducive to the preservation of biological remains, they do not contain fossils. Manmade fill also is considered to possess no paleontological potential.

Source: SVP 2010

Observed Paleontological Resources

In 2024, the applicant completed a site-specific paleontological investigation to analyze the paleontological potential of geologic formations at, and near, the project site. The paleontological investigation reviewed geologic mapping, geotechnical reports, scientific

literature, and online paleontological databases. The investigation completed a pedestrian survey of the project site (Dudek 2025xx).

Vertebrate fossil localities, including Pleistocene megafauna that lived during North American ice ages, such as bear, bison, camel, mammoth, mastodon, and sloth, have been observed in Quaternary sedimentary deposits that are equivalent to the Latest Pleistocene Alluvial Fan Deposits and Late to Early Pleistocene Old Pediment Deposits. Invertebrate fossil localities have also been observed in these sedimentary deposits (Jefferson 1991; Bell et al. 2004; Dudek 2025xx).

The Early Pliocene (age inferred) to late Miocene Carbona Formation is partly equivalent to the Oro Lima and Tehama formations and likely has similar paleontological resources. The University of California Museum of Paleontology (UCMP) and Paleobiology Database (PBDB) online databases report that the Oro Lima and Tehama formations contain invertebrate and vertebrate fossil localities, including fish, mammals, and reptiles (Dudek 2025xx). CDOC (2023) also reported vertebrate fossils in the Carbona Formation.

The National History Museum of Los Angeles (NHMLA) online database reports two invertebrate fossil localities in the Miocene Neroly Formation in the northern Diablo Range. Fossilized shallow marine invertebrates, such as echinoderms and shell beds with scallops (*Pecten crassicardo)*, were observed at these sites. The NHMLA online database reports Whitney's sand dollar (*Astrodapsis whitneyi)* in the Neroly Formation in the Cuyama Valley in Santa Barbara County (Dudek 2024eeee). The UCMP online database reports plant fossil localities in the Miocene Neroly Formation (Dudek 2025xx).

The predominant fossil localities observed in the Late Miocene Cierbo Formation are marine invertebrates, especially scallops (genus *Ostrea*) (CDOC 2023; Dudek 2025xx). The UCMP database also reports localities of fossilized plants and unnamed vertebrate material in the Cierbo Formation (Dudek 2025xx).

The PBDB and UCMP online databases report localities of fossilized marine reptiles, fish, marine invertebrates, and fossilized wood in the Late Cretaceous Panoche Formation (Dudek 2025xx).

The 2024 paleontological investigation completed a pedestrian survey of the project site to field-check geologic units and search for rock outcrops and paleontological resources. The survey did not observe paleontological resources exposed at the surface at the project site (Dudek 2025xx).

Regulatory

The project would be required to comply with all applicable federal, state, and local LORS and obtain building permits from the California Energy Commission (CEC). The issuance of the building permits and oversight provided by the CEC via the CEC's

delegate chief building official (DCBO) would confirm that the project complies with the applicable regulatory framework.

Federal Geologic Hazards, and Geologic, Mineral, and Paleontological Resources

The following federal LORS related to geologic hazards and geologic, mineral, and paleontological resources apply, or may apply, to the proposed project.

Federal Clean Water Act and California's Porter-Cologne Water Quality Control Act

The State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCB) are responsible for the regulation and enforcement of the water quality protection requirements of the federal Clean Water Act (CWA) and the state's Porter-Cologne Water Quality Control Act (Porter-Cologne) (SWRCB 2025).

As required under Section 402 of the CWA and implemented in the Code of Federal Regulations (CFR), Title 40, Chapter I, Subchapter D, Part 127, the National Pollutant Discharge Elimination System (NPDES) is the permitting program that allows point source dischargers to comply with the CWA and Porter-Cologne laws. This regulatory framework protects the beneficial uses of the state's surface and groundwater resources for public benefit and environmental protection. Compliance with applicable NPDES permits from the SWRCB or local RWQCB ensures the proposed project protects water quality (CFR 2019; SWRCB 2025).

As required under Section 404(a) of the CWA and implemented in the CFR, Title 40, Chapter I, Subchapter D, Part 121, the U.S. Army Corp of Engineers is the authority to issue permits for the discharge of fill and dredging material into navigable waters, defined as waters of the United States (CWA Section 502). Under Section 401(a) of the CWA, any applicant of a permit under the CWA must provide a State certification to the Federal permitting agency. In California, the local RWQCB is the Section 401 certifying agency (CFR 2023, SWRCB 2025).

As required under Section 303(d) of the CWA and implemented in the CFR, Title 40, Chapter I, Subchapter D, Part 127, states are required to identify impaired surface water bodies and develop total maximum daily loads (TMDLs) for contaminants of concern. A TMDL is the quantity of pollutant that can be assimilated by a water body without violating water quality standards. Listing of a water body as impaired does not necessarily suggest that the water body cannot support the beneficial uses. The intent is to identify the water body as requiring future development of a TMDL to maintain water quality and reduce the potential for future water quality degradation (CFR 2017; SWRCB 2025).

See **Section 5.16, Water Resources**, for more information.

State Geologic Hazards

The following state LORS related to geologic hazards apply, or may apply, to the proposed project.

Alquist Priolo Earthquake Fault Zoning Act

The 1972 Alquist-Priolo Earthquake Fault Zone Act, found in California Public Resources Code (CPRC), Division 2, Chapter 7.5, requires the CGS to delineate Earthquake Fault Zones to prevent the construction of buildings for human occupancy on Holocene-active faults. Earthquake Fault Zones are regulatory boundary zones surrounding well defined Holocene-active faults or fault segments (CDOC 2018; CPRC 2024b).

The Alquist-Priolo Earthquake Fault Zone Act recognizes three types of faults. Holocene-active faults are those that have ruptured in the Holocene Epoch, or past 11,700 years. Pre-Holocene faults have not ruptured in the past 11,700 years and not regulated under the Alquist-Priolo Earthquake Fault Zone Act. Evidence that Pre-Holocene faults may rupture in the future should be considered. Age-undetermined faults are those in which the most recent rupture is unknown. The Alquist-Priolo Earthquake Fault Zone Act considers age-undetermined faults as Holocene-active faults, until proven otherwise. (CDOC 2018; CPRC 2024b).

California Building Code

The 2022 California Building Code (CBC), California Code of Regulations (CCR), Title 24, Part 2, prescribes standards for constructing safer buildings and contains provisions for earthquake safety based on factors including occupancy type, soil and rock profile, ground strength, and distance to seismic sources (CBC 2022).

The 2022 CBC, Section 1803 requires that a geotechnical and geohazard report be prepared for most development projects to evaluate seismic and geologic conditions, such as surface fault ruptures, ground shaking, liquefaction, differential settlement, lateral spreading, expansive soils, and slope stability. These reports help determine the final engineering and building design for the project. The CBC is updated every three years, with the 2022 CBC effective on January 1, 2023 and updated with a July 2024 Supplement (CBC 2022).

Seismic Hazards Mapping Act

The 1990 Seismic Hazards Mapping Act, found in the PRC, Division 2, Chapter 7.8, requires the CGS to publish maps identifying Zones of Required Investigation that are subject to hazards associated with strong ground shaking, such as landslides, liquefaction, seiches, and tsunamis. The Seismic Hazards Mapping Act requires a geotechnical report be prepared that defines and delineates any seismic hazard prior to approval of a project in a seismic hazard zone (CDOC 2008; CPRC 2017).

State Geologic, Mineral, and Paleontological Resources

Paleontological Resources

The following state LORS related to paleontological resources apply, or may apply, to the proposed project.

The CPRC, Section 5097.5, found in Division 5, Chapter 1.7, prohibits the unpermitted removal or damage to any paleontological site or feature from land that is under the jurisdiction of the state, or any city, county, district, authority, or public corporation, or any agency thereof (CPRC 2011).

The CEQA lead agency having jurisdiction over a project is responsible for ensuring that paleontological resources are protected in compliance with CEQA and other applicable statutes. The CEC is the lead agency with the responsibility to ensure that fossils are protected during project construction and operation (CPRC 2025).

CPRC Section 21081.6, found in Division 13, Chapter 2.6, requires that the CEQA lead agency demonstrate project compliance with mitigation measures developed during the environmental impact review process (CPRC 1994).

Surface Mining and Reclamation Act

The 1975 Surface Mining and Reclamation Act (SMARA), found in the CPRC, Division 2, Chapter 9, provides a comprehensive surface mining and reclamation policy for the regulation of surface mining operations to assure that adverse environmental impacts are minimized and mined lands are reclaimed to a usable condition. SMARA also encourages the production, conservation, and protection of the state's mineral resources. County governments enact ordinances to implement SMARA at the local level and hold reclamation financial assurances (CPRC 2022).

CPRC Section 2761, found in Division 2, Chapter 9, Article 4, requires that the State Geologist classify land into areas if statewide or regional significance (CPRC 2022). To implement Article 4, the State Geologist classifies mineral lands into Mineral Resource Zones (MRZs). MRZs are defined as the following (CDOC 2000) NM,:

- MRZ-1: Areas where adequate geologic information indicates that no significant mineral deposits are present, or where it is judged that little likelihood for their presence exists (CDOC 2000).
- MRZ-2a: Areas underlain by mineral deposits where geologic data show that significant measured or indicated resources are present. Areas classified MRZ-2a contain discovered mineral deposits that are either measured or indicated reserves as determined by such evidence as drilling records, sample analysis, surface exposure, and mine information. Land included in the MRZ- 2a category is of prime importance because it contains known economic mineral deposits (CDOC 2000).
- MRZ-2b: Areas underlain by mineral deposits where geologic information indicates that significant inferred resources are present. Areas classified MRZ-2b contain

discovered deposits that are either inferred reserves or deposits that are presently sub-economic as determined by limited sample analysis, exposure, and past mining history. Further exploration work and/or changes in technology or economics could result in upgrading areas classified MRZ-2b to MRZ-2a (CDOC 2000).

- MRZ-3a: Areas containing known mineral deposits that may qualify as mineral resources. Further exploration work within these areas could result in the reclassification of specific localities into the MRZ-2a or MRZ-2b categories. MRZ-3a areas are considered to have a moderate potential for the discovery of economic mineral deposits (CDOC 2000).
- MRZ-3b: Areas containing inferred mineral deposits that may qualify as mineral resources. Land classified MRZ- 3b represents areas in geologic settings which appear to be favorable environments for the occurrence of specific mineral deposits. Further exploration work could result in the reclassification of all or part of these areas into the MRZ-3a category or specific localities into the MRZ-2a or MRZ-2b categories. MRZ-3b is applied to land where geologic evidence leads to the conclusion that it is plausible that economic mineral deposits are present (CDOC 2000).
- MRZ-4: Areas where geologic information does not rule out either the presence or absence of mineral resources. The distinction between the MRZ-1 and MRZ-4 categories is important for land-use considerations. It must be emphasized that MRZ-4 classification does not imply that there is little likelihood for the presence of mineral resources, but rather there is a lack of knowledge regarding mineral occurrence. Further exploration work could well result in the reclassification of land in MRZ-4 areas to MRZ-3 or MRZ-2 categories (CDOC 2000).

Local Geologic Hazards

The following local LORS related to geologic hazards apply, or may apply, to the proposed project.

Alameda County General Plan

Numerous Holocene-active and potentially active faults in, and near, Alameda County can produce high-magnitude earthquakes and moderate-to-severe ground shaking throughout the county. Geologic hazards associated with seismicity include surface rupture, ground shaking, ground failure, slope instability, subsidence, and liquefaction (Alameda County 2021). The Alameda County Board of Supervisors' primary statements for implementing goals, policies, and actions to protect eastern Alameda County from geologic hazards are contained in the 2022 Safety Element of the Alameda County General Plan (Safety Element) and the 2000 East County Area Plan: A Portion of the Alameda County General Plan (East County Area Plan) (Alameda County 2000, 2022).

The Safety Element contains a relevant goal, policies, and actions in Chapter 1: Natural Hazards, Section 2.0: Seismic and Geologic Hazards, Subsection 2.6: Goals, Policies, and Programs (Alameda County 2022). The East County Area Plan contains relevant

goals, policies, actions, and implementation programs in Chapter II: Goals, Policies, and Programs, Environmental Health and Safety section, Environmental Hazards subsection, Soil and Slope Stability and Seismic and Geologic Hazards subsections (Alameda County 2000). The Safety Element and East County Area Plan state goals to minimize risks to human life and property due to seismic and geologic hazards. Specifically, the goals:

- Restrict construction of new developments and major public facilities near active faults,
- Restrict grading and development of slopes,
- Require risk evaluations and specific geologic hazard assessments for projects in geologically hazardous areas,
- Require major transportation and pipeline facilities to avoid or minimize crossing active faults, and
- Require seismic design criteria for new construction of new buildings, with additional requirements for critical facilities.

The East County Area Plan also encourages limits on groundwater pumping in some areas to reduce subsidence (Alameda County 2000, 2022).

Alameda County Municipal Code

The 2024 Alameda County Municipal Code largely adopts the 2022 California Building Code, with specific edits (Alameda County 2024; CBC 2022). As described in Title 15 – Buildings and Construction, Article II, the Building Code of the County of Alameda adopts the CBC (2022), except as noted in Chapter 15.08.043 and as amended in Chapters 15.08.160 to 15.08.300. The Building Code of the County of Alameda includes requirements to reduce geologic hazard potential that are applicable to all new construction, including the proposed project.

Chapter 15.08.240 adopts the CBC (2022)'s requirements for soil and geotechnical investigations and adds reporting requirements. The building official is authorized to review prior preliminary soil and geotechnical reports for a building site, whether the reports were prepared for the current project or not. Upon completion of rough grading work at a building site, and prior to approval for foundation construction, the following final reports must be submitted to the building official: as-built grading plan, complete record of in-progress geotechnical tests, letter of finding regarding site adequacy, and letter of declaration for all geotechnical and rough grading work. A responsible licensed geologist or engineer must prepare the final reports and letters. Chapter 15.08.250 restricts use of tire and wood retaining walls (Alameda County 2024).

As described in Chapter 15.18, the Onsite Wastewater Treatment Systems (OWTS) Ordinance establishes requirements for the approval, installation, and operation of OWTS and onsite wastewater containment units to prevent environmental degradation and protect public health, safety, and welfare (Alameda County 2024).

As described in Chapter 15.36, the Grading Ordinance of Alameda County adopts the 2022 California Building Code (CBC 2022) and establishes requirements and procedures for grading, erosion, and sediment control (Alameda County 2024).

Local Geologic, Mineral, and Paleontological Resources

The following local LORS related to geologic, mineral, and paleontological resources apply, or may apply, to the proposed project.

Alameda County General Plan

Currently, Alameda County's primary mineral resources are sand and gravel, salt, stone, petroleum, and clays. Mineral resource extraction significantly contributes to Alameda County's economy (Alameda County 1994). The Alameda County Board of Supervisors' primary statements for implementing goals, policies, and actions regarding geologic and mineral resources of commercial, scientific, and recreational value in eastern Alameda County are in the 1994 Alameda County General Plan: Conservation Element (Conservation Element) and 2000 East County Area Plan (Alameda County 1994, 2000).

The Conservation Element contains a relevant goal and objectives in Chapter III. Goals and Objectives for Conservation of Resources, Section C, Minerals, Extractive Resources. The stated goal is to promote mineral resource extraction to its full extent while maintaining sound management policies. The stated objectives are to identify mineral resources, permit extraction that is not detrimental to other valuable resources, use low quality mineral sources to reduce environmental impacts, increase mineral recycling, and further improve mineral extraction policies (Alameda County, 1994).

The East County Area Plan contains a relevant goal, policies, and implementation programs in Chapter II, Goals, Policies, and Programs, Land Use section, Special Land Uses subsection, Quarries and Regionally Significant Aggregate Resource Areas subsection. The stated goal is to recognize the regional value of the county's construction aggregate resources and ensure compatibility between mining and nearby land uses. The stated policies restrict the development of new mines and petroleum extraction, balance present and future mineral resource demands, mitigate environmental and agricultural impacts, ensure reclamation, and encourage water conservation (Alameda County, 2000).

CEC staff did not identify any statements, including goals, policies, and actions, in the 1994 Conservation Element and 2000 East County Area Plan that address paleontological resources.

Professional Standards

The following professional standards apply to this project.

Paleontological Resources

Society of Vertebrate Paleontology (SVP), an international organization of professional paleontologists, has established guidelines and standard procedures that outline acceptable professional practices in the conduct of paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, and specimen preparation, identification, analysis, and curation (SVP 2010).

Cumulative

Cumulative projects are identified as past, current, or reasonably foreseeable future projects that, when viewed in connection with the proposed project, have the potential to cause its effect(s) on geology, paleontology, and minerals to be potentially significant. A master list of cumulative projects located within Alameda County is provided in **Appendix A, Table A-1**.

The cumulative project setting for geology, paleontology, and minerals includes all projects which may expose people or property to geologic hazards or destroy geologic, mineral, and paleontological resources of commercial, scientific, or recreational value. A project may have these potential impacts if it includes construction, excavation of native materials, groundwater pumping, or fossil fuel production.

5.6.2 Environmental Impacts and Mitigation

CEQA Guidelines Section 15126.2, found in the California Code of Regulations (CCR), Title 14, Division 6, Chapter 4, Article 9, requires an agency's environmental analysis to identify and focus on the significant effects of the proposed project on the environment. An agency is not required to analyze the impact of existing environmental conditions on a project or its future users unless a proposed project might cause or risk exacerbating environmental hazards or conditions that already exist[10] (CCR 2018a).

For purposes of assessing geological hazards and consistent with CEQA Guidelines Section 15126.2, CEC staff identified existing geological hazards and then assessed whether the project would cause or exacerbate an existing geological hazard causing a significant environmental impact (CCR 2018a). Even though the project would not exacerbate existing geological hazards, and thus there is no significant impact under CEQA, CEC staff recommends COCs to ensure the project's design, grading, construction, and operation are conform with applicable LORS to protect human life, property, and grid reliability.

10 *California Bldg. Indus. Assn. v. Bay Area Air Quality Mgmt. Dist.*, 62 Cal. 4th 369, (2015)

The following CEQA Guidelines Environmental Checklist for Geology, Paleontology, and Minerals are found in the CCR, Title 14, Division 6, Chapter 3, Appendix G, VII. Geology and Soils and XII. Mineral Resources (CCR 2018b).

GEOLOGY, PALEONTOLOGY, AND MINERALS Would the project:	**Significant and Unavoidable Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☒	☐	☐
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii. Strong seismic ground shaking?	☐	☒	☐	☐
iii. Seismic-related ground failure, including liquefaction?	☐	☒	☐	☐
iv. Landslides?	☐	☒	☐	☐
b. Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐
c. Be located on geologic units or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☒	☐	☐
d. Be on expansive soil, as defined in Section 1803.5.3 of the California Building Code (2022), creating substantial direct or indirect risks to life or property?*	☐	☒	☐	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?	☐	☒	☐	☐
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
g. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	☐	☐	☒	☐

GEOLOGY, PALEONTOLOGY, AND MINERALS Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
h. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☒	☐

*Geology and Soils question (d) reflects the current 2022 California Building Code (CBC 2022), effective January 1, 2023, which is based on the International Building Code (IBC 2021).

5.6.2.1 Methodology and Thresholds of Significance

Geologic Hazards

CEC staff reviewed regional geologic mapping and evaluations of geologic hazards, including hazard mapping, performed by the Association of Bay Area Governments (ABAG), CGS, and USGS. CEC staff reviewed a preliminary site-specific geotechnical investigation.

The 2022 CBC provides geotechnical and geological investigation and design guidelines that engineers are required to follow for new construction projects. To assess the significant of potential geologic hazards, the guidelines require a project to evaluate potential geologic hazards that may impact the project. The guidelines also require a project to evaluate if it may cause or exacerbate existing geological hazards. Geologic hazards include faulting and seismicity, liquefaction, dynamic compaction, hydrocompaction, subsidence, expansive soils, landslides, tsunamis, seiches, and others as may be dictated by site-specific conditions (CBC 2022).

CEC staff reviewed the applicant's preliminary site-specific geotechnical investigation (Dudek 2025bbb) and the interpretations of geologic hazards (Dudek 2025yy). The geotechnical investigation advanced, sampled, and tested eleven borings using a track-mounted rotary drill rig using continuous flight hollow stem augurs. The investigation conducted geophysical surveys to evaluate shallow soil and rock at the project site. At the BESS site, the investigation advanced and logged six borings to depths of 15.5 to 31.5 ft bgs. At the O&M building and substation sites, the investigation advanced and logged four borings to depths of 27.5 to 41.5 ft bgs. On the proposed gen-tie route, the investigation advanced one boring to a depth of 51.5 ft. The field investigations were started and completed in June 2024 (Dudek 2025bbb).

The investigation collected samples using the Modified California Ring Sampler or Standard Penetration Test. Standard penetration testing was conducted on samples from all borings. Atterberg limits testing was performed on one sample from each boring to evaluate soil moisture and assess plasticity. Hand penetration testing was conducted on samples from three borings to test unconfined compressive strength in the field. A laboratory unconfined compression test was performed on one sample to

assess vertical soil strength. Direct shear tests were performed on three samples from two borings to assess soil shear strength. An R-Value test was performed on one sample to evaluate moisture content. A corrosivity test was performed on one sample to evaluate the potential for soil to corrode steel and concrete. Thermal resistivity tests were performed on two samples from one boring to measure how soils resist heat flow (Dudek 2025bbb).

The geotechnical investigation included geophysical analyses, specifically seismic and resistivity surveys of the project site. Four Seismic Refraction (SR) surveys were conducted along ridge lines to evaluate areas where the largest amount of grading is proposed. The SR surveys evaluated compressional-wave (p-wave) velocity values to evaluate the consolidation, cementation, and hardness of subsurface soil and rock. Along each SR survey line, a Multichannel Analysis of Surface Waves (MASW) survey was conducted. The four MASW surveys produced and evaluated shear-wave (s-wave) velocity values to evaluate the relative stiffness of subsurface soil and rock. Two Electrical Resistivity Sounding (ERS) surveys were conducted to evaluate the project's western and eastern areas, respectively. The ERS surveys measured the bulk apparent electrical resistivity of subsurface soil and rock to evaluate the presence and extent of groundwater and clay, sand, and gravel deposits. The ERS surveys also evaluated soil corrosion potential and parameters for grounding grid design (Dudek 2025bbb).

To evaluate potential subsidence hazards, CEC staff evaluated regional subsidence mapping (USGS 2018), local groundwater management plans submitted to the DWR under the SGMA (Tracy Subbasin GSA's 2021; Zone 7 Water Agency 2021), and the project's water demand and supply assessment for the Zone 7 Water Agency (Dudek 2025e).

Geologic and Mineral Resources of Recreational, Commercial, and Scientific Value

CEC staff reviewed regional geologic and mineral resource mapping performed by CalGEM, CGS, DMR, and USGS to assess the project's potential impacts on geologic and mineral resources of recreational, commercial, and scientific value.

Paleontological Resources

CEC staff reviewed regional geologic mapping, paleontological databases, and the applicant's site-specific paleontological investigation to evaluate the project's potential impacts on paleontological resources.

The applicant's paleontological consultant, Dudek, developed a baseline paleontological resources inventory of the project area. Dudek reviewed geologic mapping, literature, and the applicant's preliminary site-specific geotechnical investigation. Dudek searched in the online paleontological collection databases of the NHMLA, PBDB, and UCMP for fossil localities near the project. Dudek completed a pedestrian survey of the project site to field-check geologic units and search for rock outcrops and paleontological resources. Dudek evaluated this information and assigned a paleontological potential to

each geologic unit that is mapped at the surface within one mile of the project site (Dudek 2025xx).

CEC staff used SVP (2010) guidelines to independently evaluate the paleontological potential of geologic formations that occur at the surface within one mile of the proposed project site or may be encountered in the subsurface at the project site. Ratings consider how project construction and operation may impact potential nonrenewable paleontological resources. Construction-related impacts that could affect paleontological resources are ground disturbing activities, such as mass excavation operations, drilling and borehole excavations, trenching, tunneling, and grading.

5.6.2.2 Direct and Indirect Impacts

a. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Project Components Within the CEC's Opt-In Certification

Construction and Operation

Less Than Significant Impact. When a fault ruptures and produces an earthquake, the ground surface may rupture. Alameda County is in the San Francisco Bay Region, an area of high seismic activity (Alameda County 2022).

The CGS has not evaluated the Midway 7.5' topographic quadrangle, which contains the project, for Alquist-Priolo fault zones. An Alquist-Priolo fault zone for the Greenville segment of the Clayton-Marsh Creek-Greenville fault zone is mapped transecting adjacent 7.5' topographic quadrangles to the south (Cedar Mountain), west (Altamont), and northwest (Byron Hot Springs). The Altamont 7.5' topographic quadrangle also contains an Alquist-Priolo fault zone for the Las Positas fault (CDOC 2024).

Regional geologic mapping does not show evidence of any known or mapped faults intersecting the project site (CDOC 2023). There are at least nineteen known and mapped active and potentially active faults within 25 miles of the project site (USGS 2017; CDOC 2022; Dudek 2025yy). The Midway fault is 0.4 miles east of the project and is potentially active. The Midway fault is the closest Holocene-active or potentially active fault. The closest Holocene-active faults with the most significant rupture and seismic potential are the Greenville, Calaveras, and Hayward fault zones, which are six miles, 18 miles, and 23 miles west of the project site, respectively (USGS 2016; Alameda County 2022; CDOC 2024).

Due to the distance to known and mapped Holocene-active and potentially active faults, the applicant did not propose mitigation measures related to surface fault rupture (Dudek 2025yy). CEC staff agrees the potential for rupture of a known and mapped surface fault to impact the project site is less than significant.

To inform the final design, grading, and construction of project components within the CEC's Opt-In Certification, COC **GEO-1** requires the project owner to complete and submit a geotechnical and geohazard report to the CEC for review and approval. The report should include a site-specific evaluation of fault rupture potential at the project site. If a fault rupture hazard is identified on the project site, the report should include facility design and grading refinements to mitigate hazards from surface fault rupture. COC **GEO-1** requires the project owner to incorporate the report's recommended refinements. Compliance with COC **GEO-1** would ensure potential impacts on human life, property, and grid reliability from surface fault rupture are less than significant.

Based on the evaluation above, during operation of project components within the CEC's Opt-In Certification, the potential impacts on human life, property, and grid reliability from surface fault rupture would be less than significant.

Project Components Outside the CEC's Opt-In Certification

Construction and Operation

Less Than Significant Impact. PG&E would construct project components outside of the CEC's Opt-In Certification within, and outside, the existing Tesla Substation. The Tesla Substation does not intersect any known and mapped Holocene-active and potentially active faults (USGS 2017; CDOC 2022).

To inform the final design, grading, and construction of project components outside the Tesla Substation, such as the gen-tie line and fiber optic routes, CEC staff recommends PG&E comply with applicable LORS, including state and county building codes. Consistency with these requirements would ensure potential impacts on human life, property, and grid reliability from surface fault rupture on construction of project components outside the CEC's Opt-In Certification would be less than significant.

Based on the evaluation above, during operation of project components outside the CEC's Opt-In Certification, the potential impacts on human life, property, and grid reliability from surface fault rupture would be less than significant.

ii. Strong seismic ground shaking?

Project Components Within the CEC's Opt-In Certification

Construction and Operation

Less Than Significant Impact with Mitigation Incorporated. Strong seismic ground shaking can cause structural damage and trigger other geologic hazards, such as

liquefaction and landslides. Holocene-active and potentially-active faults within 25 miles of the project, as well as more distal faults, may produce high magnitude earthquakes that impact the project (USGS 2017; Alameda County 2022; CDOC 2022). Between 2014 and 2043, the probabilities of an earthquake of M ≥ 6.7 on the Hayward segment of the Rodgers Creek-Hayward, Clayton-Marsh Creek-Greenville, and Calaveras fault zones are 33 percent, 16 percent, and seven percent, respectively (USGS 2015, 2016).

The project site may experience severe (MMI 8) or violent (MMI 9) ground shaking (ABAG 2022a; CDOC 2025c). PGAs calculated for the project site include 0.747 g and 0.794 g. The project site is classified as Seismic Design Class C (Dudek 2025bbb).

The 2022 CBC, Section 1803, requires new construction to evaluate the potential, and propose mitigation, for strong seismic ground shaking. The applicant proposed to construct the project in accordance with the preliminary site-specific geotechnical report, Alameda County Municipal Code, CBC, current seismic design specifications, and other applicable regulations (Dudek 2025yy).

To inform the final design, grading, and construction of project components within the CEC's Opt-In Certification, COC **GEO-1** requires the project owner to complete and submit a geotechnical and geohazard report to the CEC for review and approval. The report should include final grading and facility design refinements to mitigate hazards from strong seismic ground shaking to less than significant. COC **GEO-1** requires the project owner to incorporate the report's recommended refinements.

Compliance with COC **GEO-1**, and Facility Design COCs **CIVIL-1, GEN-1**, and **STRUC-1** (see **Section 4.1, Facility Design**) would ensure the design, grading, and construction of project components within the CEC's Opt-In Certification mitigate potential impacts from strong seismic ground shaking on human life, property, and grid reliability to less than significant.

Based on the evaluation above, the potential impacts from strong seismic ground shaking on operation of project components within the CEC's Opt-In Certification, including on human life, property, and grid reliability, would be less than significant.

Project Components Outside the CEC's Opt-In Certification

Construction and Operation

Less Than Significant Impact with Mitigation Incorporated. CEC staff assumes the Tesla Substation was designed, graded, and constructed in compliance with applicable LORS, including state and county building codes, and thus mitigated any potential impacts from strong seismic ground shaking to less than significant.

CEC staff recommends PG&E construct project components within, and outside, the Tesla Substation consistent with applicable LORS, including state and county building codes, to mitigate potential impacts from strong seismic ground shaking to less than significant. Mitigation would ensure the potential impacts from strong seismic ground

shaking on the construction of project components outside the CEC's Opt-In Certification, including on human life, property, and grid reliability, would be less than significant.

Based on the evaluation above, the potential impacts from strong seismic ground shaking on operation of project components outside the CEC's Opt-In Certification, including on human life, property, and grid reliability, would be less than significant.

iii. Seismic-related ground failure, including liquefaction?

Project Components Within the CEC's Opt-In Certification

Construction and Operation

Less Than Significant with Mitigation Incorporated. Seismic-related ground failure, including liquefaction, is a geologic hazard that can occur when saturated sediments experience seismic shaking. The CGS has not evaluated the Midway 7.5' topographic quadrangle, which contains the project, for liquefaction zones. In the adjacent Altamont and Byron Hot Spring 7.5' topographic quadrangles, there are liquefaction zones in areas that are geologically and topographically similar to the project site (CDOC 2024).

Regional liquefaction susceptibility mapping indicates the Neroly Formation has very low susceptibility to liquefaction while Undivided Holocene Alluvium is highly susceptible to liquefaction (ABAG 2022b).

Liquefaction potential also depends on groundwater levels. When the preliminary site-specific geotechnical investigation was performed, the borings did not encounter groundwater. Results from the June 2024 field exploration indicated the depth to groundwater was deeper than 100 ft bgs. The lack of shallow groundwater reduces liquefaction potential. However, groundwater levels fluctuate. Perched groundwater may exist along contacts between soil, Quaternary sedimentary deposits, and sedimentary rock formations (Dudek 2025bbb). CEC staff conservatively assumes that, during the life of the project, shallow groundwater levels may saturate liquefiable materials at the project site.

The 2022 CBC, Section 1803, requires new construction to evaluate the potential, and propose mitigation, for seismic-related ground failure, including liquefaction. The applicant proposed to construct the project in accordance with the preliminary site-specific geotechnical report, Alameda County Municipal Code, CBC, current seismic design specifications, and other applicable regulations (Dudek 2025yy).

The applicant proposed to cut and fill to depths of up to 30 ft bgs of natural slopes at the project site (Dudek 2025y). The preliminary site-specific geotechnical investigation proposed potential design, grading, and construction methods to mitigate the liquefaction potential of subsurface materials. The investigation recommended additional geotechnical evaluations and design as the project is finalized (Dudek 2025bbb).

To inform the project's final design, grading, and construction, COC **GEO-1** requires the project owner to complete and submit a geotechnical and geohazard report to the CEC for review and approval. The report should include final grading and facility design refinements to mitigate potential impacts from seismic-related ground failure to less than significant. COC **GEO-1** requires the project owner to incorporate the report's recommended refinements.

Compliance with COC **GEO-1**, and Facility Design COCs **CIVIL-1, GEN-1**, and **STRUC-1**, would ensure the design, grading, and construction of project components within the CEC's Opt-In Certification would mitigate potential impacts from seismic-related ground failure on human life, property, and grid reliability to less than significant.

Based on the evaluation above, potential impacts related to seismic-related ground failure during operation of project components within the CEC's Opt-In Certification, including on human life, property, and grid reliability, would be less than significant.

Project Components Outside the CEC's Opt-In Certification

Construction and Operation

Less Than Significant with Mitigation Incorporated. CEC staff assumes the existing Tesla Substation was designed, graded, and constructed in compliance with applicable LORS, including state and county building codes, and thus mitigated any potential impacts from seismic-related ground failure to less than significant. Therefore, the potential impacts from seismic-related ground failure on construction and operation of project components within the Tesla Substation, including on human life, property, and grid reliability, would be less than significant.

Based on the evaluation above, construction of project components outside of the existing Tesla Substation would occur on potentially liquefiable materials, such as Undifferentiated Holocene Alluvium. To inform the final design, grading, and construction of project components outside the Tesla Substation, CEC staff recommends PG&E comply with applicable LORS, including state and county building codes. Consistency with these requirements would mitigate potential impacts related to seismic-related ground failure on construction and operation of project components that are outside the CEC's Opt-In Certification and outside the Tesla Substation, including on human life, property, and grid reliability, to less than significant.

iv. Landslides?

Project Components Within the CEC's Opt-In Certification

Construction and Operation

Less Than Significant Impact with Mitigation Incorporated. Slope instability, including landslides and slope creep, is a geologic hazard that occurs when slopes fail. A slope's susceptibility to failure depends on soil and rock strength, the presence or absence of

support, ground saturation, and triggering events, such as seismic shaking or intense precipitation.

The CGS has not evaluated the Midway 7.5' topographic quadrangle for landslide hazard zones. In the adjacent Altamont and Byron Hot Spring 7.5' topographic quadrangles, there are landslide hazard zones in hilly areas of the Diablo Range that are similar to the project site and contiguous into the Midway 7.5' topographic quadrangle (CDOC 2024).

Comprehensive landslide mapping of the Altamont 7.5' topographic quadrangle observed active and dormant landslides in the Miocene Neroly Formation in hilly areas of the Diablo Range that are similar to the project site and contiguous into the Midway 7.5' topographic quadrangle (CDOC 2010). Regional geologic mapping observed landslides in natural slopes near the project, including in the Miocene Neroly Formation (CDOC 2023). Regional deep-seated landslide susceptibility mapping indicates that slopes in the western project site, which the Neroly Formation underlies, are moderately to highly susceptible to landslides. Flatter areas at the project site, which Undivided Holocene Alluvium underlies, have very low susceptibility to landslides.

In contrast, regional mapping of rainfall induced landslides indicates the Neroly Formation is relatively less prone to landslides compared to other nearby geologic formations (ABAG 2020).

The preliminary site-specific geotechnical investigation identified slope creep as a potential hazard because clayey soils and rock formations, including the Neroly Formation, underlie portions of the project site (Dudek 2025bbb). CEC staff agrees that slope instability, such as slope creep in the Neroly Formation, is a potential geologic hazard that may impact the project.

The 2022 CBC, Section 1803, requires new construction to evaluate the potential, and propose mitigation, for slope instability. The applicant proposed to construct the project in accordance with recommendations in the preliminary site-specific geotechnical report and Cal/OSHA regulations for slope stability during construction excavations (Dudek 2025yy).

The applicant proposed to cut and fill to depths of up to 30 ft bgs of natural slopes at the project site (Dudek 2025y). The preliminary site-specific geotechnical investigation proposed possible design, grading, and construction methods to mitigate slope instability in natural and artificial slopes. The investigation also recommended additional geotechnical evaluations and design as the project is finalized (Dudek 2025bbb).

To inform the project's final design, grading, and construction, COC **GEO-1** requires the project owner to complete and submit a geotechnical and geohazard report to the CEC for review and approval. The report should include final grading and facility design refinements to mitigate potential impacts related to slope instability to less than

significant. COC **GEO-1** requires the project owner to incorporate the report's recommended refinements.

Compliance with COC **GEO-1**, and Facility Design COCs **CIVIL-1, GEN-1**, and **STRUC-1**, would ensure the design, grading, and construction of project components within the CEC's Opt-In Certification would mitigate potential impacts related to slope instability on human life, property, and grid reliability to less than significant.

Based on the evaluation above, potential impacts related to slope instability on operation of project components within the CEC's Opt-In Certification, including on human life, property, and grid reliability, would be less than significant.

Project Components Outside the CEC's Opt-In Certification

Construction and Operation

Less Than Significant Impact with Mitigation Incorporated. CEC staff assumes the existing Tesla Substation was designed, graded, and constructed in compliance with applicable LORS, including state and county building codes, and thus mitigated any potential impacts from slope instability to less than significant. Therefore, the potential impacts from slope instability on construction and operation of project components within the Tesla Substation, including on human life, property, and grid reliability, would be less than significant.

Based on the evaluation above, construction of project component's outside of the existing Tesla Substation would occur on relatively flat subsurface materials, such as Undifferentiated Holocene Alluvium, that are less likely to have unstable slopes. However, to inform the final design, grading, and construction of project components outside the Tesla Substation, CEC staff conservatively recommends PG&E comply with applicable LORS, including state and county building codes. Consistency with these requirements would ensure that potential impacts from slope instability on construction and operation of project components that are outside the CEC's Opt-In Certification and outside the Tesla Substation, including on human life, property, and grid reliability, are mitigated to less than significant.

b. Would the project result in substantial soil erosion or the loss of topsoil?

Project Components Within the CEC's Opt-In Certification

Construction and Operation

Less Than Significant with Mitigation Incorporated. Construction and operation of a new project may increase the potential for water and wind to erode soil. The impact of project construction on soil erosion and topsoil loss depends on hydrology, soil erodibility, construction methods, and schedule. The impact of project operation depends on stormwater management methods during the life of a project.

Two ephemeral streams, including Patterson Dry Creek, flow through the project's northeastern and southeastern areas. Undivided Holocene Alluvium underlies the streams and is erodible (CDOC 2023; Dudek 2025bbb). Project construction and operation, including the applicant's proposal to cut and fill up to depths of up to 30 bgs ft of natural slopes at the project site, would alter natural flow pathways (Dudek 2025y). Project construction has the potential to impact soil erosion and topsoil loss. During project construction and operation, ephemeral streamflow may cause soil erosion at the project site.

The applicant proposed applying for coverage under a National Pollution Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Land Disturbance Activities, Order WQ 2022-0057 DWQ, NPDES No. CAS000002 (Construction General Permit). The Construction General Permit would require the applicant to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) (AMLGMN 2024ddd).

The applicant proposes consistency with the Alameda County Municipal Code and recommended mitigation for soil erosion in the preliminary site-specific geotechnical report (AMLGMN 2024ddd).

To ensure the final design, grading, and construction of project components within the CEC's Opt-In Certification mitigate potential impacts related to soil erosion and topsoil loss, CEC staff proposes Water Resources COCs **WATER-1** and **WATER-4**. COC **WATER-1** requires the project owner to fulfill the requirements in a State Water Resources Control Board National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities. COC **WATER-4** requires the project owner to obtain a Nationwide Permit Pre-Construction Notification with the U.S. Army Corp of Engineers and a dredge and fill waste discharge requirements with the Central Valley Regional Water Quality Control Board.

To mitigate potential impacts related to soil erosion and topsoil loss during operation of project components within the CEC's Opt-In Certification, CEC staff proposes COC **WATER-2**. COC **WATER-2** requires the project owner to prepare and implement a site-specific Drainage, Erosion, and Sedimentation Control Plan (DESCP) to manage stormwater during project operation.

During construction and operation of project components within the CEC's Opt-In Certification, compliance with COCs **WATER-1, WATER-2**, and **WATER-4** would mitigate potential impacts related to substantial soil erosion or loss of topsoil to less than significant.

Project Components Outside the CEC's Opt-In Certification

Construction and Operation

Less Than Significant with Mitigation Incorporated. CEC staff assumes the Tesla Substation was designed, graded, and constructed in compliance with applicable LORS and thus mitigated potential impacts on soil erosion or topsoil loss to less than significant. CEC staff assumes the Tesla Substation operates in compliance with applicable LORS and thus mitigates potential impacts related to soil erosion or topsoil loss to less than significant. Therefore, the potential impacts from construction and operation of project components within the Tesla Substation on soil erosion and topsoil loss would be less than significant.

Based on the evaluation above, construction of project components outside the CEC's Opt-In Certification, and outside of the Tesla Substation, would include ground disturbing activities that could impact soil erosion and topsoil loss. For construction of project components that are outside the CEC's Opt-In Certification and outside the Tesla Substation, CEC staff recommends compliance with Water Resources **MM WATER-1** to mitigate potential impacts related to soil erosion and topsoil loss to less than significant.

Operation of project components outside the CEC's Opt-In Certification would not include ground disturbing activities and thus would have no impact on soil erosion and topsoil loss.

For more information, see **Section 5.16, Water Resources**.

c. Would the project be located on geologic units or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Construction and Operation

Landslide

Less Than Significant with Mitigation Incorporated. A project can decrease slope stability if inappropriate grading and construction methods are used. For example, poor grading and construction methods, such as loading the top of a slope or removing support from the sides or bottom of a slope, could decrease slope stability. As discussed earlier, the project has the potential to impact slope stability because of the proposed grading and susceptibility of the Miocene Neroly Formation to slope creep.

Based on the evaluation above, compliance with COC **GEO-1**, and Facility Design COCs **CIVIL-1, GEN-1**, and **STRUC-1**, would ensure the design, grading, and construction of project components within the CEC's Opt-In Certification mitigate potential impacts on slope stability hazards to less than significant.

Based on the evaluation above, CEC staff recommends that PG&E comply with applicable LORS, including state and county building codes, for the final design, grading, and construction of project components that are outside of the CEC's Opt-In Certification and outside the existing Tesla Substation. Consistency with these requirements would mitigate potential impacts on slope instability hazards to less than significant.

Based on the evaluation above, project operation would have less than significant impacts on slope stability hazards.

Liquefaction and Lateral Spreading

Less Than Significant with Mitigation Incorporated. As discussed earlier, CEC staff conservatively assumes that seismic-related ground failure hazards, including liquefaction and lateral spreading, exist at the project site because potentially liquefiable soils underlie portions of the project.

Based on the evaluation above, compliance with COC **GEO-1**, and Facility Design COCs **CIVIL-1, GEN-1**, and **STRUC-1**, would ensure the design, grading, and construction of project components within the CEC's Opt-In Certification mitigate potential impacts on seismic-related ground failure hazards to less than significant.

Based on the evaluation above, CEC staff recommends that PG&E comply with applicable LORS, including state and county building codes, for the final design, grading, and construction of project components outside of the CEC's Opt-In Certification and outside the existing Tesla Substation. Based on the evaluation above, consistency with these requirements would mitigate potential impacts on seismic-related ground failure hazards to less than significant.

Based on the evaluation above, potential impacts from project operation on seismic-related ground failure hazards would be less than significant.

Soil Settlement

Project Components Within the CEC's Opt-In Certification

Construction and Operation

Less Than Significant with Mitigation Incorporated. Soil settlement, including differential soil settlement, is a geologic hazard where soils compress across a site. Differential settlement occurs when soils compress by varying amounts at different locations. Differential settlement can cause damage to site's foundations, utilities, and more. The potential for soil settlement depends on the soil thickness, soil characteristics, including stiffness modulus and compression indices, construction methods, and static and dynamic loading.

Soil settlement is a potential geologic hazard that may impact, or be impacted by, project construction and operation. The applicant proposed to cut and fill to depths of up to 30 ft bgs of natural slopes at the project site (Dudek 2025y). Project construction and operation would place natural soils and engineered fill across the project under varying static loads. Seismic shaking may cause natural soils and engineered fill across the project site to experience varying dynamic loads and thus differential soil settlement (Dudek 2025bbb).

The 2022 CBC, Section 1803, requires new construction to evaluate the potential, and propose mitigation, for total and differential soil settlement. The applicant proposed to construct the project in accordance with recommendations in the preliminary site-specific geotechnical report and Cal/OSHA regulations for soil settlement during construction excavations (Dudek 2025yy). The preliminary site-specific geotechnical report recommended a grading plan and mat foundation that would mitigate total settlement to less than one inch and mitigate differential settlement to 0.5 inches (Dudek 2025bbb).

To inform the project's final design, grading, and construction, COC **GEO-1** requires the project owner to complete and submit a geotechnical and geohazard report to the CEC for review and approval. The report should include final grading and facility design refinements to mitigate potential impacts related to soil settlement hazards to less than significant. COC **GEO-1** requires the project owner to incorporate the report's recommended refinements.

Compliance with COC **GEO-1**, and Facility Design COCs **CIVIL-1, GEN-1**, and **STRUC-1**, would ensure the design, grading, and construction of project components within the CEC's Opt-In Certification mitigate potential impacts related to soil settlement to less than significant.

Based on the evaluation above, potential impacts from operation of project components outside the CEC's Opt-In Certification on soil settlement hazards would be mitigated to less than significant.

Project Components Outside the CEC's Opt-In Certification

Construction and Operation

Less Than Significant with Mitigation Incorporated. CEC staff assumes the Tesla Substation was designed, graded, and constructed in compliance with applicable LORS, including state and county building codes, and thus mitigated any potential impacts related to soil settlement to less than significant. Therefore, the potential impacts related to soil settlement and construction and operation of project components within the Tesla Substation would be less than significant.

Based on the evaluation above, construction and operation of project component's outside of the existing Tesla Substation would occur on subsurface materials that are susceptible to soil settlement. To inform the final design, grading, and construction of

project components outside of the CEC's Opt-In Certification and outside the Tesla Substation, CEC staff recommends that PG&E comply with applicable LORS, including state and county building codes. Consistency with these requirements would mitigate potential impacts from construction and operation of project components outside the CEC's Opt-In Certification on soil settlement hazards to less than significant.

Subsidence

Less Than Significant. Subsidence is the gradual settling of the ground surface in response to the movement of material belowground. Natural processes that may cause subsidence include soil compaction, sinkhole formation, and earthquakes. Artificial activities that may cause subsidence include removal or addition of material belowground, such as groundwater pumping, hydraulic fracturing, mining, and oil extraction.

The project site is not in a location where artificial subsidence has occurred or is occurring (USGS 2018; Tracy Subbasin GSAs 2021). The project would not pump groundwater from the Tracy Subbasin for water supply (AMLGMN 2024z).

To supply water for construction and decommissioning of project components within the CEC's Opt-In Certification, the project would import 49.1 AF of water from the Zone 7 Water Agency. During operation of project components within the CEC's Opt-In Certification, the project would import up to 6 AFY of water from the Zone 7 Water Agency. The project would use water hauling trucks to bring water to the project site (Dudek 2025e).

The Zone 7 Water Agency has monitored for inelastic land subsidence in the Livermore Valley Groundwater Basin for over 60 years and concluded that land subsidence has not occurred in the basin (Zone 7 Water Agency 2021).

The Livermore Valley Groundwater Basin's sustainable yield is estimated at 18,700 AFY (Zone 7 Water Agency 2021). However, the Zone 7 Water Agency primarily meets water demand through surface water supplies and uses the basin as a water storage facility. During 2025 to 2045, the Zone 7 Water Agency is forecast to have a water surplus of 26,400 AFY to 37,900 AFY. The surplus calculation does not include the proposed project's water demand (Dudek 2025e).

The Zone 7 Water Agency is forecast to have sufficient existing water supply, mostly from surface water, to meet the project's proposed water demand. The project's water demand would not substantially lower groundwater elevations in the Livermore Valley Groundwater Basin and thus would not cause land subsidence.

For project components within the CEC's Opt-In Certification, CEC staff recommends compliance with Water Resources COC **WATER-5** to mitigate potential impacts from groundwater pumping on potential subsidence hazards in the Livermore Valley Groundwater Basin. Compliance with COC **WATER-5** would ensure that the potential impacts related to ground subsidence from groundwater pumping in the Livermore

Valley Groundwater Basin for project construction, operation, and decommissioning are mitigated to less than significant.

To supply water for construction, operation, and decommissioning of project components outside of the CEC's Opt-In Certification, CEC staff recommends that PG&E comply with applicable LORS, including the SGMA. Consistency with these requirements would mitigate potential impacts related to subsidence to less than significant.

See **Section 5.16, Water Resources**, for more information.

d. Would the project be located on expansive soil, as defined in Section 1803.5.3 of the California Building Code (2022), creating substantial direct or indirect risks to life or property?

Project Components Within the CEC's Opt-In Certification

Construction and Operation

Less Than Significant with Mitigation Incorporated. Expansive soil behavior is a phenomenon where clay soils react to changes in moisture content by expanding or contracting. Poorly drained soils have greater shrink-swell potential. Potential causes of moisture fluctuations include drying during construction, and subsequent wetting from rain, capillary rise, landscape irrigation, and type of plant selection. Untreated expansive soils could cause damage to future buildings, utilities, and pavements at the project site.

The preliminary site-specific geotechnical investigation identified expansive soils at the project site. Near the surface, stiff to hard medium plasticity lean clay and high plasticity fat clay were observed. Wetting and drying of these expansive clays could cause the project's foundations to crack or become uneven. The geotechnical investigation proposed potentially expensive mitigation to reduce the risk from expansive soils. Potential mitigation includes draining expansive soils early in construction, grading the site during warm and dry months, and earthwork actions, including subgrade improvement and fill placement. Grading is expected to remove soft shallow soils that have shrink-swell potential (Dudek 2025bbb).

The geotechnical investigation observed that potential load-bearing rock layers in the Miocene Neroly Formation also have shrink-swell potential. The geotechnical investigation recommended mitigation, including maintaining optimum moisture conditions and minimum static load pressures on mat foundations (Dudek 2025bbb).

The applicant proposed to cut and fill to depths of up to 30 ft bgs of natural slopes at the project site (Dudek 2025y). The 2022 CBC, Section 1803, requires projects in areas that are likely to have expansive soils to evaluate the potential, and propose mitigation, for expansive soils. Applicant proposed mitigation (APM) SOIL-1 proposed to construct

the project in accordance with the 2022 CBC and recommendations in the preliminary site-specific geotechnical report (AMLGMN 2024ddd).

To inform the final design, grading, and construction of project components within the CEC's Opt-In Certification, COC **GEO-1** requires the project owner to complete and submit a geotechnical and geohazard report to the CEC for review and approval. The report should include final grading and facility design refinements to mitigate potential impacts from expansive soil hazards. COC **GEO-1** requires the project owner to incorporate the report's recommended refinements into the final project design.

Compliance with COC **GEO-1** and Facility Design COCs **GEN-1, CIVIL-1**, and **STRUC-1** would ensure the design, grading, and construction of project components within the CEC's Opt-In Certification mitigate potential impacts from expansive soils on the project, including direct and indirect risks to human life, property, and grid reliability, to less than significant.

Project Components Outside the CEC's Opt-In Certification

Construction and Operation

CEC staff assumes the Tesla Substation was designed, graded, and constructed in compliance with applicable LORS, including state and county building codes, and thus mitigated any potential impacts related to expansive soils to less than significant. Therefore, the potential impacts related to expansive soils and construction and operation of project components within the Tesla Substation would be less than significant.

Based on the evaluation above, construction of project component's outside of the existing Tesla Substation would occur on potentially expansive soils, including Undifferentiated Holocene Alluvium. To inform the final design, grading, and construction of project components outside of the CEC's Opt-In Certification and outside the Tesla Substation, CEC staff recommends that PG&E comply with applicable LORS, including state and county building codes. Consistency with these requirements would mitigate potential impacts from construction and operation of project components outside the CEC's Opt-In Certification on expansive soil hazards to less than significant.

Based on the evaluation above, potential impacts from expansive soils on project operation would be less than significant.

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

Construction and Operation

Less Than Significant Impact with Mitigation Incorporated. During project construction, septic wastewater production would be limited to temporary toilet and sanitary facilities,

which would be serviced by a third-party contractor. Septic wastewater would be disposed offsite. No septic wastewater would be discharged at or near the project site.

During project operation, sanitary waste from the O&M buildings would be collected in two 5,000 gallon aboveground holding tanks. Periodically, a third-party vendor would pump out the tanks and dispose of the contents (Dudek 2025d).

Compliance with COC **WATER-3** would mitigate potential impacts from wastewater disposal related to construction and operation of project components within the CEC's Opt-In Certification on soils. With mitigation, potential impacts related to septic wastewater disposal during project construction and operation would be less than significant.

During construction and operation of project components outside the CEC's Opt-In Certification, CEC staff assumes PG&E staff are likely to use existing sanitary facilities at the Tesla Substation or portable toilets that a third-party vendor would service. Construction and operation of project components outside the CEC's Opt-In Certification would have less than significant impacts related to wastewater disposal.

See **Section 5.16, Water Resources**, for more information.

f. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Construction and Operation

Less Than Significant with Mitigation Incorporated. CEC staff evaluated the paleontological potential of geologic units that occur at the surface within one mile of the project site or may be encountered in the subsurface at the project site. The site-specific paleontological investigation (Dudek 2025xx) reviewed online paleontological collection databases, geologic and geotechnical information, primary literature, and conducted a field survey of the project site. CEC staff reviewed this information and used SVP (2010) standards to assign paleontological potential ratings to each geologic unit that occurs at the surface within one mile of the project or may be encountered in the subsurface at the project site. Paleontological potential ratings are summarized in **Table 5.6-3**.

Artificial fill is assigned low to no paleontological sensitivity. Artificial fill deposits were deposited for human construction activities and are unlikely to have paleontological resources.

Undivided Holocene Alluvium (Qha) is assigned low potential for paleontological resources if the deposits are recent in age. These deposits have higher potential for paleontological resources with age and depth. Pleistocene to Holocene Landslide Deposits (Qls) are assigned low paleontological sensitivity because these deposits are chaotic and potentially recent. However, the potential for landslides to include paleontological resources increases with age and depth.

Latest Pleistocene Alluvial Fan Deposits (Qpf) and Early to Late Pleistocene Pediment Deposits (Qop) are assigned high paleontological sensitivity because there is evidence that Pleistocene deposits of this age and depositional setting may contain vertebrate and invertebrate fossils. The UCMP database contains records of Pleistocene-age vertebrate and invertebrate fossil localities in Alameda County. Jefferson (1991) and Bell et al. (2004) reported late Pleistocene fossils of North American ice age megafauna, such as bear, bison, camel, mammoth, mastodon, and sloth, at sites in Alameda County (Dudek 2025xx).

The Early Pliocene (age inferred) to Late Miocene Carbona Formation (PMc) is assigned high paleontological sensitivity. The Carbona Formation is partly equivalent to the Oro Lima and Tehama formations, which contain vertebrate and invertebrate fossils (CDOC 2023; Dudek 2025xx). According to the PBDB and UCMP databases, the Oro Lima and Tehama formations contain fish, invertebrate, mammal, and reptile fossils (Dudek 2025xx).

The Late Miocene Neroly Formation is assigned high paleontological sensitivity because it contains invertebrate fossils. The NHMLA database contains records of invertebrate fossils in surface outcrops of the Neroly Formation in northern and southern California. The NHMLA database reports fossil localities of echinoderms, and more species, in the Neroly Formation within 1.5 miles of the project site. In Contra Costa County, along the Mount Diablo Scenic Highway, the NHMLA has documented shell beds with scallops (*Pecten crassicardo*) and other invertebrates in the Neroly Formation. In Santa Barbara County, in the Cuyama Valley the NHMLA has documented Whitney's sand dollar (*Astrodapsis whitneyi)* in the Neroly Formation (Dudek 2024eeee).

The Late Miocene Cierbo Formation is assigned high paleontological sensitivity because it contains vertebrate, invertebrate, and plant fossils. The dominant fossil type reported in the formation are marine invertebrates, primarily scallops (genus *Ostrea*) (CDOC 2023; Dudek 2025xx). The UCMP database reports plants and unidentified vertebrate fossils in the Cierbo Formation (Dudek 2025xx).

The Late Cretaceous Panoche Formation is assigned high paleontological sensitivity because it contains vertebrate, invertebrate, and plant fossils. The PBDB and UCMP databases report marine reptiles, fish, marine invertebrates, and fossilized wood in the Panoche Formation (Dudek 2025xx). The Late Cretaceous Unit C – Upper Member and Unit D – Marine Sandstone are assigned high paleontological sensitivity because these map units are equivalent to the Late Cretaceous Panoche Formation (CDOC 2023).

TABLE 5.6-3 PALEONTOLOGICAL POTENTIAL OF GEOLOGIC UNITS

Geologic Unit	Geologic Map Abbreviation	Paleontological Potential
Artificial fill	Af	Low to no potential
Undivided Holocene Alluvium	Qha	Low sensitivity at surface increasing to high sensitivity at depth.
Pleistocene to Holocene Landslide Deposits	Qls	Low sensitivity at surface increasing to high sensitivity at depth.

TABLE 5.6-3 PALEONTOLOGICAL POTENTIAL OF GEOLOGIC UNITS

Geologic Unit	Geologic Map Abbreviation	Paleontological Potential
Latest Pleistocene Alluvial Fan Deposits	Qpf	High sensitivity
Early to Late Pleistocene Old Pediment Deposits	Qop	High sensitivity
Early Pliocene (age inferred) to Late Miocene Carbona Formation	PMc	High sensitivity
Late Miocene Neroly Formation	Mnr	High sensitivity
Late Miocene Cierbo Sandstone	Mc	High sensitivity
Late Cretaceous Panoche Formation	Kps	High sensitivity
Late Cretaceous Unit C – Upper Member	Kc	High sensitivity
Late Cretaceous Unit D – Marine Sandstone	Kd	High sensitivity

Source: Modified from Dudek 2025xx

The site-specific paleontological investigations and museum records searches did not report paleontological resources at the project site. However, the Miocene Neroly Formation underlies most of the project and has high paleontological sensitivity. Excavation and grading into the Miocene Neroly Formation may encounter fossils. Excavation and grading may also encounter other rock formations, described above, that underlie the Neroly Formation and have high paleontological sensitivity.

Undivided Holocene Alluvium also underlies the project. Undivided Holocene Alluvium has low paleontological sensitivity near the surface and increasing paleontological sensitivity with depth. Older Quaternary deposits with high paleontological sensitivity, such as Latest Pleistocene Alluvial Fan Deposits and Early to Late Pleistocene Old Pediment Deposits, may occur in the subsurface between Undivided Holocene Alluvium and presumed Miocene Neroly Formation bedrock.

The applicant proposed APM PAL-1 to mitigate potential impacts to paleontological resources (Dudek 2025zz).

For the grading and construction of project components within the CEC's Opt-In Certification, CEC staff proposes COCs **PAL-1** through **PAL-8** to address the potential for the discovery of paleontological resources during excavation in native subsurface sedimentary deposits and rock formations.

Construction of project components that are outside the CEC's Opt-In Certification and within the Tesla Substation would not include ground disturbing activities and would have no impact on paleontological resources.

For the grading and construction of project components that are outside the CEC's Opt-In Certification and outside the Tesla Substation, CEC staff recommends that PG&E staff comply with **MM PAL-1** through **MM PAL-8**. With mitigation, potential impacts from project construction on paleontological resources would be less than significant.

Geological features are the result of geological processes, natural processes that occur above and below the Earth's surface. Geological features that are unusual or out of the ordinary are unique. No unique geologic features were mapped or identified within the site footprint. The Miocene Neroly Formation and Undivided Holocene Alluvium occur at the surface of the project site. These sedimentary rocks and deposits are common in eastern Alameda County (CDOC 2023; Dudek 2025yy). Potential impacts from project construction on unique geological resources of scientific or recreational value would be less than significant.

Ground disturbing activities would not occur during project operation. Project operation would have less than significant impacts on paleontological resources and unique geological features of scientific or recreational value.

g. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?

Construction and Operation

Less Than Significant Impact. Production of sand and gravel, salt, stone, petroleum, and clays contribute to Alameda County's economy (Alameda County 1994). The CGS mapped MRZs in the South San Francisco Bay Area, including Alameda County. The project site is in an area the CGS did not evaluate (CDOC 1996).

As described above, the sedimentary rock formations and deposits underlying the project site are widespread in eastern Alameda County and the Diablo Range (CDOC 2023). The geologic units are not unique in terms of commercial, scientific, and recreational value. Impacts from project construction and operation on mineral resources of commercial, scientific, or recreational value would be less than significant.

h. Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

Construction and Operation

As described above, locally important mineral and fossil fuel resources are extracted in Alameda County (Alameda County 1994). Consistent with the SMARA, the CGS classifies mineral lands as MRZs based on the importance and availability of local mineral deposits (CDOC 2000). The project site is an area that the CGS has not evaluated for MRZs (CDOC 2016). Alameda County has also not evaluated the project area for mineral resource recovery sites. The East County Area Plan, Policy 155, requires that

the voters of Alameda County vote to approve any new quarries and open-pit mines that are outside of the county's Urban Growth Boundary (East County Area Plan 2000).

The closest active mines to the project are at least eight miles away (CDOC 2016). The closest inactive mines to the project are two open pit mines that are about two miles east of the project (USGS 2011). There are no energy production related wells on the project site. The closest energy production related wells are seven plugged and abandoned wells that are 1.5 miles to three miles away from the project (CDOC 2025a).

While grading and construction would disturb sedimentary rock formations and deposits that are common in the region, due to reasons discussed above, CEC staff concludes that grading and construction would have less than significant impacts on potential future locally important mineral recovery sites.

Project operation would not include ground disturbing activities and thus would have no impact on locally important mineral resource recovery sites.

5.6.2.3 Cumulative Impacts

A cumulative impact refers to a proposed project's incremental effect together with other closely related past, present, and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the project. The proposed project may have cumulative impacts if the incremental effect of the project is considerable when viewed in connection with other past, present, and reasonably foreseeable future projects (CPRC § 21083; CCR, Title 14, § 15064[h], 15065[c], 15130, and 15355).

Geologic Hazards

The proposed project would be constructed and operated in eastern Alameda County, a seismically active environment. Geologic hazards are generally site-specific and depend on localized geologic and soil conditions. Potential geologic hazards that are expected to impact, or be impacted by the project, include strong seismic ground shaking, seismically induced ground failure, landslides, unstable geologic units and soils, expansive soils, and soil erosion. Potential impacts related to geologic hazards would be mitigated to less than significant through appropriate design, grading, and construction.

The applicant completed a preliminary geotechnical investigation that made design, grading, and construction recommendations to mitigate geologic hazards. The investigation stated that additional geotechnical evaluations and design are needed as the project is finalized (Dudek 2025bbb). To inform the project's final design, COC **GEO-1** requires the project owner to complete and submit a geotechnical and geohazard report to the CEC for review and approval. The report should include final grading and facility design refinements to mitigate the impacts of geologic hazards on the project, and the project's impacts on geologic hazards, to less than significant. COC **GEO-1** requires the project owner to incorporate the report's recommended mitigation into the project's final design, grading, and construction.

Compliance with COC **GEO-1**, Facility Design COCs **GEN-1, CIVIL-1**, and **STRUC-1**, Water Resources COCs **WATER-1, WATER-2, WATER-4**, and **WATER-5**, the CBC, Alameda County Municipal Code, and all other applicable federal, state, and local LORS, would mitigate the impacts from geologic hazards on the project, including on human life, property, and grid reliability, and the project's impacts on geologic hazards, to less than significant.

Compliance with Water Resources COC **WATER-3**, the CBC, Alameda County Municipal Code, and all applicable federal, state, and local LORS, would mitigate potential impacts from wastewater disposal and septic tanks on soils.

Compliance with CEC staff's proposed COCs would prevent the proposed project from having considerable cumulative impacts related to geologic hazards.

As is required for the project, cumulative projects in the area are required to comply with applicable LORS related to geological hazards. For other projects, adherence to all LORS pertaining to building safety and construction would mitigate cumulative impacts related to geologic hazards to less than significant.

Geologic, Mineral, and Paleontological Resources

Project grading, excavation, and construction may encounter fossils. If significant paleontological resources are uncovered, they would be protected and preserved in accordance with COCs **PAL-1** through **PAL-8** and all other applicable federal, state, and local LORS. Compliance with CEC staff's proposed COCs would prevent the proposed project from having considerable cumulative impacts related to paleontological resources.

No unique surface or near surface geologic features nor resources of commercial, scientific, and recreational value, including mineral resources, were identified in the project area. Development of this project is not expected to lead to a significantly cumulative effect on geologic and mineral resources in the project area.

As is required for the project, cumulative projects in the area are required to comply with applicable LORS related to geologic, mineral, and paleontological resources. For other projects, adherence to all LORS pertaining to geologic, mineral, and paleontological resources would not be considerable.

5.6.3 Project Conformance with Applicable LORS

Table 5.6-4 lists CEC staff's determination of conformance with applicable federal, state, and local LORS, including applicable proposed COCs, to ensure that the project components within the CEC's Opt-In certification would conform with LORS. As the table summarizes, CEC staff concludes that with implementation of specific COCs, the proposed project would conform with all applicable LORS. Subsection 5.6.5, below, contains the full text of COCs **GEO-1** and **PAL-1** through **PAL-8**.

The full text of COCs **GEN-1, CIVIL-1**, and **STRUC-1** is in **Section 4.1, Facility Design**. The full text of COCs **WATER-1** through **WATER-5** is in **Section 5.16, Water Resources**.

TABLE 5.6-4 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis For Determination
State	
The 1972 **Alquist-Priolo Earthquake Fault Zoning Act** requires the California Geological Survey to designate Alquist-Priolo Fault Zones, which are active faults that have evidence of surface rupture in the past 11,000 years. The act mitigates against surface fault rupture of known active faults beneath occupied structures. The act requires disclosure to potential buyers of existing real estate and a 50-foot setback for new occupied buildings. Portions of the site and proposed ancillary facilities are located within designated Alquist-Priolo Fault Zones. The proposed site layout places occupied structures outside of the 50-foot setback zone. (CPRC 2024b)	**Yes.** Compliance with COCs **GEO-1, CIVIL-1, STRUC-1,** would ensure the proposed project complies with the Alquist-Priolo Earthquake Fault Zoning Act's laws and regulations.
The 2022 **California Building Code** includes a series of standards that are used in project investigation, design, and construction (including seismicity, grading and erosion control). The CBC has adopted provisions in the International Building Code. (CBC 2022)	**Yes.** Compliance with COCs **GEO-1, GEN-1, CIVIL-1, STRUC-1**, and **WATER-1** through **WATER-5** would ensure the proposed project complies with the California Building Code's standards and provisions.
The **California Public Resources Code, Division 5, Chapter 1.7 Archaeological, Paleontological, and Historical Sites** prohibits the removal of paleontological resources from public lands under the jurisdiction of the state, or any city, county, district, authority, or public corporation, or any agency thereof.	**Less Than Significant Impacts.** The project site is privately owned.
The 1990 **Seismic Hazards Mapping Act** requires the California Geological Survey to identify areas (zones) that are subject to the effects of strong ground shaking, such as liquefaction, landslides, tsunamis, and seiches. Requires a geotechnical report be prepared that defines and delineates any seismic hazard prior to approval of a project in a seismic hazard zone. (CPRC 2017)	**Yes.** Compliance with COCs **GEO-1, CIVIL-1,** and **STRUC-1** would ensure the proposed project complies with the Seismic Hazards Mapping Act's laws and regulations.
The 1975 **Surface Mining and Reclamation Act** provides a comprehensive surface mining and reclamation policy for the regulation of surface mining operations to assure that adverse environmental impacts are minimized and mined lands are reclaimed to a usable condition. (CPRC 2022)	**Less Than Significant Impacts.** The project would have less than significant impacts on known valuable mineral resources or locally important mineral resource recovery sites.
Local	

TABLE 5.6-4 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
Alameda County Municipal Code (2024)	
Title 15. Adopts, amends, and adds to the California Building Code. Identifies building and construction requirements to reduce hazard potential that are applicable to all new construction, including the project.	**Yes.** Compliance with COCs **GEO-1, GEN-1, CIVIL-1, STRUC-1,** and **WATER-1** through **WATER-5** would ensure the proposed project complies with the Alameda County Municipal Code's ordinances and standards.
Alameda County General Plan: Conservation Element (1994), III. Goals and Objectives for Conservation of Resources, C. Mineral, Extractive Resources	
Goal: To ensure extraction of minerals and reclamation of lant to fullest extent possible consistent with sound management policies.	**Yes.** The project complies with the goal and objectives in this element of the Alameda County General Plan.
Objective 1: To provide access to minerals through identification of the resource.	
Objective 2: To permit extraction only when not detrimental to other valuable resources.	
Objective 3: To utilize lower quality sources by methods which minimize environmental costs.	
Objective 4: To increase recycling of mineral commodities such as metals.	
Objective 5: To work with government and the extractive industries to improve mineral extraction policies and practices.	
Alameda County General Plan: Safety Element (2022), Chapter 1: Natural Hazards, Section 2.0: Seismic and Geologic Hazards, Subsection 2.6: Goals, Policies, and Implementing Actions	
Goal 1: To minimize risks to lives and property due to seismic and geologic hazards.	**Yes.** Compliance with the COCs **GEO-1, GEN-1, CIVIL-1, STRUC-1,** and **WATER-1** through **WATER-5** would ensure the project complies with the goals, policies, and actions in this element of the Alameda County General Plan.
Policy 1: To the extent possible, projects should be designed to accommodate seismic shaking and should be sited away from areas subject to hazards induced by seismic shaking (landsliding, liquefaction, lurking, etc.) where design measures to mitigate the hazards will be uneconomic or will not achieve a satisfactory degree of risk reduction.	
Policy 2: Structures should be located at an adequate distance away from active fault traces, such that surface faulting is not an unreasonable hazard.	
Policy 3: Aspects of all development in hillside areas, including grading, vegetation removal and drainage, should be carefully controlled in order to minimize erosion, disruption to natural slope stability, and landslide hazards.	
Policy 4: Within areas of demonstrated or potential slope instability, development should be undertaken with caution and only after existing geological and soil conditions are known and considered. In areas subject to possible widespread major landsliding, only very low density development should be permitted,	

TABLE 5.6-4 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
consistent with site investigations; grading in these areas should be restricted to minimal amounts required to provide access.	
Policy 6: The County shall not approve new development in areas with potential for seismic and geologic hazards unless the County can determine that feasible measures will be implemented to reduce the potential risk to acceptable levels, based on site-specific analysis. The County shall review new development proposals in terms of the risk caused by seismic and geologic activity.	
Policy 7: The County, prior to approving new development, shall evaluate the degree to which the development could result in loss of lives or property, both within the development and beyond its boundaries, in the event of a natural disaster.	
Policy 8: The County shall ensure that new major public facilities, including emergency response facilities (e.g., hospitals and fire stations), and water storage, wastewater treatment and communications facilities, are sited in areas of low geologic risk.	
Policy 9: Site specific geologic hazard assessments, conducted by a licensed geologist, shall be completed prior to development approval in areas with landslide and liquefaction hazards as indicated in Figures S-2 and S-4 and for development proposals submitted in Alquist-Priolo Zones as indicated in Figure S-1, hazards to be mapped include: seismic features, landslide potential, liquefaction potential Mitigation measures needed to reduce the risk to life and property from earthquake induced hazards should be included.	
Policy 10: Buildings shall be designed and constructed to withstand ground shaking forces of a minor earthquake (1-4 magnitude) without damage, of a moderate (5 magnitude) earthquake without structural damage, and of a major earthquake (6-8 magnitude) without collapse of the structure. The County shall require that critical facilities and structures (e.g. hospitals, emergency operations centers) be designed and constructed to remain standing and functional following an earthquake.	
Policy 11: All construction in unincorporated areas shall conform to the Alameda County Building Ordinance, which specifies requirements for the structural design of foundations and	

TABLE 5.6-4 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
other building elements within seismic hazard areas.	
Policy 12: To the extent feasible, major infrastructure including transportation, pipelines, and water and natural gas mains, shall be designed to avoid or minimize crossings of active fault traces and to accommodate fault displacement without major damage that could result in long-term service disruptions.	
Policy 14: In order to minimize off-site impacts of hillside development, new construction on landslide-prone or potentially unstable slopes shall be required to implement drainage and erosion control provisions to avoid slope failure and mitigate potential hazards.	
Action 1: Require all new construction to meet the most current, applicable, lateral force requirements.	
Action 2: Require applications for development within Alquist-Priolo Study Zones to include geological data that the subject property is not traversed by an active or potentially active fault, or that an adequate setback can be maintained between the fault trace and the proposed new construction.	
Action 3: Require sites to be developed in accordance with recommendations contained in the soil and geologic investigations reports.	
Action 4: Establish standards for areas previously in Alquist-Priolo Study Zones, and eliminated in the last update.	
Action 5: Regulate, with collaboration from utility owners, the extension of utility lines in fault zones.	
Action 6: Establish (with collaboration from utility owners) and enforce design standards for transportation facilities and underground utility lines to be located in fault zones.	
Action 7: Require soils and/or geologic reports for development proposed in areas of erodible soils and potential slope instability.	
Action 9: Support regional or statewide programs providing funding or technical assistance to local governments to allow identification of existing structural hazards in private development and providing assistance to public and private sectors to facilitate and to minimize the social and economic costs of hazards abatement.	
Action 11: Continue, and as required, expand programs to provide the public information	

TABLE 5.6-4 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
regarding seismic hazards and related structural hazards.	
Action 12: Require geotechnical studies prior to development approval in geologic and/or seismic hazard areas as identified by future studies by federal, state, and regional agencies. Require or undertake comprehensive geologic and engineering studies for critical structures regardless of location.	
Action 13: Adopt and amend as needed the most current version of the California Building Code to ensure that new construction and renovation projects incorporate Earthquake-resistant design and materials that meet or exceed the current seismic engineering standards of the CBC.	
Action 14: Periodically update detailed guidelines for preparation of site-specific geologic hazard assessments. These guidelines shall be prepared in consultation with the County Building Official, County Engineer, County Counsel and the County Risk Manager and shall ensure that site-specific assessments for development requiring discretionary permits are prepared according to consistent criteria.	
Action 16: On sites with slopes greater than 30 percent, require all development to be clustered outside of the 30 percent slope area. With the exception that development upon any area outside of the Urban Growth Boundary where the slope exceeds 25% shall not be permitted.	
Action 17: Aspects of all development in hillside areas, including grading, vegetation removal and drainage, should be carefully controlled in order to minimize erosion, disruption to natural slope stability, and landslide hazards. The County's development standards and guidelines, permit application review process, Section 15.08.240 of its Building Ordinance, the Grading Erosion and Sediment Control Ordinance (Chapter 15.36 of the Alameda County General Ordinance Code), the Stormwater Management and Discharge Control Ordinance (Chapter 13.08), and Subdivision Ordinance (Title 16) shall serve to implement this policy.	
East County Area Plan: A Portion of the Alameda County General Plan (2000), II. Goals, Policies and Programs, Land Use section, Special Land Uses subsection, Quarries and Regionally Significant Aggregate Resource Areas subsection	
Goal: To recognize the regional value of the County's construction aggregate resources and	

TABLE 5.6-4 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
to ensure compatibility between quarry operations and surrounding land uses.	**Yes.** The project complies with the goal, policies, and implementation programs in this section of the East County Area Plan.
Policy 155: Except to the extent required by State law, no new quarry or other open-pit mine may be approved by the County outside the Urban Growth Boundary, unless approved by the voters of Alameda County. Excavation not adjacent to an existing quarry site and on the same or an adjoining parcel shall be regarded as a new quarry. A quarry that has received all necessary discretionary County and other approvals and permits prior to the effective date of the ordinance — but has not yet exercised those approvals and permits — is to be considered an "existing" rather than a "new" quarry.	
Policy 157: The County shall review proposals for development within or adjacent to state-designated Regionally Significant Construction Aggregate Resource Sectors. If the development is proposed on unincorporated land, the County shall consider the effects of such development on the future or continued extraction of the resource and shall approve such development only if conditions are applied to minimize the potential of the new use to preclude continued or future access to the resource. If the development is proposed within a city, the County shall encourage the city to do the same.	
Policy 158: The County shall require that, where conflicts between a new use and existing quarry are anticipated, notifying future residents and mitigating the conflict shall be the responsibility of the new use.	
Policy 159: The County shall impose conditions on approval of new Surface Mining Permits and Reclamation Plans to protect nearby uses from potential traffic, noise, dust, health and safety, visual and other impacts generated by sand and gravel quarries. Conversely, the County shall not approve land uses adjacent to any existing quarry or Regionally Significant Construction Aggregate Resource Sector if the development of the new uses would result in exposure of residential or other sensitive uses to possible adverse impacts of the quarry, unless the new uses can effectively mitigate the significant adverse impacts and notify potential homeowners of the risk, as required by Policy 158.	

TABLE 5.6-4 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
Policy 160: The County shall ensure that where quarry operations are located in areas designated as Water Management, extraction of the aggregate resource shall be allowed in the short-term. Reclamation of the land for water management and other compatible uses shall occur subject to conditions of Surface Mining Permits and Reclamation Plans and consistent with the Specific Plan for Livermore-Amador Valley Quarry Area Reclamation or the comparable plan prepared for the Sunol Valley/San Francisco Water Department watershed lands pursuant to Policy 161 and Program 71, whichever is applicable.	
Policy 162: The County shall allow manufacturing uses which make extensive use of harvested aggregate to locate near sand and gravel quarries.	
Policy 163: The County shall encourage concurrent mining and agricultural uses on sites where aggregate deposits are overlain by agriculturally valuable soils to minimize the premature disturbance of such soils. To this end, the County shall consider phasing of quarry operations in the approval of Surface Mining Permits and Reclamation Plans.	
Policy 164: The County shall ensure that where quarry operations will be reclaimed as open space, reclamation plans are designed to restore biological value to sites through appropriate revegetation, contouring of lakes to simulate natural bodies of water, and protection or in-kind replacement of significant trees.	
Policy 165: The County shall require that water-conserving practices are incorporated into mining and reclamation operations.	
Policy 166: The County shall require landscaping to reduce visibility of mining activity and ancillary uses during all phases of quarry operations, in addition to landscaping for final site reclamation. Landscaping should as closely as possible approximate the pre-existing natural conditions prior to surface mining.	
Policy 167: The County shall impose conditions of approval on new Petroleum Resource Exploration and Extraction conditional use permits to protect future onsite and nearby uses from potential impacts resulting from petroleum exploration or extraction; potential impacts include but are not limited to traffic, noise, dust, health and safety, and visual impacts, as well as	

TABLE 5.6-4 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
land contamination, surface and groundwater contamination, improper disposal of petroleum wastes, and improper site reclamation. The conditions should at least include, but not be limited to, those developed through the California Environmental Quality Act review process, and shall be monitored accordingly.	
Program 169: The County shall amend the Surface Mining Ordinance to require permit applicants for any Surface Mining Permit and Reclamation Plan to provide appropriate buffering of quarry operations from adjacent land uses, such as setbacks, landscaping, and use restrictions.	
Program 170: The County shall amend the Surface Mining Ordinance to include reclamation guidelines consistent with the Surface Mining and Reclamation Act (SMARA).	
Program 172: The County shall require that if a development is approved within 1,000 feet of a state-designated Regionally Significant Construction Aggregate Resource Sector, a real estate disclosure notice shall be included in deeds to notify purchasers and lenders of the proximity of the resource sector and that, if the resource were mined in the future, there could be attendant nuisances associated with mining such as dust, noise, and unattractive physical appearance.	
East County Area Plan: A Portion of the Alameda County General Plan (2000), II. Goals, Policies and Programs, Environmental Health and Safety section, Environmental Hazards subsection, Soil and Slope Stability subsection	
Goal: To minimize the risks to lives and property due to soil and slope instability hazards.	**Yes**. Compliance with COCs **GEO-1, GEN-1, CIVIL-1,** and **STRUC-1** would ensure the proposed project complies with the goal and policies in this section of the East County Area Plan.
Policy 307: The County shall encourage Zone 7, cities, and agricultural groundwater users to limit the withdrawal of groundwater in order to minimize the potential for land subsidence.	
Policy 308: The County shall not permit development within any area outside the Urban Growth Boundary exceeding 25 percent slopes to minimize hazards associated with slope instability.	
East County Area Plan: A Portion of the Alameda County General Plan (2000), II. Goals, Policies and Programs, Environmental Health and Safety section, Environmental Hazards subsection, Seismic and Geologic Hazards subsection	
Goal: To minimize the risks to lives and property due to seismic and geologic hazards.	**Yes**. Compliance with COCs **GEO-1, GEN-1, CIVIL-1, STRUC-1,** and **WATER-1** through **WATER-5** would ensure the proposed project complies with the goal, policies, and
Policy 309: The County shall not approve new development in areas with potential for seismic and geologic hazards unless the County can	

TABLE 5.6-4 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
determine that feasible measures will be implemented to reduce the potential risk to acceptable levels, based on site-specific analysis. The County shall review new development proposals in terms of the risk caused by seismic and geologic activity.	implementation programs in this section of the East County Area Plan.
Policy 310: The County, prior to approving new development, shall evaluate the degree to which the development could result in loss of lives or property, both within the development and beyond its boundaries, in the event of a natural disaster.	
Policy 311: The County shall ensure that new major public facilities, including emergency response facilities (e.g., hospitals and fire stations), and water storage, wastewater treatment and communications facilities, are sited in areas of low geologic risk.	
Policy 312: The County shall ensure that major transportation facilities and pipelines are designed, to the extent feasible, to avoid or minimize crossings of active fault traces and to accommodate fault displacement without major damage that could result in long-term disruption of service.	
Policy 313: The County shall require development in hilly areas to minimize potential erosion and disruption of natural slope stability which could result from grading, vegetation removal, irrigation, and drainage.	
Policy 314: The County shall prohibit the construction of any structure intended for human occupancy within 50 feet on either side of the Calaveras, Greenville, or Verona earthquake fault zones as defined by the Alquist-Priolo Earthquake Fault Zoning Act.	
Policy 315: The County shall require that buildings be designed and constructed to withstand groundshaking forces of a minor earthquake without damage, of a moderate earthquake without structural damage, and of a major earthquake without collapse of the structure. The County shall require that critical facilities and structures (e.g., hospitals, emergency operations centers) be designed and constructed to remain standing and functional following an earthquake.	
Implementation Program 111: The County shall delineate areas within East County where the potential for geologic hazards (including seismic hazards, landslides, and liquefaction)	

TABLE 5.6-4 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
warrants preparation of detailed site specific geologic hazard assessments. Areas shall be delineated based upon data from published sources and field investigations. Maps shall be maintained and updated as new data become available. These maps shall not be used by the County to determine where hazardous conditions exist, but instead to identify the presence of conditions which warrant further study.	
Implementation Program 112: The County shall develop detailed guidelines for preparation of site-specific geologic hazard assessments. These guidelines shall be prepared in consultation with the County Building Official, the County Engineer, County Geologist, County Counsel, and the County Risk Manager, and shall ensure that site-specific assessments for development requiring discretionary permits are prepared according to consistent criteria.	
Standards	
Society for Vertebrate Paleontology (2010)	
The **Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Non-Renewable Paleontological Resources** is a set of procedures and standards for assessing and mitigating impacts to vertebrate paleontological resources developed by the Society for Vertebrate Paleontology (SVP), a national organization of professional scientists. The measures were adopted in October 1995, and revised in 2010 following adoption of the Paleontological Resources Preservation Act of 2009. The SVP impact mitigation guidelines establish criteria for identifying and assessing significant paleontological resources. Additionally, these guidelines include standards and procedures to be employed prior to site disturbance, monitoring during disturbance, and preservation/mitigation of identified resources.	**Yes.** Compliance with the following COCs shall ensure compliance with Society for Vertebrate Paleontology standards. COCs **PAL-1** through **PAL-8** were developed based upon the guidance provided by the SVP to ensure that, if present, paleontological resources would be properly identified and appropriate protection or salvage measures implemented to mitigate the loss of these resources due to construction. COCs **PAL-1** through **PAL-8** require identification of a qualified Paleontological Resource Specialist, identification of qualified Paleontological Resource Monitors, training of site workers, periodic reporting, and collection, documentation and archival of any significant paleontological resources identified.

5.6.4 Conclusions and Recommendations

CEC staff recommends adopting COCs **GEO-1** and **PAL-1** through **PAL-8**, which are described below in Section 5.6.5. The proposed COCs are enforceable as part of the CEC's Opt-In Certification for the project.

Implementation of COCs **GEO-1** and **GEN-1, CIVIL-1**, and **STRUC-1** (**Section 4.1, Facility Design**) and **WATER-1** through **WATER-5** (**Section 5.16, Water Resources**) would mitigate potential impacts related to construction and operation of project components within CEC's Opt-In Certification on, and from, geologic hazards to

less than significant. These COCs would ensure the project is appropriately designed, graded, constructed, and operated to withstand, and not cause nor exacerbate, impacts related to geologic hazards on human life, property, and grid reliability.

Implementation of COCs **PAL-1** through **PAL-8** would mitigate potential impacts from construction of the project components within the CEC's Opt-In Certification on geologic, palaeontologic, and mineral resources of commercial, recreational, and scientific value, to less than significant.

For purposes of these COCs, references to the California Building Code and Code of Federal Regulations means the code in force at the time the project starts ground disturbing activities. Construction and operation of the project components within the CEC's Opt-In Certification would conform with applicable LORS.

Through compliance with the CBC, Alameda County Municipal Code, and all other applicable LORS, and CEC staff's recommended **MMs PAL-1** through **PAL-8** and **WATER-1** (**Section 5.16, Water Resources**), construction and operation of the project components outside the CEC's Opt-In Certification would have less than significant impacts from, and on, geologic hazards and geologic, palaeontologic, and mineral resources of commercial, recreational, and scientific value.

5.6.5 Proposed Conditions of Certification

GEO-1 In accordance with the CBC, Sections 1803.2 through 1803.5, if the DCBO determines that investigative conditions exist, the project owner shall perform geotechnical investigations for questionable soils, expansive soils, shallow groundwater, deep foundations, rock strata, excavations near foundations, compacted fill material, controlled low-strength material, alternate setback and clearance, and structures assigned to Seismic Design Categories C through F. In accordance with the California Business and Professions Code and CBC, Section 1803.1, the geotechnical investigations shall be conducted by a registered design professional.

In accordance with the CBC Section 1803.6, the project owner shall prepare a final geotechnical report that documents the results from the geotechnical investigations and provide project design recommendations to mitigate geologic hazards. In accordance with the CBC Section 1803.1, the final geotechnical report shall be prepared and signed by a California registered geotechnical engineer, certified engineering geologist, and a registered geophysicist, where applicable.

In accordance with the CBC Section 1803.7, the final geotechnical investigation report shall include a final geohazards report that considers seismic hazards. The final geohazard report shall identify site-specific geologic and seismic conditions that may require mitigation. The report shall recommend project design criteria to mitigate geologic and seismic hazards. The project owner shall incorporate

recommendations for project design criteria into the final project design. An appropriate qualified California-certified licensed engineering geologist, in consultation with a California registered geotechnical engineer, shall prepare the geohazards portion of the final geotechnical report.

Verification: The project owner shall provide to the CPM copies of the final geotechnical and geohazards report and any comments by the DCBO at least 60 days prior to ground disturbing activities.

PAL-1 The project owner shall provide the CPM with the resume, qualifications, and contact information of its paleontological resource specialist (PRS) for review and approval. The PRS's resume shall demonstrate to the satisfaction of the CPM the appropriate education and experience to accomplish the required paleontological resource tasks. The PRS's resume shall also include the names and phone numbers of references that can be contacted to verify information.

As determined by the CPM, the PRS shall meet the minimum qualifications for a Qualified Professional Paleontologist as defined in the Code of Federal Regulations (CFR) Title 43, Subtitle A, Part 49 – Paleontological Resources Preservation and in the Society of Vertebrate Paleontology's Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (SVP 2010). The qualifications of the PRS shall include the following:

1. A graduate degree in paleontology or geology, and/or a publication record in peer reviewed journals; and demonstrated competence in field techniques, preparation, identification, curation, and reporting in the state or geologic province in which the project occurs. An advanced degree is less important than demonstrated competence and regional experience.
2. At least three years of paleontological resource mitigation and field experience in California and at least one year of experience leading paleontological resource mitigation and field activities.
3. Proficiency in recognizing fossils in the field and determining their significance.
4. Expertise in local geology, stratigraphy, and biostratigraphy.
5. Experience collecting vertebrate fossils in the field.

The project owner shall ensure that the PRS obtains qualified paleontological resource monitors (PRMs) to monitor as he or she deems necessary on the project. PRMs shall have the equivalent of the following qualifications:

1. B.S. or B.A. degree in geology or paleontology and a minimum of one year of relevant paleontological resource monitoring experience in California; or
2. A.S. or A.A. in geology, paleontology, or biology and a minimum of four years of relevant paleontological resource monitoring experience in California; or

3. Enrollment in upper division classes pursuing a bachelor's degree or a more advanced degree in the field of geology or paleontology and a minimum of three years of relevant paleontological resource monitoring experience in California; and
4. Demonstrated proficiency in recognizing various types of fossils, in collection methods, and in other paleontological field techniques.

If the approved PRS is replaced prior to completion of project mitigation and submittal of the paleontological resources report (PRR), the project owner shall obtain CPM approval for the replacement PRS. The project owner shall keep resumes on file for the qualified PRSs and PRMs.

The PRM's resume shall include the names and contact information of references. If a PRM is replaced, the resume of the replacement PRM shall also be provided to the CPM for review and approval.

Verification: At least 60 days prior to the start of ground disturbance, the project owner shall submit a resume and statement of availability of its designated PRS for on-site work to the CPM for review and approval. CPM approval is required prior to the initiation of ground disturbing activities.

At least 30 days prior to ground disturbance, the PRS or project owner shall provide a letter with resumes naming anticipated PRMs for the project. The letter shall state that the identified PRMs meet the minimum qualifications for paleontological resource monitoring as required by this condition of certification. If additional PRMs are needed during the project, the PRS shall provide additional letters and resumes to the CPM. The letter shall be provided to the CPM for approval no later than one week prior to the monitor's beginning on-site duties.

Prior to any change of the PRS, the project owner shall submit the resume of the proposed new PRS to the CPM for review and approval.

PAL-2 The project owner shall provide the PRS and the CPM, for review and approval, maps and drawings showing the project footprint, including construction laydown areas and all related facilities. Maps shall identify all areas of the project where ground disturbance is anticipated. If the PRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the PRS and CPM. The site grading plan and the plan and profile drawings for the utility lines would be acceptable for this purpose. The plan drawings must show the location, depth, and extent of all ground disturbances and be at a scale between 1 inch = 40 feet (1:480) and 1 inch = 100 feet (1:1,200). If the footprint of the project or its linear facilities change, the project owner shall provide maps and drawings reflecting those changes to the PRS and CPM.

If construction of the project proceeds in phases, maps and drawings may be submitted prior to the start of each phase. A letter identifying the proposed schedule of each project phase shall be provided to the PRS and CPM. Before work commences on affected phases, the Project owner shall notify the PRS and CPM of any construction phase scheduling changes.

At a minimum, the project owner shall ensure that the PRS or PRM consults weekly with the project superintendent and construction field manager to confirm area(s) to be worked the following week, until ground disturbance is completed.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall provide maps and drawings to the PRS and CPM for review and approval.

If there are planned changes to the footprint of the project, revised maps and drawings shall be provided to the PRS and CPM at least 15 days prior to the start of ground disturbance.

If there are changes to the scheduling of the construction phases, the project owner shall submit a letter to the CPM within five days of identifying the changes.

PAL-3 The project owner shall ensure that the PRS prepares a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) and submits it to the CPM for review and approval. Approval of the PRMMP by the CPM shall occur prior to any ground disturbance. The PRMMP shall function as the formal guide for monitoring, collecting, sampling, and reporting activities, and may be modified with CPM approval. The PRMMP shall be used as the basis of discussion when on-site decisions or changes are proposed. Copies of the PRMMP shall include all updates and reside with the PRS, each PRM, the project's on-site manager, and the CPM.

The PRMMP shall be developed in accordance with the Society of Vertebrate Paleontology's Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (SVP 2010). The PRMMP shall include, but not be limited to, the following:

1. Procedures for, and assurance, that those procedures would be followed in the performance and sequence of project-related tasks, such as any literature searches, pre-construction surveys, worker environmental training, field work, flagging or staking, construction monitoring, mapping and data recovery, fossil preparation and collection, identification and inventory, preparation of final reports, and transmittal of materials for curation.
2. Identification of the person(s) expected to assist with each of the tasks required by the PRMMP and these COCs.

3. A thorough discussion of the geologic units expected to be encountered, the location and depth of the units relative to the project when known, and the known sensitivity of those units based on the occurrence of fossils either in that unit or in correlative units.
4. An explanation of why sampling is needed, a description of the sampling methodology, and how much sampling is expected to take place and in which geologic units. This shall include descriptions of the sampling procedures that shall be used for fine-grained and coarse-grained units.
5. A discussion of the locations where monitoring of project construction activities is deemed necessary, and a proposed plan for monitoring and sampling at these locations.
6. A discussion of procedures to be followed: (a) in the event of a significant fossil discovery, (b) stopping construction, (c) resuming construction, and how notifications shall be performed.
7. A discussion of equipment and supplies necessary for collection of fossil materials and any specialized equipment needed to prepare, remove, load, transport, and analyze large-sized fossils or extensive fossil deposits.
8. Procedures to inventory, prepare, and deliver fossil materials for curation in a retrievable storage collection at a public repository or museum that meet the Society of Vertebrate Paleontology's standards and requirements for the curation of paleontological resources.
9. Identification of the institution that has agreed to receive data and fossil materials collected, requirements or specifications for materials delivered for curation and how they shall be met, and the name and phone number of the contact person at the institution.
10. A copy of the paleontological resources COCs.
11. A copy of the daily monitoring log form.

Verification: At least 30 days prior to ground disturbance, the project owner shall provide a copy of the PRMMP to the CPM for review and approval. Approval of the PRMMP by the CPM shall occur prior to any ground disturbance. The PRMMP shall include an affidavit of authorship by the PRS and acceptance of the PRMMP by the project owner evidenced by a signature.

PAL-4 Prior to ground disturbance the project owner and the PRS shall prepare a CPM-approved Worker Environmental Awareness Program (WEAP).

The WEAP shall address the possibility of encountering paleontological resources in the field, the sensitivity and importance of these resources, and legal obligations to preserve and protect those resources. The purpose of the WEAP is to train project workers to recognize palaeontologic resources and identify

procedures they must follow to ensure there are no impacts to sensitive palaeontologic resources.

The WEAP shall include:

1. A discussion of applicable laws and penalties under the law.
2. Good quality photographs or physical examples of fossils expected to be found in units of high palaeontologic potential at, or near, the project site.
3. Information that the PRS and PRM have the authority to stop or redirect construction in the event of a discovery or unanticipated impact on a paleontological resource.
4. Instruction that employees are to stop or redirect work in the vicinity of a find and to contact their supervisor and the PRS or PRM.
5. An informational brochure that identifies reporting procedures in the event of a discovery.
6. A WEAP certification of completion form signed by each worker indicating that they have received the training.
7. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

The project owner shall submit the training script and, if the project owner is planning to use a video for training, a copy of the training video, with the set of reporting procedures for workers to follow that shall be used to present the WEAP and qualify workers to conduct ground disturbing activities that could impact paleontological resources.

Verification: At least 30 days prior to ground disturbance, the project owner shall submit the draft WEAP, including the brochure and sticker, to the CPM for review and comments. The submittal shall also include a draft training script and the set of reporting procedures for workers to follow.

At least 15 days prior to ground disturbance, the project owner shall submit to the CPM for approval the final WEAP and training script. If the project owner is planning to use a video for training, a copy of the training video shall be submitted following final approval of the WEAP and training script.

PAL-5 No worker shall excavate or perform any ground disturbing activity prior to receiving CPM-approved WEAP training by the PRS, unless specifically approved by the CPM.

Prior to project ground disturbance, the following workers shall be WEAP trained by the PRS in-person: project managers, construction supervisors, foremen, and all general workers involved with or who operate ground-disturbing equipment or tools. Following the start of ground disturbing activities and after the initial WEAP

training conducted prior to ground disturbance, a CPM- approved video or in-person training may be used for new employees. If a video is used, a qualified trainer shall be present to monitor training and respond to questions.

The training program may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or other areas of interest or concern. A WEAP certification of completion form shall be used to document who has received the required training.

Verification: In the Monthly Compliance Report (MCR), the project owner shall provide copies of the WEAP certification of completion forms with the names of those trained, trainer identification, and type of training (in-person and/or video) offered that month. The MCR shall also include a running total of all persons who have completed the training to date.

The resume and qualifications of the trainer shall be submitted to the CPM for review and approval prior to providing WEAP training.

If the project owner requests an alternate paleontological WEAP trainer, the resume and qualifications of the trainer shall be submitted to the CPM for review and approval prior to installation of an alternate trainer. Alternate trainers shall not conduct WEAP training prior to CPM authorization.

PAL-6 The project owner shall ensure that the PRS and PRM(s) monitor, consistent with the PRMMP, all construction-related grading and excavation in areas where potential fossil-bearing materials were identified, both at the site and along any constructed linear facilities associated with the project. If the PRS determines full-time monitoring is not necessary in locations that were identified as potentially fossil bearing in the PRMMP, the project owner shall notify and seek the concurrence with the CPM.

The project owner shall ensure that the PRS and PRM(s) have the authority to stop or redirect construction if paleontological resources are encountered. The project owner shall ensure that there is no interference with monitoring activities unless directed by the PRS. Monitoring activities shall be conducted as follows:

Any change of monitoring from the accepted schedule in the PRMMP shall be proposed in a letter or email from the PRS and the project owner to the CPM prior to the change in monitoring and be included in the MCR. The letter or email shall include the justification for the change in monitoring and be submitted to the CPM for review and approval.

The project owner shall ensure that the PRM(s) keep a daily monitoring log of paleontological resource activities; copies of these logs shall be submitted with the MCR. The name and contact information of the PRS and PRM(s) who were making field observations shall be included in the daily log. The PRS may

informally discuss paleontological resource monitoring and mitigation activities with the CPM at any time.

The project owner shall ensure that the PRS notifies the CPM within 24 hours of the occurrence of any incidents of non-compliance with any paleontological resources COCs. The PRS shall recommend corrective action to resolve the issues or achieve compliance with the COCs.

For any significant paleontological resources encountered, either the project owner or the PRS shall notify the CPM within 24 hours. If the resources are encountered on a weekend or holiday, notification shall occur on the morning of the next business day. In the event construction has been stopped because of a paleontological find, such notification shall be provided as soon as practical, but not later than 24 hours after a stop work order has been issued.

For excavations planned in material that is classified as having a moderate to high paleontological potential prior to construction additional precautions may be required. Should excavation methods be proposed that would preclude effective monitoring and examination of paleontological resources encountered during excavation, appropriate mitigation involving education of the public about the lost resources shall be proposed in the PRMMP.

The project owner shall ensure that the PRS prepares a summary of monitoring and other paleontological activities to be included in each MCR. The summary shall include the name(s) of the PRS or PRM(s) active during the month, general descriptions of training and monitored construction activities, and general locations of excavations, grading, and other activities. A section of the report shall include the geologic units or subunits encountered, descriptions of samplings within each unit, and a list of identified fossils.

Negative findings, when no fossils are identified, shall also be reported. A final section of the report shall address any issues or concerns about the project relating to palaeontologic monitoring, including any incidents of non-compliance or any changes to the CPM-approved monitoring plan. If no monitoring took place during the month, the report shall include an explanation in the summary as to why monitoring was not conducted.

Verification: A copy of the daily monitoring log of paleontological resource activities shall be included in the MCR.

The project owner shall ensure that the PRS submits the summary of monitoring and paleontological activities in the MCR. When feasible, the CPM shall be notified 15 days in advance of any proposed changes in monitoring different from that identified in the PRMMP, which require concurrence between the PRS and CPM. If there is any unforeseen change in monitoring, the notice shall be given as soon as possible prior to implementation of the change.

PAL-7 The project owner shall ensure preparation of a paleontological resources report (PRR) by the designated PRS. The PRR shall be prepared following the completion of ground-disturbing activities. The PRR shall include an analysis of the collected fossil materials and related information and shall be submitted to the CPM for approval.

The report shall include, but not be limited to, a description and inventory of recovered fossil materials, a map showing the location of paleontological resources encountered and the PRS's description of sensitivity and significance of those resources, and notes regarding if and how the fossil material was curated in accordance with **PAL-3**.

Any portions of this report that involve any independent judgment or analysis of the earth's crust, and the rocks and other materials which compose it, must be done by or under the responsible charge of a California licensed Professional Geologist.

Verification: Within 90 days after completion of ground-disturbing activities, including landscaping, the project owner shall submit the PRR under confidential cover to the CPM for review and approval.

PAL-8 The project owner, through the designated PRS, shall ensure that all components of the PRMMP are adequately performed, including collection of fossil material, preparation of fossil material for analysis, analysis of fossils, identification and inventory of fossils, preparation of fossils for curation, and delivery for curation of all significant paleontological resource materials encountered and collected during project construction. The project owner shall pay all curation fees charged by the museum for fossil material collected and curated because of paleontological mitigation. The project owner shall also provide the curator with documentation showing the project owner irrevocably and unconditionally donates, gives, and assigns permanent, absolute, and unconditional ownership of the fossil material.

Verification: Within 60 days after the submittal of the PRR, the project owner shall submit documentation to the CPM identifying the entity that would be responsible for curating collected specimens. This documentation shall also show that fees were paid for curation and the owner relinquished control and ownership of all fossil material.

5.6.6 Mitigation Measures

During construction of project components outside the CEC's Opt-In Certification, the following mitigation measures can and should be adopted by the agency with permitting authority over those components consistent with California Code of Regulations title 14, section 15091(a)(2): **MM PAL-1** through **MM PAL-8** and **MM WATER-1**, which is described in **Section 5.16, Water Resources**.

MM PAL-1 The project owner shall retain a qualified paleontological resource specialist (PRS). The PRS's resume shall demonstrate appropriate education and experience to accomplish the required paleontological resource tasks. The PRS's resume shall also include the names and phone numbers of references that can be contacted to verify information.

The PRS shall meet the minimum qualifications for a Qualified Professional Paleontologist as defined in the Society of Vertebrate Paleontology's Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (SVP 2010). The qualifications of the PRS shall include the following:

1. A graduate degree in paleontology or geology, and/or a publication record in peer reviewed journals; and demonstrated competence in field techniques, preparation, identification, curation, and reporting in the state or geologic province in which the project occurs. An advanced degree is less important than demonstrated competence and regional experience.
2. At least three years of paleontological resource mitigation and field experience in California and at least one year of experience leading paleontological resource mitigation and field activities.
3. Proficiency in recognizing fossils in the field and determining their significance.
4. Expertise in local geology, stratigraphy, and biostratigraphy.
5. Experience collecting vertebrate fossils in the field.

The project owner shall ensure that the PRS obtains qualified paleontological resource monitors (PRMs) to monitor as he or she deems necessary on the project. PRMs shall have the equivalent of the following qualifications:

1. B.S. or B.A. degree in geology or paleontology and a minimum of one year of relevant paleontological resource monitoring experience in California; or
2. A.S. or A.A. in geology, paleontology, or biology and a minimum of four years of relevant paleontological resource monitoring experience in California; or
3. Enrollment in upper division classes pursuing a bachelor's degree or a more advanced degree in the field of geology or paleontology and a minimum of three years of relevant paleontological resource monitoring experience in California; and
4. Demonstrated proficiency in recognizing various types of fossils, in collection methods, and in other paleontological field techniques.

If the approved PRS is replaced prior to completion of project mitigation and submittal of the paleontological resources report (PRR), the project owner shall obtain a replacement PRS. The project owner shall keep resumes on file for the qualified PRSs and PRMs.

The PRM's resume shall include the names and contact information of references.

MM PAL-2 The project owner shall provide the PRS, for review and approval, maps and drawings showing the project footprint, including construction laydown areas and all related facilities. Maps shall identify all areas of the project where ground disturbance is anticipated. If the PRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the PRS. The site grading plan and the plan and profile drawings for the utility lines would be acceptable for this purpose. The plan drawings must show the location, depth, and extent of all ground disturbances and be at a scale between 1 inch = 40 feet (1:480) and 1 inch = 100 feet (1:1,200). If the footprint of the project or its linear facilities change, the project owner shall provide maps and drawings reflecting those changes to the PRS.

If construction of the project proceeds in phases, maps and drawings may be submitted prior to the start of each phase. A letter identifying the proposed schedule of each project phase shall be provided to the PRS. Before work commences on affected phases, the project owner shall notify the PRS of any construction phase scheduling changes.

At a minimum, the project owner shall ensure that the PRS or PRM consults weekly with the project superintendent and construction field manager to confirm area(s) to be worked the following week, until ground disturbance is completed.

MM PAL-3 The project owner shall ensure that the PRS prepares a Paleontological Resources Monitoring and Mitigation Plan (PRMMP). The PRMMP shall function as the formal guide for monitoring, collecting, sampling, and reporting activities. The PRMMP shall be used as the basis of discussion when on-site decisions or changes are proposed. Copies of the PRMMP shall include all updates and reside with the PRS, each PRM, and the project's on-site manager.

The PRMMP shall be developed in accordance with the Society of Vertebrate Paleontology's Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (SVP 2010). The PRMMP shall include, but not be limited to, the following:

1. Procedures for, and assurance, that those procedures would be followed in the performance and sequence of project-related tasks, such as any literature searches, pre-construction surveys, worker environmental training, field work, flagging or staking, construction monitoring, mapping and data recovery, fossil preparation and collection, identification and inventory, preparation of final reports, and transmittal of materials for curation.
2. Identification of the person(s) expected to assist with each of the tasks required by the PRMMP and these MMs.

3. A thorough discussion of the geologic units expected to be encountered, the location and depth of the units relative to the project when known, and the known sensitivity of those units based on the occurrence of fossils either in that unit or in correlative units.
4. An explanation of why sampling is needed, a description of the sampling methodology, and how much sampling is expected to take place and in which geologic units. This shall include descriptions of the sampling procedures that shall be used for fine-grained and coarse-grained units.
5. A discussion of the locations where monitoring of project construction activities is deemed necessary, and a proposed plan for monitoring and sampling at these locations.
6. A discussion of procedures to be followed: (a) in the event of a significant fossil discovery, (b) stopping construction, (c) resuming construction, and how notifications shall be performed.
7. A discussion of equipment and supplies necessary for collection of fossil materials and any specialized equipment needed to prepare, remove, load, transport, and analyze large-sized fossils or extensive fossil deposits.
8. Procedures to inventory, prepare, and deliver fossil materials for curation in a retrievable storage collection at a public repository or museum that meet the Society of Vertebrate Paleontology's standards and requirements for the curation of paleontological resources.
9. Identification of the institution that has agreed to receive data and fossil materials collected, requirements or specifications for materials delivered for curation and how they shall be met, and the name and phone number of the contact person at the institution.
10. A copy of the paleontological resources MMs.
11. A copy of the daily monitoring log form.

MM PAL-4 Prior to ground disturbance the project owner and the PRS shall prepare a Worker Environmental Awareness Program (WEAP).

The WEAP shall address the possibility of encountering paleontological resources in the field, the sensitivity and importance of these resources, and legal obligations to preserve and protect those resources. The purpose of the WEAP is to train project workers to recognize palaeontologic resources and identify procedures they must follow to ensure there are no impacts to sensitive palaeontologic resources.

The WEAP shall include:

1. A discussion of applicable laws and penalties under the law.

2. Good quality photographs or physical examples of fossils expected to be found in units of high palaeontologic potential at, or near, the project site.
3. Information that the PRS and PRM have the authority to stop or redirect construction in the event of a discovery or unanticipated impact on a paleontological resource.
4. Instruction that employees are to stop or redirect work in the vicinity of a find and to contact their supervisor and the PRS or PRM.
5. An informational brochure that identifies reporting procedures in the event of a discovery.
6. A WEAP certification of completion form signed by each worker indicating that they have received the training.
7. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

The project owner shall prepare and retain the training script and, if the project owner is planning to use a video for training, a copy of the training video, with the set of reporting procedures for workers to follow that shall be used to present the WEAP and qualify workers to conduct ground disturbing activities that could impact paleontological resources.

MM PAL-5 No worker shall excavate or perform any ground disturbing activity prior to receiving WEAP training by the PRS.

Prior to project ground disturbance, the following workers shall be WEAP trained by the PRS in-person: project managers, construction supervisors, foremen, and all general workers involved with or who operate ground-disturbing equipment or tools. Following the start of ground disturbing activities and after the initial WEAP training conducted prior to ground disturbance, a video or in-person training may be used for new employees. If a video is used, a qualified trainer shall be present to monitor training and respond to questions.

The training program may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or other areas of interest or concern. A WEAP certification of completion form shall be used to document who has received the required training.

MM PAL-6 The project owner shall ensure that the PRS and PRM(s) monitor, consistent with the PRMMP, all construction-related grading and excavation in areas where potential fossil-bearing materials were identified, both at the site and along any constructed linear facilities associated with the project. If the PRS determines full-time monitoring is not necessary in locations that were identified as potentially fossil bearing in the PRMMP, PRS may notify the project owner.

The project owner shall ensure that the PRS and PRM(s) have the authority to stop or redirect construction if paleontological resources are encountered. The project owner shall ensure that there is no interference with monitoring activities unless directed by the PRS. Monitoring activities shall be conducted as follows:

Any change of monitoring from the accepted schedule in the PRMMP shall be proposed in a letter or email from the PRS to the project owner prior to the change in monitoring. The letter or email shall include the justification for the change in monitoring.

The project owner shall ensure that the PRM(s) keep a daily monitoring log of paleontological resource activities. The name and contact information of the PRS and PRM(s) who were making field observations shall be included in the daily log. The PRS may informally discuss paleontological resource monitoring and mitigation activities with the project owner at any time.

For any significant paleontological resources encountered, either the PRS shall notify the project owner within 24 hours. If the resources are encountered on a weekend or holiday, notification shall occur on the morning of the next business day. In the event construction has been stopped because of a paleontological find, such notification shall be provided as soon as practical, but not later than 24 hours after a stop work order has been issued.

For excavations planned in material that is classified as having a moderate to high paleontological potential prior to construction additional precautions may be required. Should excavation methods be proposed that would preclude effective monitoring and examination of paleontological resources encountered during excavation, appropriate mitigation involving education of the public about the lost resources shall be proposed in the PRMMP.

The project owner shall ensure that the PRS prepares a monthly summary of monitoring and other paleontological activities. The summary shall include the name(s) of the PRS or PRM(s) active during the month, general descriptions of training and monitored construction activities, and general locations of excavations, grading, and other activities. A section of the report shall include the geologic units or subunits encountered, descriptions of samplings within each unit, and a list of identified fossils.

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The report shall include, but not be limited to, a description and inventory of recovered fossil materials, a map showing the location of paleontological resources encountered and the PRS's description of sensitivity and significance of those resources, and notes regarding if and how the fossil material was curated in accordance with **MM PAL-3**.

Any portions of this report that involve any independent judgment or analysis of the earth's crust, and the rocks and other materials which compose it, must be done by or under the responsible charge of a California licensed Professional Geologist.

MM PAL-8 The project owner, through the designated PRS, shall ensure that all components of the PRMMP are adequately performed, including collection of fossil material, preparation of fossil material for analysis, analysis of fossils, identification and inventory of fossils, preparation of fossils for curation, and delivery for curation of all significant paleontological resource materials encountered and collected during project construction. The project owner shall pay all curation fees charged by the museum for fossil material collected and curated because of paleontological mitigation. The project owner shall also provide the curator with documentation showing the project owner irrevocably and unconditionally donates, gives, and assigns permanent, absolute, and unconditional ownership of the fossil material.

5.6.7 References

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5.7 Hazards, Hazardous Materials/Waste, and Wildfire

5.7.1 Environmental Setting

Existing Conditions

This section discusses the environmental setting and regulatory background associated with the construction and operation of the project with respect to hazards and hazardous materials/waste and wildfire.

The proposed project would be on approximately 70 acres in eastern Alameda County. Land uses in the immediate vicinity of the project include undeveloped rural agricultural lands, multiple high-voltage transmission lines, the PG&E Tesla Substation, rural roads, and a railroad line. The nearest municipality to the project site is the City of Tracy approximately 2.5 miles to the northeast. There are a few single-family residences near the Tesla Substation's southern and eastern boundaries. The nearest residence is about 1,500 feet southeast of the project site and 560 feet south of the proposed gen-tie line (AMLGMN 2024o). See **Section 2, Introduction**, for a complete description of the project components within the California Energy Commission's (CEC's) Opt-In certification and project components outside the CEC's Opt-In certification.

Hazardous Materials

Hazard Exposure

A hazardous material exposure route is the way a contaminant enters an individual or population. Typically, hazardous material exposure occurs by one of the three exposure routes: inhalation, ingestion, or dermal (U.S. EPA 2024).

Hazardous Materials

Hazardous materials are defined by federal and state law that aim to protect public health and the environment. Hazardous materials have certain chemical, physical, or infectious properties that cause them to be considered hazardous. For purposes of this section, the term "hazardous materials" refers to both hazardous substances and hazardous wastes. Under federal and state laws, any material, including wastes, may be considered hazardous if it is specifically listed by statute as such or if it is toxic (causes adverse human health effects), ignitable (has the ability to burn), corrosive (causes severe burns or damage to materials), or reactive (causes explosions or generates toxic gases). Hazardous substances are defined in the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 101(14) by reference to lists of substances designated under specific authorities. Hazardous materials are defined in the Health and Safety Code section 25501(n)(1) to include substances listed in 25501(n)(2)(A-E). California Code of Regulations, Title 22, Chapter 11 provides procedures for the identification and listing of hazardous wastes.

The project would involve limited transport, storage, use, and disposal of hazardous materials typically used for industrial facilities during construction, operation and maintenance, and decommissioning activities. Some examples of hazardous materials that may be used during construction, operation and maintenance, and decommissioning activities would include unleaded gasoline, diesel fuel, oil, lubricants (for example, motor oil, transmission fluid, and hydraulic fluid), solvents, adhesives, paint materials, and lithium-ion batteries. Operation and maintenance of the project would not require as many hazardous materials as construction or decommissioning. All hazardous materials would be transported, stored, handled, and used in accordance with applicable laws, ordinances, regulations, and standards (LORS). A summary of hazardous materials that could be used for the proposed project during construction, operation and maintenance is presented in **Table 5.7-1 Hazardous Materials Use During Construction and Operation.**

TABLE 5.7-1 HAZARDOUS MATERIALS USE DURING CONSTRUCTION AND OPERATION

Hazardous Material	Uses	Typical Quantities	Toxicity
Diesel /a/	Fuel for construction and transportation equipment during construction and decommissioning. Used to power an emergency generator during operation, if needed.	Over 5,000 gallons would be stored in aboveground tanks during construction and operation. The amount of diesel to be stored onsite during decommissioning is unknown at this time but is assumed be similar to that of construction. /b/	Fuel oils are liquid mixtures produced from petroleum, and their use mostly involves burning them as fuels. Drinking or breathing fuel oils may cause nausea or nervous system effects. However, exposure under normal use conditions is not likely to be harmful.
Gasoline	Some construction equipment and vehicles.	Gasoline would not be stored onsite during construction or operation.	
Lubricating oils/ grease/ hydraulic fluids/gear oils	Lubricating oil would be present in the diesel engine of the emergency generator, and in engines of construction and transportation equipment.	Limited quantities would be stored in portable containers (capacity of 55 gallons or less) and maintained onsite during all phases of the project. Containers would be double lined and stored within secondary containment.	Exposure to hydraulic fluids occurs mainly in the workplace Some hydraulic fluids have a bland, oily smell and others have no smell; some are flammable and some are not. Ingesting large amounts of some types of hydraulic fluids can cause pneumonia.
Glycol-based antifreeze	Used in the diesel engine for the emergency generator.	Limited quantities (10 to 20 gallons of concentrate) would be stored onsite during each phase of the project.	Ethylene glycol is a clear liquid used in antifreeze and de-icing solutions. Exposure to large amounts of ethylene glycol can damage the kidneys, nervous system, lungs, and heart.
Lead-acid storage batteries and electrolyte solution	Present in construction and transportation equipment. Backup power source for control equipment.	Limited quantities of electrolyte solution (<20 gallons) for maintenance of construction and transportation equipment during construction and decommissioning.	The electrolyte solution in lead acid batteries contains sulfuric acid, which is highly corrosive and can cause severe chemical burns to the skin and can damage the eyes. The solution is also poisonous if ingested. In addition, overcharging a lead acid battery can produce hydrogen sulfide gas. The gas is heavier than air and will accumulate at the bottom of poorly ventilated spaces.

TABLE 5.7-1 HAZARDOUS MATERIALS USE DURING CONSTRUCTION AND OPERATION

Hazardous Material	Uses	Typical Quantities	Toxicity
Lithium-ion batteries	Used for project operations	Approximately 10,000 tons depending on battery selected /c/	Batteries commonly contain materials such as lithium, cobalt, nickel, manganese, and titanium, as well as graphite and a flammable electrolyte. Under normal usage conditions, they do not exhaust vapors. In normal usage, cell electrolyte should not be encountered by anyone handling a battery, making the risk of a spill of electrolyte from any commercial battery pack very remote. Furthermore, in most commercial cells, the electrolyte is largely absorbed in electrodes, such that there is no free or "spillable" electrolyte within individual sealed cells. In those instances, severe mechanical damage (e.g., severe crushing) can cause a small fraction of total electrolyte quantity to leak out of a single cell; however, any released electrolyte is likely to evaporate rapidly.
Cleaning solvents	Organic solvents would be used for equipment cleaning and maintenance when water-based cleaning and degreasing solvents cannot be used.	Limited quantities or organic solvents (<55 gallons) would be stored onsite during construction and decommissioning to maintain construction and transportation equipment. Limited quantities (<10 gallons) of water-based cleaning solvents would be stored onsite during operation.	Exposure to solvents and other organic liquids is one of the most common chemical health risks at places of work. Most of the organic solvents are combustible, often highly volatile and extremely flammable and they should always be handled with care. Some solvents produce vapors which are heavier than air. These may move on the floor or ground to a distant ignition source, such as a spark from welding or caused by static electricity. The vapors may also explode from smoking. Vapors of solvents can also accumulate in confined places and stay there for a long time, presenting risks for health and

TABLE 5.7-1 HAZARDOUS MATERIALS USE DURING CONSTRUCTION AND OPERATION

Hazardous Material	Uses	Typical Quantities	Toxicity
			property. Solvents enter the body by inhalation, by swallowing and through the skin. The effect depends on several factors.
Dielectric fluids (i.e., Mineral Oil) /d/	Used in electrical transformers and other electric power management devices as an electrical insulator.	Some transformers may contain more than 500 gallons of dielectric fluid. Onsite transformers each contain approximately 10,000 gallons of mineral oil.	Dielectric fluids such as mineral oil may cause allergic reactions. Primary Routes of Entry: Eye and skin contact, inhalation; Target Organs: Eyes, skin, respiratory tract; Persons with preexisting skin and respiratory conditions may be more susceptible to the effects of this product. Mineral oil is not listed in the National Toxicology Program (NTP) Annual Report on Carcinogens and not listed as OSHA carcinogens.
Herbicides that contain glyphosate	May be used for vegetation control around facilities for fire safety.	If deemed necessary, herbicides would be brought to the site and applied by a licensed applicator.	If a large amount is swallowed, glyphosate can cause nausea and vomiting. It can be very irritating if it is left on your skin or eyes. Glyphosate has been associated with respiratory effects (lung and nose), such as irritation in the nose, or asthma, in people using glyphosate products. Workers that use large amounts of glyphosate products for long periods of time may be more likely to develop respiratory effects. Studies in animals have shown that glyphosate can cause developmental effects (such as lower body weight and problems with bone and organ growth) when the pregnant animals were given very large amounts of glyphosate.

Notes:
/a/ Diesel fuel would be replenished onsite by commercial vendors, as necessary.
/b/ These values represent the total onsite storage capacity, not the total amount of fuel which would be consumed during project construction.
/c/ No quantity was provided in the application. Estimate was provided by CEC staff.

/d/ It is assumed that the majority of transformers and other electrical devices that rely on dielectric fluids would have those fluids added during fabrication and would not require dielectric fluid to be added onsite. It is assumed that servicing of electrical devices that involves wholesale removal and replacement of dielectric fluids would not occur onsite and that equipment requiring such servicing would be removed from the site and replaced. New transformers or electrical devices are expected to contain mineral oil based, or synthetic dielectric fluids that are free of polychlorinated biphenyls. Some equipment may instead contain gaseous dielectric agents (e.g., sulfur hexafluoride) rather than liquid dielectric fluids.
Sources: (AMLGMN 2024k)

Environmental Contamination

Existing and past land use activities are commonly used as indicators of sites or areas where hazardous material storage and use may have occurred or where potential environmental contamination may exist. For example, many historic and current industrial sites have soil and/or groundwater contaminated by hazardous substances. Environmental contamination sources can include on-site leaking underground tanks in commercial and rural areas, historic pesticide use, contaminated surface runoff from polluted sites, and contaminated groundwater plumes migrating from off-site locations.

In August 2023, Tetra Tech, Inc. (Tetra Tech) completed a Phase I Environmental Site Assessment (ESA) report of the property on approximately 68.2 acres, on behalf of Levy Alameda, LLC, the project applicant. The Phase I ESA was conducted consistent with the requirements of ASTM International (ASTM) Designation E1527-21 and Title 40 of the Code of Federal Regulations, Part 312, except as may have been modified by the scope of work, and terms and conditions, requested by the project owner. The Phase I added scope items to the standard Phase I, including limited visual inspection of asbestos containing materials (ACM), lead-based paint (LBP), lead-containing materials (LCM) and mold. While these items were in the scope of the Phase I, there were no existing structures or buildings at the Subject Property and the conclusion of the Phase I was that there are no environmental concerns for ACMs, LBPs, or LCMs at the Subject Property (AMLGMN 2024pp).

The Phase I ESA reviewed records from regulatory agencies with jurisdiction over the project site including the California Regional Water Quality Control Board – Central Valley Region (CVRWQCB), the California Environmental Protection Agency (CAL-EPA), Department of Toxic Substances Control (DTSC). The Phase I ESA did not identify any known hazardous material or environmental contamination sites within or adjacent to the project site. The Phase I ESA identified the following information:

- No buildings or structures are located on the subject property. No stressed vegetation, areas of staining, or other evidence of hazardous substance releases were observed at the subject property.
- Historical agricultural use is known to have occurred at the project site from at least 1940 to 1958 and is considered to be a business environmental risk (BER).
- Historical agricultural activities at the site may have been subject to the application of pesticides and herbicides, which potentially could have contained a number of hazardous substances. Only soil sampling could verify if elevated concentrations of pesticide-or herbicide-related hazardous substances would remain in site soils.

In addition to the Phase I, four soil samples were collected (to evaluate BER) in December 2024 and tested for contaminants by Tetra Tech, the applicant's hazardous materials consultant. The results were summarized as follows (Dudek 2024a, pg. 3):

- Organochlorine pesticides were not detected in any of the soil samples.

- Low levels of four chlorinated herbicides (2,4,5-T, 2, 5, 5-TP, Dicamba, and Dichlorprop) were detected in three of the four soil samples. All of the detected concentrations were more than 5 orders of magnitude lower than the human health-based screening levels, where listed.
- The concentrations of CAM 17 metals other than arsenic were less than human health screening levels.
- Arsenic concentrations were less than the DTSC background value of 12 mg/kg (DTSC 2020).
- The detected concentrations of herbicides and metals in soil are not considered to be a health concern for commercial/industrial or construction workers.
- All results are well below California hazardous waste criteria, suggesting that soils exported from the Subject Property during construction would not require special handling or disposal.
- Based on the results of the soil sampling, historical agricultural use of the Subject Property from at least 1940 to 1958 is no longer considered to be a business environmental risk.

Based on the soil sampling results, no further work was recommended by Tetra Tech at this time.

Hazardous Waste and Substance Sites

CEC staff reviewed the State Water Resources Control Board (SWRCB) Geotracker (SWRCB 2025) and the DTSC EnviroStor (DTSC 2025) websites, which did not identify any known hazardous material or environmental contamination sites within or close enough to affect the project site.

Land Use and Sensitive Receptors

Land use in the immediate vicinity of the project site is primarily undeveloped current or former agricultural land with some residential properties. No sensitive receptors, including schools, hospitals, day-care facilities, emergency response facilities and long-term health care facilities are within a 1-mile radius of the project site. The nearest city is Tracy, approximately 2.5 miles to the east.

Airports

There are no private airstrips within the vicinity of the project site. The closest airport to the project site is the Tracy Municipal Airport, approximately 7.5 miles east of the site.

Schools

There are no schools within 0.25 mile of the project site. The nearest schools to the project site are Mountain House High School, approximately 2.5 miles northwest of the project site, and Hansen Elementary School, approximately 3.4 miles northwest of the project site.

Emergency Evacuation Routes

The primary roadway providing access to and from the project site is Patterson Pass Road, a two-lane rural roadway that extends east-west through the region. This roadway would serve as the main ingress/egress for workers, emergency personnel, and potential evacuation, if needed. No additional public roads are located in the immediate vicinity of the project site.

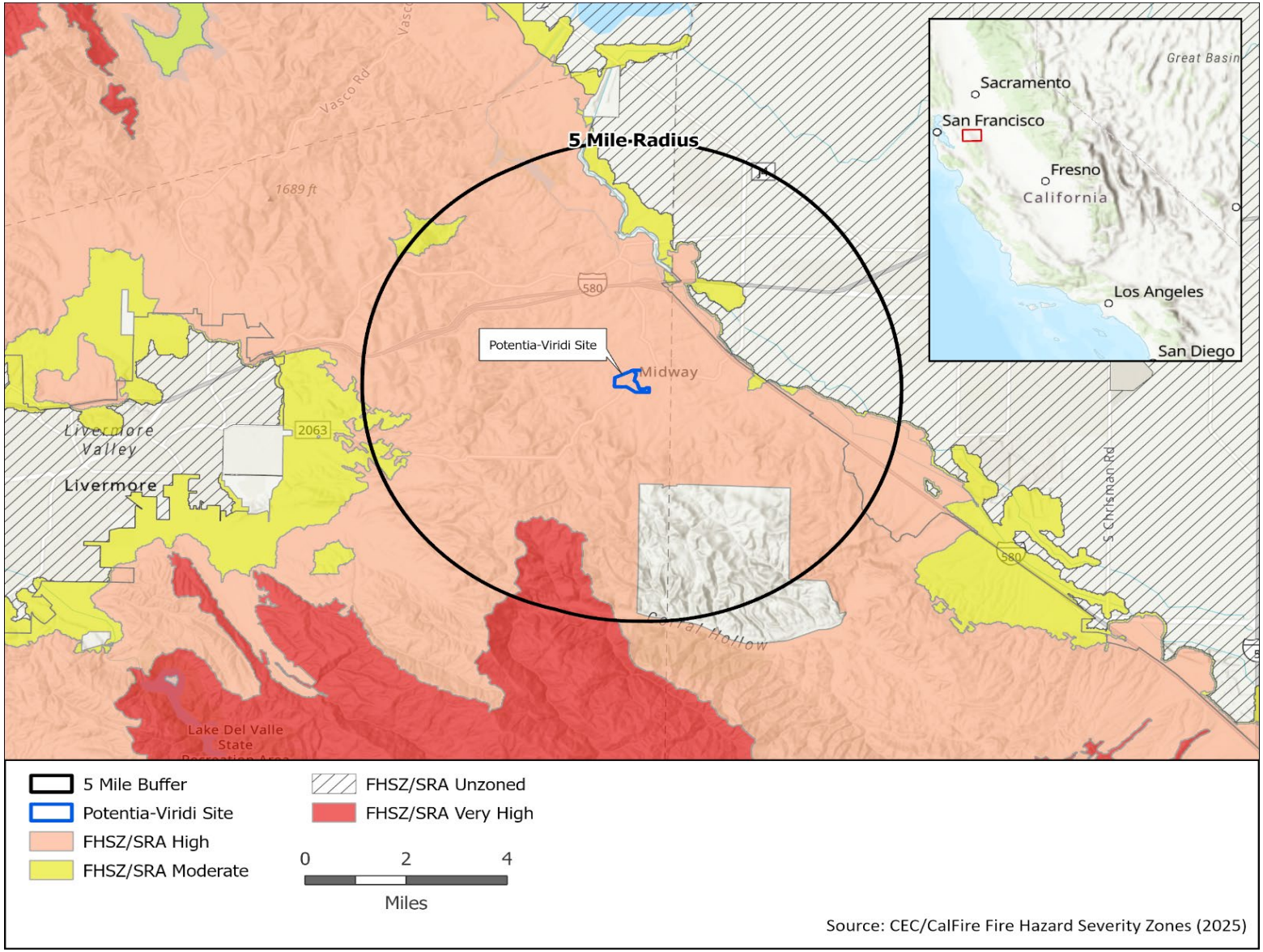
Wildfire

CAL FIRE Hazard Severity Zones

The Department of Forestry and Fire Protection (CAL FIRE) identifies and maps areas of significant fire hazards based on fuels, terrain, and other relevant factors. These maps categorize this information by Fire Hazard Severity Zones (FHSZ), grouped into unzoned, moderate, high, and very high zones (CAL FIRE 2025a).

Wildland FHSZ in California are divided into State, local, or federal government responsibility areas. The project would be located in a State Responsibility Area where the state of California is responsible for wildfire protection. The State adopted updated FHSZ maps covering Alameda County on February 24, 2025. **Figure 5.7-1** shows the project site on the FHSZ map and shows that the project is in an area classified as a High Fire Hazard Severity Zone. (CAL FIRE 2025a).

Figure 5.7-1 Fire Hazard Severity Zone Map



California Public Utilities Commission (CPUC) High Fire-Threat District Map

Over the last two decades the CPUC has adopted a series of fire safety rules which includes the preparation of Fire-Threat and High Fire-Threat District (HFTD) Maps and the identification, evaluation, and adoption of more fire-safety regulations for the HFTDs. Areas mapped as high fire threat are required (under CPUC General Orders 95 165, and 166) to have increased patrols along overhead lines, increased vegetation clearances and frequency of vegetation clearance, increased inspections of aerial communications facilities, and increased maintenance and repairs to correct fire hazards. The HFTD maps identify three tiers of fire threat/risk: Tier 1 zones near communities, roads, and utility lines, and are a direct threat to public safety; Tier 2 fire-threat areas outline areas where there is a higher risk (including likelihood and potential impacts on people and property) from utility related wildfires; and Tier 3 fire-threat areas outline areas where there is an extreme risk (including likelihood and potential impacts on people and property) from utility related wildfires. The project is not within a HFTD zone and not adjacent to any HFTD zone (CPUC 2025).

Fire History

The Fire and Resource Assessment Program (FRAP) annually maintains and distributes an historical fire perimeter data set from across public and private lands in California. The GIS data is jointly developed with the cooperation of the United States Forest Service Region 5, the Bureau of Land Management, the National Park Service and the Fish and Wildlife Service.

Nearby wildfires from the FRAP database are shown on **Figure 5.7-2**. The figure shows that fires are most common on the southern side of the project site. Within a 5-mile radius of the project site, 65 recorded fires have burned within a 5-mile radius of the project (CAL FIRE 2025b). Some additional smaller fires may have burned but not been recorded (AMLGMN 2024bb). **Figure 5.7-2** shows the FRAP historic fires within 5 miles of the project site. The darker colors on **Figure 5.7-2** are areas that have burned three or more times since 1950.

The closest fires are summarized below.

- Southeast of the project site, two of these fires have burned onto the project site: the 2024 Patterson Fire, which burned for 95 acres, and the 1952 Fulqueeny Grass Fire, which burned for 494 acres. This part of the project site includes pulling areas, the Gen-Tie Centerline, an HV Structure Pad, and a Transmission Access Path.
- South of the project, the 2006 Midway Fire burned for 5,540 acres; the 2005 Tesla Fire burned for approximately 6,440 acres; the 2002 Vieux Fire burned for approximately 1,029 acres; and the 1975 W.P.R.R Fire burned for approximately 895 acres. The Midway Fire burned approximately 1300 feet from the southern border of the project. The Tesla Fire burned about 1.5 miles from the southern border of the project site. The Vieux Fire burned about 1.75 miles from the southern border of the

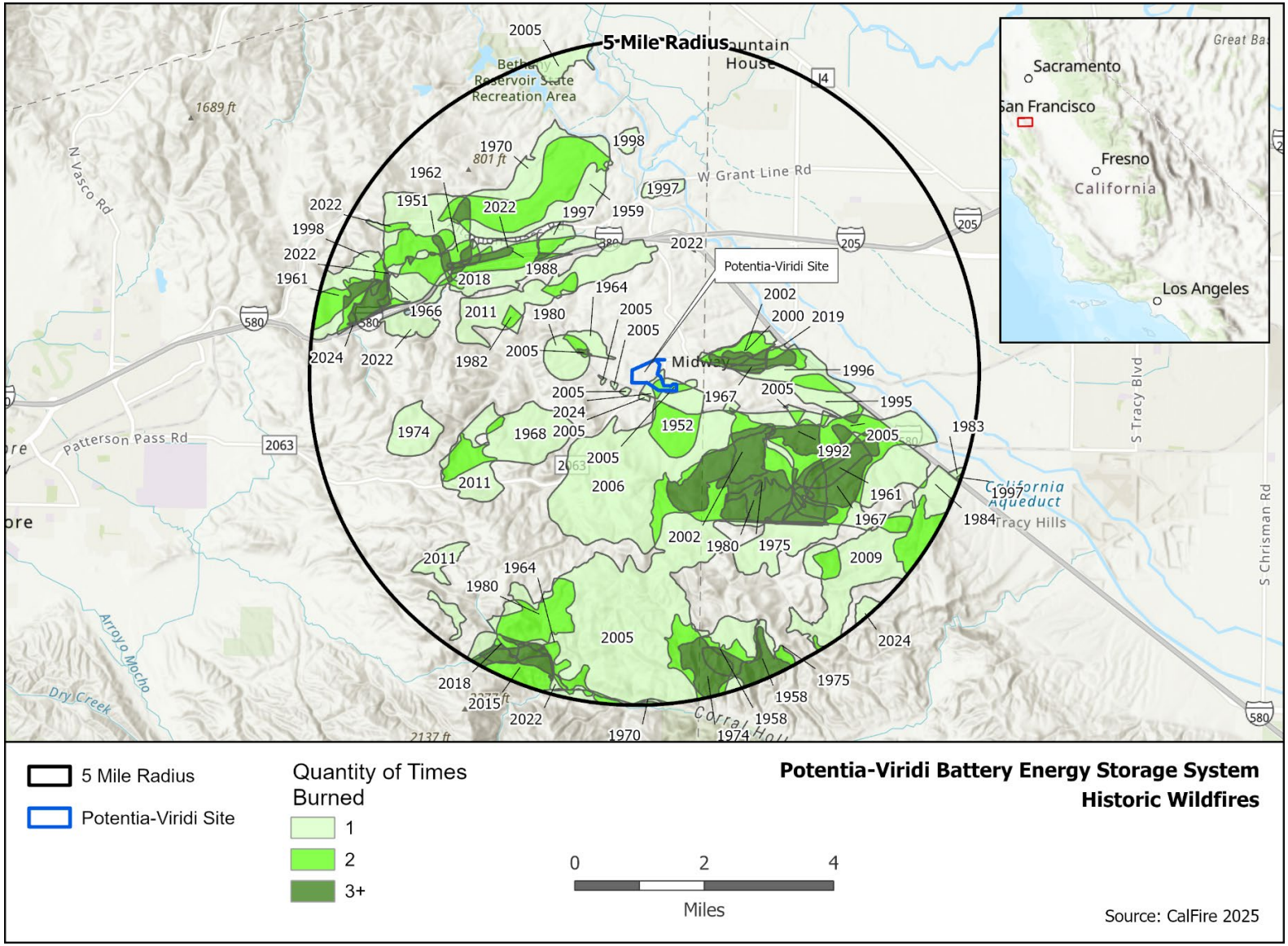
project. The W.P.R.R fire burned approximately 4500 feet from the southern border of the project.

- Northeast of the project site, the 2002 Patterson Fire burned for approximately 234 acres; the 2000 Patterson Pass #2 Fire burned for approximately 238 acres; the 1996 Patterson Fire burned for approximately 475 acres; the 1967 Vierra Fire burned for approximately 227 acres; and the 2019 Patterson Fire burned for approximately 139 acres. All of these fires occurred within an approximated mile radius of the northern border of the project site.

While multiple wildfires have occurred within 5 miles of the project site, GIS data indicates areas directly adjacent to the project site are not highly susceptible to wildfire. The laydown yards, stormwater areas, and BESS enclosures are not part of any historic burn sites, although they are approximately 250 feet from the 2024 Patterson Fire and 500 feet from the Fulqueeny Grass Fire. Areas to the south of the project site, which have more hills, have experienced more wildfire activity than the flatter area where the BESS would be located.

FRAP summarizes fire perimeter data dating to the late 1800s but is incomplete due to the fact that it only includes fires over 10 acres in size and has incomplete perimeter data, especially before the mid-20th century. However, the data does provide a summary of recorded fires and can be used to show whether large fires have occurred in the Project area, which indicates whether they may be possible in the future. Twelve fires have burned within one mile of the project site. No fires have burned onto the footprint of the BESS facility at the project site; however, one fire perimeter extended over the proposed tie-in line path and one fire perimeter extended onto the larger 232-acre property of the total project site. (AMLGMN 2024bb).

Figure 5.7-2 Historic Wildfires



Regulatory

LORS related to hazardous materials, hazardous waste, hazardous substances, aviation safety, hazards, and wildfire are summarized below. Details regarding federal, state, and local LORS that apply to the project are included. CEC staff's analysis of project consistency with these LORS is presented in **Table 5.7-2** and **Table 5.7-3**.

Federal

Resource Conservation and Recovery Act. The Resource Conservation and Recovery Act (RCRA) (42 U.S.C. § 6901 et seq.) authorizes the EPA to regulate hazardous waste from "cradle to grave" (generation, transportation, treatment, storage, and disposal). The EPA approved California's RCRA program, referred to as the Hazardous Waste Management Program (Hazardous Waste Control Law, Health and Safety Code § 25100 et seq.) in 1992.

Toxic Substances Control Act. The Toxic Substances Control Act (TSCA) (15 U.S.C. § 2601 et seq.) authorizes the EPA to require reporting, record-keeping, testing requirements, and restrictions related to chemical substances and/or mixtures. It also addresses production, importation, use, and disposal of specific chemicals, such as poly-chlorinated biphenyls (PCBs), asbestos-containing materials, lead-based paint, and petroleum.

Comprehensive Environmental Response, Compensation, and Liability Act. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S.C. § 9601 et seq.), including the Superfund program, provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment.

Department of Transportation. The United States Department of Transportation (DOT) is the primary federal agency responsible for regulating the proper handling and storage of hazardous materials during transportation (49 CFR §§ 171-177 and 350-399).

Clean Water Act. The Clean Water Act (CWA) is the principal federal statute protecting navigable waters and adjoining shorelines from pollution. The law was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. Since its enactment, the CWA has formed the foundation for regulations detailing specific requirements for pollution prevention and response measures. The EPA implements provisions of the CWA through a variety of regulations, including the National Contingency Plan, and the Oil Pollution and Prevention Regulations. Implementation of the CWA is the responsibility of each state.

As part of the CWA, the U.S. EPA oversees and enforces the Oil Pollution Prevention regulation (Title 40, CFR, Part 112), which is often referred to as the Spill Prevention Control, and Countermeasure (SPCC) "SPCC rule" because the regulations describe the

requirements for facilities to prepare, amend, and implement SPCC Plans. A facility is subject to SPCC regulations if the total above ground oil storage capacity exceeds 1,320 gallons, or the underground oil storage capacity exceeds 42,000 gallons, and if, due to its location, the facility could reasonably be expected to discharge oil into or upon the "navigable waters" of the United States. The rule specifies that proactive, and not passive, measures be used to respond to oil discharges.

Federal Aviation Administration. The Federal Aviation Administration (FAA) Part 77—Safe, Efficient Use, And Preservation of The Navigable Airspace (49 CFR Part 77) establishes standards and notification requirements for objects that may impact navigable airspace. Airports and navigable airspace that are not administered by the Department of Defense (DOD) are under the jurisdiction of the FAA. This regulation includes: (a) FAA notification requirements for proposed construction, or the alteration of existing structures, that meet specific standards; (b) the standards used to determine obstructions to air navigation, and navigational and communication facilities; (c) the process for aeronautical studies of obstruction to air navigation or navigational facilities to determine the effect on the safe and efficient use of navigable airspace, air navigation facilities or equipment; and (d) the process to petition the FAA for discretionary review of determinations, revisions, and extensions of determinations. Additionally, FAA standards and Advisory Circular 70/7460-1M generally require any temporary or permanent structure, including appurtenances, that exceeds an overall height of 200 feet above ground level (AGL) to meet the requirements to be marked and/or lighted.

Hazardous Materials Transportation Act. DOT, in conjunction with the EPA, is responsible for enforcement and implementation of federal laws and regulations pertaining to safe storage and transportation of hazardous materials under the Hazardous Materials Transportation Act (HMTA) 49 U.S.C. 5101-5128. DOT regulations implementing the Act (49 CFR parts 171-180), regulate the transportation of hazardous materials, types of material defined as hazardous, and the marking of vehicles transporting hazardous materials. This also includes regulations relevant to the storage of explosives, as well as the packaging, labeling, materials compatibility, driver qualificators, and safety of transported explosives.

State

California Environmental Protection Agency. The California Environmental Protection Agency (Cal EPA), created in 1991, unified California's environmental authority in a single cabinet-level agency and brought the California Air Resources Board (CARB), SWRCB, Regional Water Quality Control Boards (RWQCBs), Integrated Waste Management Board, DTSC, Office of Environmental Health Hazard Assessment, and Department of Pesticide Regulation under one agency.

The California Hazardous Waste Control Law. The California Hazardous Waste Control Law (HWCL) (Health and Safety Code § 25100 et seq.) and implementing regulations is the state law regulating hazardous waste in California. HWCL regulates

management of hazardous waste, from hazardous waste generation to management, transportation, and ultimately disposal of waste into a state or federally authorized facility. The HWCL, California Code of Regulations, title 22, Chapter 11, Appendix X, contains a list of 791 chemicals and 66 common names of waste. If the waste is listed or contains a listed chemical in Appendix X, it creates a presumption that the waste may be hazardous due to the presence of that chemical. The HWCL also contains requirements for identifying, managing, storing, transporting and labeling hazardous wastes; establishes permit requirements for treatment, storage, disposal and transportation; and provides land disposal restrictions for certain hazardous wastes.

Department of Toxic Substances Control. DTSC is a department of CalEPA and is the primary agency in California that administers the California Hazardous Waste Control Law, regulates hazardous waste, oversees clean-up of existing contamination, and regulates chemicals in products.

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program. The Unified Program requires CalEPA to certify local government agencies, known as Certified Unified Program Agencies (CUPAs) as able to implement all the required environmental programs and to consolidate, coordinate and make them consistent within their jurisdiction. The Unified Program includes six programs: hazardous waste generators and hazardous waste onsite treatment; underground storage tanks; aboveground storage tanks; hazardous materials release response plans and inventories; risk management and prevention programs; and Unified Fire Code hazardous materials management plans and inventories (Health and Safety Code §25404 et seq.). State partner agencies involved in the implementation of the Unified Program and providing technical assistance to CUPAs include CalEPA, CAL FIRE, DTSC, and SWRCB. The CUPA for the project area is the Hazardous Materials Division of the Alameda County Environmental Health Department.

California Department of Industrial Relations, Division of Occupational Safety and Health Administration. The California Occupational Safety and Health Administration (Cal/OSHA) is the primary agency responsible for worker safety. They oversee the handling and use of hazardous materials (Cal. Code Regs., tit. 8, Sections 5139-5223), and the protection of workers exposed to wildfire smoke (Cal. Code Regs., tit. 14, Section 5141.1). Cal/OSHA standards are generally more stringent than federal regulations. Under Sections 337-3339, employers are required to monitor worker exposure to listed hazardous substances and notify workers of exposure. The regulations under Sections 337-339 specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings. Section 5141.1 requires identification or harmful exposures, a system for communicating wildfire smoke hazards, and training and instruction about wildfire smoke hazards.

California Public Utilities Commission. The California Public Utilities Commission (CPUC) regulates private investor-owned utilities in the state of California. The following CPUC General Orders are applicable to the project.

General Order 95. CPUC General Order 95 applies to construction and reconstruction of overhead electric lines. General Order 95 includes Rules which apply to overhead electric lines located in Tier 2 or Tier 3 High Fire Threat Districts (HFTDs), which include corrective actions, maintenance, increased inspection, vegetation management to establish clearances, and establishment of minimum vertical, horizontal, and radial clearances of wires from other wires.

General Order 165. CPUC General Order 165 establishes requirements for the inspection of electric distribution and transmission facilities that are not contained within a substation. A "Patrol" inspection, defined as a simple visual inspection of utility equipment and structures that is designed to identify obvious structural problems and hazards, must be performed at least once per year for each piece of equipment and structure. "Detailed" inspections, where individual pieces of equipment and structures are carefully examined, are required every five years for all overhead conductor and cables, transformers, switching/protective devices, and regulators/capacitors. A utility subject to this General Order must submit an annual report of its inspections by July 1 of each year for the previous year.

General Order 166. General Order 166 requires that Investor-Owned Utilities (IOUs) develop a Fire Prevention Plan, which describes measures that the electric utility will implement to mitigate the threat of power line fires. Under General Order 166, the IOUs are required to outline a plan to mitigate power line fires when wind conditions exceed the structural design standards of the line during a Red Flag Warning in a high fire threat area. IOUs are also required to prepare an emergency response plan. Further, utilities are required to report annually to the CPUC regarding compliance with General Order 166.

Defensible Space and the Fire Safe Regulations. State law requires a minimum clearance (defensible space) of 100-feet around structures (Pub. Res. Code §§ 4290, 4291). Implementing regulations (the "Fire Safe Regulations") provide related requirements to be implemented in a SRA including road standards for fire equipment access (Cal. Code Regs., tit. 14, § 1273 et seq.); standards for signs identifying streets, roads, and buildings (Cal. Code Regs., tit. 14, § 1274 et seq.); requirements for minimum private water supply reserves for emergency fire use (Cal. Code Regs., tit. 14, § 1275 et seq.); and requirements for fuel breaks such as defensible space and greenbelts (Cal. Code Regs., tit. 14, §§ 1272, 1276 et seq.).

California Public Resources Code – Fire Protection. The California Public Resources Code (PRC) Division 4, Part 2 – Protection of Forest, Range, and Forage Lands includes prohibited activities, fire safety and prevention provisions that apply to SRAs, forested areas, timber harvesting areas, and high fire danger areas.

Except as provided, PRC Section 4292 requires any person that owns, controls, operates, or maintains any electrical transmission or distribution line has primary responsibility for fire protection of such areas, and to maintain around and adjacent to any pole or tower which supports a switch, fuse, transformer, lightning arrester, line

junction, or dead end or corner pole, a firebreak which consists of a clearing of not less than 10 feet in each direction from the outer circumference of such a pole or tower. PRC section 4293 also identifies for any person that owns, controls, operates, or maintains any electrical transmission or distribution line upon any mountainous land, or in forest-covered land, or grass covered land which has primary responsibility for the fire protection of such area, requirements to maintain a clearance of specified distances.

PRC section 4119 authorizes CAL FIRE or its authorized agent to inspect properties to determine whether they comply with state forest and fire laws, regulations, or use permits. Section 4427 limits the use of any motor, engine, boiler, stationary equipment, welding equipment, cutting torches, tarpots, or grinding devices which may generate a spark or flame if the equipment is located on or near forested land or land covered in bush or grass. It also establishes requirements such as clearing flammable material within 10 feet of the area of operation, as well as carrying fire response equipment such as a shovel, backpack pump water type fire extinguisher. Section 4428 requires certain firefighting equipment to be used when operating internal combustion engines on or near land covered by forest bush or grass between April 1 and December 1 of any year, or other times when ground litter and vegetation could sustain combustion and facilitate the spread of fire.

PRC section 4431 requires users of gasoline-fueled internal combustion-powered equipment located within 25 feet of forest, brush, or grass to keep firefighting tools at the immediate location of use. Section 4442 restricts the use and operation of any internal combustion engine that uses hydrocarbon fuels on any forest, brush, or grass areas unless the engine is equipped with a spark arrestor, as defined section 4442(c) and pursuant to section 4443.

Porter-Cologne Water Quality Act. This state law provides a comprehensive water quality management system for the protection of California waters. The act designates the SWRCB as the ultimate authority over State water rights and water quality policy and also established nine RWQCBs to oversee water quality on a day-to-day basis at the local and regional level. The RWQCBs have the responsibility of granting NPDES permits and setting waste discharge requirements for stormwater runoff from construction sites.

Department of California Highway Patrol. The Department of California Highway Patrol is the primary agency responsible for enforcing the regulations related to the transport of hazardous materials on California roads and highways (Cal. Code Regs., tit. 13, §§ 1160-1167).

Hazardous Materials Release Response Plans and Inventory Law. The California Hazardous Materials Release Response Plan and Inventory Law of 1985 (Business Plan Act, Health and Safety Code § 25500 et seq.) requires businesses that store or use hazardous materials to prepare a Hazardous Materials Business Plan (HMBP) and submit it to the CUPA. An HMBP includes details of a facility and business conducted at the site, an inventory of hazardous materials that are handled and stored

on-site, an emergency response plan, and a safety and emergency response training program for new employees with an annual refresher course.

California Accidental Release Program. Under the California Accidental Release Program (CalARP) regulations, facilities that store extremely hazardous substances or regulated substances above the threshold quantities must register with the CalARP Program and submit a Risk Management Plan (RMP).

Aboveground Petroleum Storage Act Program. The aboveground petroleum storage act (APSA) program requires tank facilities storing greater than 1,320 gallons of petroleum to develop and implement the SPCC Plan requirements (CFR 2023). A tank facility is any tank or tanks that are aboveground, including connected piping, that contain petroleum and are used by an owner or operator at a single location or site, is in secondary containment, and it is used to hold oil. The CUPA regulates businesses storing petroleum in aboveground containers or tanks (California Health & Safety Code, Chapter 6.67, Sections 25270-25270.13).

Local

Alameda East County Area Plan. The East County Area Plan (ECAP) is an Area Plan implementing the General Plan in the East County Area (including the project site). The ECAP provides for the long-range direction and development of land within the ECAP area. The ECAP was designed to preserve and enhance agriculture and agricultural lands, and to protect the natural qualities, the wildlife habitats, the watersheds, and the beautiful open space of Alameda County from excessive, badly located, and harmful development (Alameda County 2002).

Alameda County Municipal Code. Alameda County Municipal Code Chapter 6.04 adopts the California Fire Code including Chapter 12 Section 1207 Electrical Energy Storage Systems, which includes information for clearances and vegetation control. These codes include provisions for fuel modification and defensible space for fire prevention and safety. Alameda County Municipal Code Chapter 6.04 contains edits specific to Alameda County and is necessary in order to provide minimum uniform standards for basic emergency access, perimeter wildfire protection measures, signing and building numbering, private water supply reserves for emergency fire use and vegetation modification. The purpose of Chapter 6.04 is to create a safer environment for citizens within the wildlands of Alameda County, reduce the destruction and damage to structures and resources, and provide defensible space protecting citizens and firefighters (Alameda County 2025a).

Alameda County Municipal Code Chapter 8.60 of the Alameda County Municipal Code regulates the construction, maintenance, testing and use of underground tanks used for the storage of hazardous substances and mandates local implementation and enforcement of state laws pursuant to regulations adopted by the State Water Resources Control Board (Alameda County 2025a).

Alameda County General Plan. The Safety Element of the Alameda County General Plan outlines Alameda County's planning strategies regarding emergency management and response, fire hazards, flood hazards, seismic and geological planning, airport hazards, and hazardous materials (Alameda County 2022). Policies in the Safety Element seek to create an effective emergency response and management system for Alameda County (Alameda County 2022). The following list consists of the policies of the Safety Element relevant to Hazards, Hazardous Materials, and Wildfire:

Policy 3.3-P4. All urban and rural development, existing and proposed, should be provided with adequate water supply and fire protection facilities and services. Facilities serving hill area development should be adequate to provide both structural and wildland fire protection. The primary responsibility falls upon the owner and the developer.

Policy 3.3-P6. Plan new public and private buildings to minimize the risk of fires and identify measures to reduce fire hazards to persons and property in all existing development.

Policy 3.3-P10. The County shall require the design of adequate infrastructure if a new development is located in a state responsibility area (SRA) or in a very high fire hazard severity zone, including safe access for emergency response vehicles, visible street signs, and water supplies for structural fire suppression.

Policy 3.3-P11. The County shall require the use of fire resistant building materials, fire resistant landscaping and, and adequate clearance around structures in "high" and "very high" fire hazard areas.

Policy 3.3-P13. The County shall work cooperatively with public agencies with responsibility for fire protection and refer development applications to the Alameda County Fire Department, or the local Fire District for review and recommendation.

Policy 3.3-P17. The County shall avoid or minimize the wildfire hazards associated with new uses of land.

Policy 2.3-P3. The County shall minimize risks of exposure to or contamination by hazardous materials by educating the public, establishing performance standards for uses that involve hazardous materials, and evaluating soil and groundwater contamination as part of development project review.

Policy 2.3-P6. Adequate separation shall be provided between areas where hazardous materials are present and sensitive uses such as schools, residences and public facilities.

Policy 2.3-P7. The County shall assist the Alameda County Waste Management Authority with the implementation of the Alameda County Integrated Waste Management Plan and the Alameda County Hazardous Waste Management Plan.

Policy 2.3-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.

Policy 2.3-P10. Emergency response plans shall be submitted as part of all use applications for any large generators of hazardous waste.

Alameda County Department of Environmental Health. The Hazardous Materials Division of the Alameda County Department of Environmental Health is the designated CUPA for the County. The CUPA programs help prevent costly releases and spills that could endanger the community and damage the environment. The program oversees state-mandated programs in Alameda County.

Hazardous Materials Business Plan. California Health and Safety Code, Section 25500, et seq., and the related regulations of California Code of Regulations, title 19, Section 2620 et seq., requires a Hazardous Materials Business Plan (HMBP) to be submitted every year to the California Environmental Reporting System (CERS). The HMBP Program is administered throughout Alameda County and its incorporated cities and is used to protect public health, the environment and groundwater from risks or adverse effects associated with the improper storage and handling of hazardous materials.

California Accidental Release Program. Under the California Accidental Release Program (CalARP) regulations, facilities that store extremely hazardous substances or regulated substances above the threshold quantities must register with the CalARP and submit a Risk Management Plan (RMP).

Aboveground Petroleum Storage Act Program (APSA). 40 CFR Part 112, the APSA requires preparation of a Spill Prevention, Control, and Countermeasure (SPCC) plan if oil is stored in a single aboveground storage tank (AST) with greater capacity than 660 gallons or if the total petroleum storage (including ASTs, oil-filled equipment, and drums) is greater than 1,320 galls or oil-filled equipment where there is a reasonable possibility that the tank(s) or equipment may discharge oil in "harmful quantities" into navigable waters or adjoining shores. APSA is implemented by CAL FIRE Office of the State Fire Marshal (OSFM).

Cumulative

The California Environmental Quality Act (CEQA) requires a discussion of cumulative environmental impacts (Cal. Code Regs., tit. 14, section 15130). Cumulative impacts are two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. The CEQA Guidelines (California Code of Regulations, title 14, section 15000 et seq.) require that the discussion reflects the severity of the impacts and the likelihood of their occurrence but need not provide as much detail as the discussion of the impacts attributable to the project alone.

Pursuant to CEQA, a cumulative impacts analysis can be performed by either 1) summarizing growth projections in an adopted general plan or in a prior certified environmental document, or 2) compiling a list of past, present, and probable future projects producing related or cumulative impacts. The second method has been utilized for the purposes of this analysis. A master list of cumulative projects is provided in **Appendix A, Table A-1** and **Figure A-1**.

The geographic extent for the analysis of cumulative impacts related to hazards, hazardous materials, and hazardous waste is limited to the immediate vicinity surrounding the project as the project hazards, hazardous materials, and hazardous waste impacts are limited to the project site and immediately adjacent areas. Similar impacts of other past, present, and reasonably foreseeable future projects that would have the potential to occur would also be limited to their respective project sites and immediately adjacent properties. The closest projects in the immediate vicinity are: Project 1 (Mulqueenery Ranch Wind Powering Project), Project 2 (Griffith Energy Storage Project), and Project 3 (Jess Ranch Compost).

The area for cumulative impacts related to wildfire is related to areas that are in or near lands classified as a very high FHSZ, or on land classified by the CPUC as having a fire threat. None of the cumulative projects are in or near lands classified as a very high FHSZ, or on land classified by the CPUC as having a fire threat.

HAZARDS, HAZARDOUS MATERIALS, AND WILDFIRE	**Significant and Unavoidable Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐
b. Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d. Would the project 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,	☐	☒	☐	☐

HAZARDS, HAZARDOUS MATERIALS, AND WILDFIRE	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
would it create a significant hazard to the public or the environment?				
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within 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?	☐	☐	☐	☒
f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☒	☐	☐
h. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
i. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
ii. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☒	☐	☐
iii. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☒	☐	☐
iv. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result	☐	☒	☐	☐

HAZARDS, HAZARDOUS MATERIALS, AND WILDFIRE	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
of runoff, post-fire slope instability, or drainage changes?				

Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, hazards and hazardous materials and wildfire.

5.7.2.1 Methodology and Thresholds of Significance

In addition to the above environmental checklist, CEC staff used the following methodology and thresholds of significance to evaluate the project.

Methodology

Hazards, Hazardous Materials, and Hazardous Waste. The hazardous materials analyzed include those potentially existing on the site and those that would be used as part of project construction, and operations and maintenance. Potential existing hazards were assessed based on review of information online and in state hazard databases and maps for the project area including:

- The hazardous materials section analysis for the Potentia-Viridi Battery Energy Storage System (AMLGMN 2024k)
- Phase I Environmental Site Assessment (AMLGMN 2024pp)
- Soil sampling for contamination report, (Dudek 2024a)
- List of leaking underground storage tank sites from State Water Resources Control Board (SWRCB) GeoTracker (SWRCB 2025).
- List of hazardous waste and hazardous substances sites from Department of Toxic Substances Control (DTSC) EnviroStor (DTSC 2025).
- List of solid waste disposal sites identified by the SWRCB with waste constituents above hazardous waste levels outside the waste management unit (Cal EPA 2025).
- List of "active" Cease and Desist Orders and Cleanup Abatement Orders (Cal EPA 2025).
- 2021 Alameda County Local Hazard Mitigation Plan (Alameda County 2021)
- East County Area Plan (Alameda County 2002)

Some hazardous materials would be used on a short-term basis during construction and decommissioning. Others would be stored onsite for use during operations and maintenance. Therefore, this analysis examines the choice and amount of chemicals to be used, how the project would use the chemicals, how they would be transported to the facility, and how the project plans to store the materials onsite.

The project is required to provide documentation of the nature of any existing or future releases of hazardous materials that would become hazardous waste from construction or operation. Potential or existing releases of contamination would be influenced by site specific factors including, but not limited to, the concentration of the contaminant in question, the proposed use of the contaminated area, and any potential pathways for worker and general public exposure.

Wildfire. Data on fire hazard potential in the project area and area wildfire history are used to help determine the potential for damaging impacts to occur as a result of a project-caused wildfire or project impacts from future wildfires in the project vicinity.

Additionally, fire suppression information in the project description, and the availability and proximity of water sources for fire containment and suppression were included in the assessment.

To identify and assess potential impacts related to wildfire, CEC staff reviewed publicly available information including the following:

- CAL FIRE – Fire Hazard Severity Zones Maps.
- CAL FIRE – Historical Fire Perimeters.
- CPUC – High Fire-Threat District Map zones.
- Fire and Resource Assessment Program (FRAP) – fire perimeter GIS data set.
- 2021 Alameda County Local Hazard Mitigation Plan (Alameda County 2021).
- Wildfire section analysis for the Potentia-Viridi Battery Energy Storage System (AMLGMN 2024bb).

Thresholds of Significance

A threshold of significance is the line at which a project's environmental impact becomes severe enough that mitigation is required to reduce that impact below the significance line. Impact categories based on the CEQA Environmental Checklist, Appendix G, of the CEQA Guidelines are considered to evaluate if the relevant project impacts are to a degree requiring mitigation.

A threshold of significance may be an identifiable quantitative, qualitative or performance level of a particular environmental effect, and the non-compliance there with means the effect will normally be determined to be significant by the agency.

Impact discussions below for construction and operation pertain to project components both within the CEC's Opt-In Certification and project components outside the CEC's Opt-In certification.

5.7.2.2 Direct and Indirect Impacts

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

Construction

Less Than Significant with Mitigation Incorporated. Based on the analysis below, construction of the project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, and the impact would be less than significant with the implementation of Conditions of Certification (COCs) **HAZ-3, HAZ-4**, and **WORKER SAFETY-1** for construction.

The project would use, store, transport, and dispose of hazardous materials used in the construction of the project in accordance with federal, state, and county regulations.

Construction would involve the use of hazardous materials, as identified in **Table 5.7-1**. Hazardous materials storage at the project site would be regulated under local, state and federal regulations. Hazardous materials used and stored on-site during construction would be securely stored in appropriate containers to maintain consistency with 40 CFR Part 262, 40 CFR 1910.12, and Cal. Code Regs., tit. 8, section 5192.

The application states that:

> "During construction, operation, and decommissioning, all fuels, waste oils, and solvents would be collected and stored in tanks or drums within a containment area consisting of an impervious floor and sidewalls. Fuel would be stored in aboveground storage tanks. These tanks may have either a double wall or would be placed within temporary containment skid or lined, earthen berms for spill containment.." (AMLGMN 2024k)

Hazardous material use would present relatively low public health risk, but could contaminate subsurface soils, ground water if a release or incident occurred.

General industry health, safety and environmental Best Management Practices (BMP)s would be implemented by construction personnel. The application includes BMPs to reduce incidents involving hazardous materials such as procedures for vehicle/equipment refueling and maintenance to prevent leaks and spills (AMLGMN 2024k):

The project owner would have to obtain a site-specific Hazardous Waste Identification Number through either the U.S. EPA (federal ID) or the Cal-EPA DTSC (state ID) and hazardous waste generator classification for the project. Whether the project owner obtains a federal ID or a state ID depends on the quantity and type of hazardous waste generated. Hazardous waste generated at the project site would be stored on-site in accordance with accumulation time limits detailed in California Code of Regulations,

Title 22, section 66262.16 and 66262.17, before off-site disposal, treatment, or recycling. Staff proposes COC **HAZ-3** to ensure that the project has obtained the project's U.S. EPA or Cal-EPA DTSC identification number before the start of construction, reports the number to the Compliance Project Manager (CPM), and notifies the CPM of new or revised numbers.

Hazardous wastes would be accumulated according to the requirements in the California Code of Regulations, title 22, Section 66262.15 for satellite accumulation areas. Hazardous wastes would be collected by a licensed registered hazardous waste hauler using a hazardous waste manifest. Wastes would be transported to permitted hazardous waste management facilities. Copies of manifests, reports, waste analyses, and other documents would be kept on-site and would remain accessible for inspection for at least three years. Employees would be trained in hazardous waste management, including procedures, spill contingencies, and waste minimization.

Hazardous waste would be stored on-site in a satellite accumulation areas or storage areas consistent with regulations and transported by a licensed registered hazardous waste transporter to an authorized treatment, storage, and disposal facility. Hazardous wastes would likely be transported to the hazardous waste disposal facility Kettleman Hills Facility and/or Clean Harbors Buttonwillow Facility or an out-of-state landfill.

The application does not include a comprehensive security plan for the construction phase of the project. Therefore, CEC staff proposes COC **HAZ-4** to require the project owner to create a construction security plan to ensure a minimum level of security for BESS, step-up substation, and generation-intertie line. With implementation of COC **HAZ-3** and **HAZ-4**, the impact of construction of the BESS and necessary components would be less than significant.

Operation

Less Than Significant with Mitigation Incorporated. Based on the analysis below, operations of the project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, and the impact would be less than significant with the implementation of COCs **HAZ-1**, **HAZ-2**, and **HAZ-5** for operations.

Operation would involve the use of hazardous materials, as identified in **Table 5.7-1**. Hazardous materials used and stored on-site during would be securely stored in appropriate containers or operating equipment in compliance with 40 CFR Part 262, 40 CFR 1910.12, and Calif. Code of Regs., tit. 8, Section 5192.

Hazardous materials would be transported to the site as needed. Transportation of hazardous substances would occur with DOT-approved personnel and trucking/transport equipment.

Operation would involve use and storage of hazardous materials. Most of the hazardous materials used and stored on site would consist of lithium-ion batteries for project operations and diesel storage for back-up generators. Uncontrolled release of liquid chemicals could run off and drain into the stormwater system and potentially have harmful effects. However, the use and storage of hazardous materials would pose minor risks for release if best management practices are adopted, as detailed above.

Project operation and maintenance activities would transport, use, and store a variety of hazardous materials. **Table 5.7-1** presents the hazardous materials that would likely be used and stored on the project site. The project would prepare an SPCC and HMBP prior to operation. The HMBP would list the hazardous materials and their location which ensures that first responders are prepared to respond to any incidents that could occur at the project site. The SPCC would lay out the proper procedures to help prevent a discharge of petroleum products, as well as control a discharge should one occur at the project site. Therefore, CEC staff proposes COC **HAZ-1** which would require the submission of the HMBP and SPCC for the project site to the Hazardous Materials Division of the Alameda County Environmental Health Department, the CUPA, for the project area, and to the CPM for review and approval. The HMBP would be uploaded annually to the California Environmental Reporting System (CERS).

There is the potential for the project to increase the quantities or change the types of hazardous materials that are used at the project site. New or increased amounts of hazardous materials could require new plan, policy or regulation requirements for the project site. Therefore, CEC staff proposes COC **HAZ-2** which would require the project owner to notify and seek approval from the CPM before changing the quantity of or using a new hazardous material onsite. This would ensure that any new or the change in the amount of hazardous material introduced to the project site would maintain consistency with applicable LORS.

The application addresses security in several resource areas but does not include a comprehensive security plan for operations. Staff concurs that security elements are needed to ensure the protection of California's electrical infrastructure from vandalism or domestic/foreign attacks. Therefore, CEC staff proposes COC **HAZ-5** which would require the project owner to create an operations security plan to ensure appropriate security for the project.

With implementation of COCs **HAZ-1, HAZ-2**, and **HAZ-5**, the impact from operation of the BESS would be less than significant.

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

Construction

Less Than Significant with Mitigation Incorporated. Based on the analysis below, construction would not result in a significant hazard to the public or the environment, with implementation of COCs **HAZ-4, WORKER SAFETY -1, WORKER SAFETY-7,** and **WORKER SAFETY-8.**

As discussed above in criterion "a", project construction activities would involve the transportation, use and storage of hazardous materials at the project site. Several hazardous materials would be used in construction activities (see **Table 5.7-1**). The improper use and storage of hazardous materials could lead to leaks and spills or fires. However, most spills and leaks would be limited and easily cleaned up with spill kits due to the small quantities involved. As indicated in "a" designated areas would be bermed and/or covered by an impervious surface (asphalt or concrete) to control potential spills.

In 2024, I-15 near Baker, CA, was closed in both direction for 40 hours due to a fire on a truck transporting lithium-ion batteries for a BESS. Other lithium-ion battery fires have occurred during transport on freeways. COC **WORKER SAFETY-7** would reduce the potential BESS fires (during transport to and from the site), by requiring lithium-ion batteries be shipped from the factory to the project site at a maximum of 30 percent State of Charge (SOC). This measure would reduce the likelihood of a thermal runaway incident and reduce the energy of any fire if one occurred during transportation.

Staff reviewed the project details for storage, and handling of hazardous materials during construction, which are listed above in criterion "a" that would be developed to reduce the potential for incidents involving hazardous materials and concluded that implementation would be adequate to ensure that hazardous materials handling would be consistent with applicable LORS. Therefore, hazardous materials would be transported, stored, used, and cleaned up to maintain consistency with LORS. Additionally, CEC staff proposed COC **WORKER SAFETY-1** would include plans to reduce injuries and prepare for emergencies. **WORKER SAFETY-7** and **WORKER SAFETY-8** includes several actions to reduce the effects of accidents related to the BESS and require fire responder training for BESS fires. **HAZ-4** would enhance site security during construction, also reducing the potential for accidents on-site. Worker safety programs and procedures to protect workers from exposure to hazardous materials and waste are included in **Section 4.4, Worker Safety and Fire Protection**.

The application included a Fire Safety Plan Report focusing on preventing fires both on site and those that could spread off-site during construction activities, including those caused by equipment, vehicles, arcing or sparking, and provide water, water trucks, appropriate fire extinguishers, communication with emergency dispatch and access for firefighters. Additionally, the report requires that all fire ignitions, regardless of size, be reported to the closest responding fire stations, mainly South San Joaquin County Fire Authority (SSJCFA) Station 94, the Mountain House Fire Station No. 1 (next closest

station), or Alameda County Fire Department (ACFD) in Alameda County (AMLGMN 2024a).

Staff proposes COC **WORKER SAFETY-1** that would require a Fire Management and Prevention Plan for construction. The Fire Management and Prevention Plan should include key features of the Fire Safety Plan Report and would need to be approved by the Compliance Project Manager (CPM).

Operation

Less Than Significant with Mitigation Incorporated. Based on the analysis below, operations would not result in a significant hazard to the public or the environment, with implementation of COCs **HAZ-5, WORKER SAFETY-2, WORKER SAFETY-7** and **WORKER SAFETY-8**.

As discussed above in criterion "a", project operations would involve the transportation, use and storage of hazardous materials at the project site. Several hazardous materials would be used during operations (see **Table 5.7-1**), but less petroleum fuels than would be used during construction. The improper use and/or storage of hazardous materials could lead to leaks and spills or fires. However, most spills and leaks would be limited and easily cleaned up with spill kits due to the small quantities involved. Combined with the remote location of the project site, COCs **WORKER SAFETY-2, WORKER-SAFETY-7** and **WORKER SAFETY-8** would mitigate the impact of potential BESS fires to a less-than-significant level.

Staff reviewed the project details for storage, transport, and disposal of hazardous materials or hazardous waste during operation, which are listed above in criterion "a" that would be developed to reduce the potential for incidents involving hazardous materials and concluded that implementation would generally be adequate to ensure that hazardous materials handling would be consistent with applicable LORS. Therefore, hazardous materials would be transported, stored, used, and cleaned up in compliance with LORS. Additionally, COC **WORKER SAFERY-2** would include plans including an Operations Emergency Action Plan, Injury and Illness Prevention Plan and Fire Prevention Plan to reduce injuries and prepare for emergencies. COC **WORKER SAFETY-7** and **WORKER SAFETY-8** include several actions to reduce the effects of accidents related to the BESS and require fire department training for BESS fires at the project site. CEC staff proposed COC **HAZ-5** would enhance site security during operations, also reducing the potential for accidents on-site. Worker safety programs and procedures to protect workers from exposure to hazardous materials and waste are included in **Section 4.4, Worker Safety and Fire Protection**.

The BESS would have the potential for upset and accident conditions due to the large volume of lithium-ion batteries that could create the risk of fires due to BESS failure incidents leading to thermal runaway and fires from other infrastructure (susceptible to failure) related to the storage and dispatch of the large quantity of stored energy in the BESS. Thermal runaway is a process in which the lithium-ion cell enters an

uncontrollable, self-heating state and can emit toxic gases such as hydrogen chloride, hydrogen fluoride, hydrogen cyanide, and benzene along with flammable/explosive gases including hydrogen, methane, propane, ethylene, and others. These flammable gases could potentially lead to a fire or explosion within the BESS. Due to the potential for fire and explosion, CEC staff conclude that the project's BESS would present a significant risk that should be mitigated. Therefore, CEC staff recommend the adoption of COCs **WORKER SAFETY-7** and **WORKER SAFETY-8** that would reduce the risk of fire to less than significant. For more information, refer to **Section 4.4, Worker Safety and Fire Protection**.

However, in the rare case of a thermal runaway or fire incident at a BESS, there could be smoke that could last for many hours, even if the accident is limited to a single container. Water would be available for the fire responders (Alameda County Fire Department) to use to potentially cool the surrounding containers or could be used on the container on fire at the discretion of the fire responders. Several BESS fire incidents have occurred at installations where the water and air were required to be sampled to ensure the safety of the public. This real time information would be important for first responders to have to determine if a shelter in place or evacuation order would be necessary. To date, the water and air sampling conducted at other BESS fire incidents has found that the constituents did not pose a concern to the public (NYSERDA 2023). However, CEC staff has determined that having this real time information could be critical for first responders during an incident. Therefore, CEC staff proposes COC **HAZ-9** that would require an air and water sampling plan. COC **HAZ-9** would require the project owner to develop an air sampling plan to ensure that information can be relayed to first responders in a timely manner. Additionally, water quality testing would be conducted prior to any disposal of water used for an incident.

The application included a Fire Management and Prevention Plan to be prepared and implemented by the applicant to ensure the safety of workers and the public during operation and maintenance activities for the project. Staff proposes COC **WORKER SAFETY-2** that requires a Fire Management and Prevention Plan for operations.

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

Construction and Operation

No Impact. Based on the analysis below, project construction and operation would not result in hazardous materials impacts to existing or proposed schools.

The nearest existing schools to the project site are Evelyn Costa Elementary School approximately 3.1 miles northeast of the project site, Nine Islands School approximately 3.2 miles north of the project site, Peter Honsen Elementary School approximately 3.2 miles north of the project site, and Julius Cordes Elementary School and Mountain House High School approximately 3.6 miles north of the project site. No schools are

within a 0.25 mile radius of the project site. Therefore, no impact would occur to existing or proposed schools.

d. Would the project 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?

Construction and Operation

Less Than Significant with Mitigation Incorporated. Based on the analysis below, project construction and operation would not be on a listed hazardous materials site. To mitigate the potential impacts from unknown environmental contamination, CEC staff proposes COCs **HAZ-6, HAZ-7**, and **HAZ-8** to require a Soils Management Plan (SMP) and a professional engineer or geologist be available for consultation if contamination is discovered during ground disturbing activities.

The DTSC and SWRCB compile and update lists of hazardous material sites pursuant to Government Code section 65962.5. The project site is not included on the databases maintained by the DTSC's EnviroStor (DTSC 2025) or the SWRCB's Geotracker (SWRCB 2025). The SWRCB database shows oneLUST case was identified within a 0.5 mile radius of the project site; USA Windpower, located at 17350 Patterson Pass Road. The case was closed in 1994 (SWRCB 2025), indicating that regulatory oversight has concluded. This site does not appear to have affected the environmental conditions of the project site nor would the project present a significant hazard to the public or the environment, and therefore the project impact would be less than significant.

Unknown Environmental Contamination. Staff proposes COC **HAZ-6** that would require preparation of a Soil Management Plan prior to the start of ground disturbing activities. The purpose of the SMP would be to provide procedures and protocols for the proper management of unknown impacts to soil or undocumented subsurface features potentially encountered at the project site during grading and construction activities. The information provided in the SMP would be used to address proper handling, assessment, and disposal of any impacted soil or subsurface features that are encountered during grading. Soil that would be transported offsite must be adequately characterized and disposed of at a facility that is permitted and approved by the disposal contractor to receive such material. Likewise, any soil imported to the property must be either from a virgin quarry or certified as determined by analysis to be "clean" in accordance with applicable state LORS prior to arriving at the project site. Staff recognized that ground disturbing activities would have the potential to encounter impacted groundwater and/or soil. Therefore, CEC staff proposes COC **HAZ-6** which would require the submission of a SMP to the Alameda County Environmental Health – CUPA/Hazardous Materials Division, for review and comment, and to the CPM for review and approval prior to the start of any ground disturbing activities.

A professional engineer or professional geologist with sufficient experience in hazardous waste management would have the requisite expertise to determine whether additional investigations are needed to identify the extent of contamination and to ensure proper handling and disposal contaminated soil and groundwater. Therefore, CEC staff proposes COC **HAZ-7** which would require that an experienced and qualified professional engineer or professional geologist would be available for consultation if contamination is discovered during ground disturbing activities. The resume of the professional engineer or professional geologist shall reflect experience in remedial investigations and feasibility studies. If seemingly contaminated soil and/or groundwater is identified during site characterization, demolition, excavation, or grading at either the proposed site or linear facilities (as evidenced by discoloration, odor, detection by handheld instruments, or other signs), COC **HAZ-8** would require the professional engineer or geologist to inspect the site, determine what would be required to characterize the nature and extent of contamination, and provide a report to representatives of the Alameda County Environmental Health – CUPA/Hazardous Materials Division and the CPM on findings and the recommended course of action. Related activities would specifically include soil removal, dust suppression, and worker exposure prevention by means of wearing personal protective equipment. Any contaminated soils and/or groundwater identified would be removed and disposed of according to the appropriate local, state, and federal regulations under the oversight of the agency taking lead jurisdiction.

Any contaminated soils and/or groundwater identified would be removed and disposed of according to the appropriate local, state, and federal regulations under the oversight of the CEC. CEC staff proposes COCs **HAZ-6, HAZ-7**, and **HAZ-8** for construction activities to ensure that any impacts from unknown environmental contamination would be less than significant.

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within 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?

Construction and Operation

No Impact. Based on the analysis below, Project construction and operation would not result in excessive noise levels or safety hazards to public or private airports.

There are no public or private airports within 2 miles of the project. The nearest airport is the Tracy Municipal Airport which is approximately 7 miles east of the project site. Given the distance to the Tracy Municipal Airport, on-site construction workers or maintenance staff would not be exposed to excessive airport noise levels that would result in a safety hazard. Therefore, no impacts related to airport noise would occur.

f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Construction and Operation

Less Than Significant Impact. Based on the analysis below, project construction and operation would not substantially impar the implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

The project would not substantially impede Alameda County's adopted emergency response plan, emergency vehicle access, or personnel access to the project site (AMLGMN 2024a).

The primary roadway providing access to and from the project site is Patterson Pass Road, a two-lane rural roadway that extends east-west through the region. This roadway would serve as the main ingress/egress for workers, emergency personnel, and potential evacuation, if needed. Alameda County General Plan Safety Element, Appendix F designates Patterson Pass Road as an impacted evacuation route, along with all other major roadways in Alameda County (Alameda County 2022). However, Patterson Pass Road is not listed as a designated evacuation route because in cases of emergencies, Alameda County launches specific software that provides real-time evacuation maps by zone within the county (Alameda County 2025b).

Access to Patterson Pass near the project site would be maintained throughout construction and operation of the project. The limited size of the project's operational work force would not generate significant traffic volumes during an emergency evacuation scenario that could complicate area-wide emergency evacuation efforts. Therefore, the impact related to impairment of the implementation of or physical interference with an adopted emergency response plan or emergency evacuation plan would be less than significant.

g. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Construction

Less Than Significant with Mitigation Incorporated. Based on the analysis below, construction would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires, with implementation of COCs **WORKER SAFETY-1** and **WORKER SAFETY-7**.

The project site is not populated and is undeveloped with no current agricultural land and no nearby forested areas. The project site is within a State Responsibility Area (SRA) and has a high fire hazard severity zone designation from CAL FIRE. As indicated in the wildfire setting discussion above, no historic fires have burned onto the footprint

of the proposed BESS facility. There have been historic fires on the proposed Gen-tie path and one fire on another portion of the larger 232-acre property.

There would be a temporary large increase in human activity and potential ignition sources, including equipment that could create a spark, be a source of heat, or leak flammable materials on the project site during construction. The predominant fire hazard from project construction would involve the use of vehicles and equipment, which could ignite dry vegetation and result in a fire, particularly during the drier, warmer conditions of summer and fall. Construction activities that could result in sparks such as welding or grading have greater potential to result in an ignition.

The project owner proposes to prepare and implement a Construction Fire Protection and Prevention Program which would reduce construction-related risks of wildfire ignition by providing fire protections, identifying known fire hazards, and outlining procedures for fire safeguards for project construction activities. Therefore, CEC staff proposes COC **WORKER SAFETY-1** to require the project owner to implement a Construction Fire Prevention Plan.

CEC staff also proposes COC **WORKER SAFETY-7** that would reduce the potential BESS fires (during transport to and from the site), by requiring lithium-ion batteries be shipped from the factory to the project site at a maximum of 30 percent State of Charge (SOC). This measure would reduce the likelihood of a thermal runaway incident and reduce the energy of any fire if one occurred during transportation. See also criterion b) for more discussion of BESS transportation potential impacts.

CEC staff proposes COCs **WORKER-SAFETY-1** and **WORKER-SAFETY-7** to reduce the risk of loss, injury or death impacts from construction of the BESS to less than significant.

Operation

Less Than Significant Impact with Mitigation Incorporated. Based on the analysis below, operation would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires, with implementation of COCs **WORKER SAFETY-2, WORKER SAFETY-7**, and **HAZ-10**.

Worker and vehicle activity at the project site would be greatly reduced from the level of activity during construction. During operations the BESS would be operational and cycling through charging and discharging daily. The project owner proposes to prepare and implement an O&M Fire Protection and Prevention Program which would reduce operations-related risks of wildfire ignition by providing fire protections, identifying known fire hazards, and outlining procedures for fire safeguards for project O&M activities. The project owner would coordinate with the local fire department and follow all applicable detection and suppression requirements in the local California Fire Code.

The application summarizes the potential of wildfire in the area as follows:

> "Given the increased development of Alameda County's rural areas and the region's fire history, it can be anticipated that periodic wildfires will occur in the open space areas of Alameda County, with the vegetated areas surrounding the proposed Project site being no exception. Given the climatic, vegetative, topographic characteristics, and local fire history of the area, the proposed Project site, once developed, could be subject to periodic wildfires that may start on, burn onto, or spot into the site."

While acknowledging the potential for wildfires that may start on, burn onto, or spot into the site, CEC's staff experience does not include knowledge of any wildfires spreading from a BESS fire to areas outside the BESS perimeter, and no knowledge of wildfires from adjacent areas spreading onto a BESS site. While it could happen, existing operations in California are not known to have experienced either of these scenarios.

The CEC identifies several factors to minimize the potential for either of these scenarios. Key factors identified for fire prevention are:

- All new BESS components would be constructed to Alameda County Fire Code, NFPA 855, and current California Fire Code (CFC) standards.
- The project would implement vegetation management throughout the BESS facility, with annual inspections prior to June 1st each year.
- The project would include over 100-foot setbacks for the BESS enclosures from the property line.
- Fires from off-site would not have fuels across the project site.
- The monitoring system would shut off the unit should it sense any abnormal conditions.
- Burning vegetation embers may land on proposed project components but would not be likely to result in ignition based on the types of non-combustible and ignition-resistant materials that would be used on site, as well as the planned grading and vegetation management.

The project would comply with applicable ignition-resistant fire and building codes and would include a layered fire protection approach that is designed to current codes and inclusive of site-specific measures that would result in a project that is less susceptible to wildfire than surrounding landscapes. These fire protection features would form a redundant system of protection to minimize the likelihood of exposing workers or nearby population, as well as structures, to uncontrolled spread of a wildfire. As such, accidental fires within the maintained landscape or structures in the project site would have limited ability to spread.

CEC staff proposes COC **WORKER SAFETY-2** which would require the project owner to implement an O&M Fire Protection and Prevention Plan and **WORKER SAFETY-7**

operational BESS measures. CEC staff also proposes COC **HAZ-10** to annually verify compliance with vegetation management commitments at the project site.

With implementation of COCs **WORKER SAFETY-2, WORKER SAFETY-7**, and **HAZ-10**, the project operations would have a less than significant impact on hazards from wildland fires.

h. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

i. Substantially impair an adopted emergency response plan or emergency evacuation plan?

Construction and Operation

Less Than Significant Impact. The project site is not classified as a very high fire hazard severity zone (FHSZ). None of the project components outside of the CEC's Opt-In Certification are in a very high FHSZ. The project would not impair adopted emergency response plans or emergency evacuation plans.

Based on the analysis for criterion "f", above, project construction and operation, within and outside of the CEC's Opt-In Certification, would not substantially impair an adopted emergency response plan or emergency evacuation plan. Additionally, the project is not located within a SRA or very high FHSZ, or land classified as having a fire threat by the CPUC (CPUC 2025).

Therefore, the project would have less than significant impact involving the impaired implementation or physical interference with an adopted emergency response or evacuation plan.

ii. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Construction and Operation

Less Than Significant with Mitigation Incorporated. Based on the analysis below, with the implementation COCs **WORKER SAFETY-1**, and **WORKER SAFETY-2** and project components would not exacerbate wildfire risk and the impact would be less than significant.

See discussion in criterion "g" above. The project site is currently undeveloped and the project owner would implement construction and operation fire prevention plans. The implementation of COCs **WORKER SAFETY-1** and **WORKER SAFETY-2** would ensure that construction and operation fire prevention plans would be followed. Therefore, with these COCs, impacts would less than significant with mitigation.

iii. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Construction and Operation

Less Than Significant with Mitigation Incorporated. Based on the analysis below, with the implementation COCs **WORKER SAFETY-1**, and **WORKER SAFETY-2**, infrastructure associated with the project components would not exacerbate wildfire risk or result impacts to the environment and the impact would be less than significant.

As discussed above in criterion "g", the project site is currently undeveloped. The project owner would implement construction and operation fire prevention plans. The implementation of COCs **WORKER SAFETY-1** and **WORKER SAFETY-2** would ensure that construction and operation fire prevention plans would be implemented.

The project would involve construction of access roads from Patterson Pass Road to the northeastern corner as well as the southwestern corner of the BESS facility. There would also be an internal circulation network with an unobstructed width of not less than 20 feet and internal radii of a minimum of 25 feet. There would be minimal increased human activity and vehicles along newly installed roads during the operational phase. Only three full time staff and one larger annual inspection are anticipated (AMLGMN 2024bb).

Therefore, with these COCs, the project would have a less than significant impact with mitigation.

iv. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Construction and Operation

Less Than Significant with Mitigation Incorporated. Based on the analysis below, with the implementation COCs **WATER-1**, and **WATER-2**, the project would not expose people or structures to downstream flooding or landslides resulting from post-fire slope instability or drainage changes.

Elevation in the project area ranges from approximately 400 feet above mean sea level (AMSL) at Patterson Pass Road to approximately 470 feet AMSL at the highest point on the hill. Slopes on the project site range from two to 20 percent with the steepest slopes on the southeast side of the proposed project site from the BESS facility footprint down to Patterson Pass Road (AMLGMN 2024bb). The project would not create conditions that resulted in steeper slopes or topographic features that would increase the potential for post-fire slope instability or landslides. Project

equipment and facilities are setback at least 15 feet from adjacent slopes and would not be at an increased risk caused by slope instability.

Additionally, the project would not significantly alter existing storm water runoff amounts. Storm water discharge during construction would be managed according to the project Storm Water Pollution Prevention Plan (SWPPP). The implementation of COC **WATER-1** (see **Section 5.16, Water Resources**) would ensure that the SWPPP would be implemented. With the implementation of the SWPPP, development of the site would not cause an increase in the rate or volume of stormwater runoff during construction. Operation of the project would not substantially increase storm water runoff amount and velocities. The owner would implement an Operations Drainage, Erosion and Sediment Control Plan (DESCP) that addresses all project elements of stormwater management during project operations. Implementation of COC **WATER-2** would ensure that the DESCP is followed. The proposed onsite stormwater control measures would be designed to maintain stormwater discharge at or below the current rates. The project would therefore not be expected to contribute to a flooding hazard onsite or offsite.

Therefore, with these COCs, the project would not be exposed to post-fire slope instability or drainage changes that would impact people or structures.

5.7.2.3 Cumulative Impacts

Construction and Operation

Less Than Significant with Mitigation Incorporated. The cumulative effect of hazards such as emergency evacuation, the lithium-ion BESS, the transportation, use, and storage of hazardous materials and the generation and haul away of hazardous waste would be limited to the project site and immediately adjacent areas. Three projects have been identified as being in the immediate vicinity of the project site. COCs **HAZ-1**, **HAZ-4** and **HAZ-5** would mitigate project specific effects related to hazardous materials, and COCs **WORKER SAFETY-1** and **WORKER SAFETY-2** would provide mitigation site specific effects related to emergency actions and response. Therefore, CEC staff have concluded that the COCs are sufficient to reduce impacts, and the proposed project would not contribute to a cumulatively considerable impact related to hazardous materials.

The three projects identified in the cumulative setting of this document are not in high wildfire risk areas (lands classified as a very high FHSZ), but they are in areas that have had historic burns or are near historic wildfires (see **Figure 5.7-1**). COCs **WORKER SAFEY-1**, **WORKER SAFETY-2**, and **WORKER SAFETY-7** would mitigate project specific effects related to fire protection and potential BESS incidents. CEC has concluded that these COCs are sufficient to reduce impacts, and the proposed project would not contribute to a cumulatively considerable impact on wildfires.

5.7.3 Project Conformance with Applicable LORS

Table 5.7-2 and **Table 5.7-3** are CEC staff's determination of conformance with applicable local, state and federal LORS, including any proposed COCs, where applicable, to ensure the project would conform with LORS. As shown in these tables, CEC staff concludes that with implementation of specific COCs, the proposed project would conform with all applicable LORS. The subsection below, "Proposed Conditions of Certification," contains the full text of the referenced COCs.

TABLE 5.7-2 CONFORMANCE WITH LORS APPLICABLE TO HAZARDS AND HAZARDOUS MATERIALS/WASTE

Applicable LORS	Conformance and Basis For Determination
Federal	
Section 302, EPCRA (Public Law 99-499 42 USC 110222) and Hazardous Chemical Reporting: Community Right-to-Know (40 CFR 370). Requires one-time notification if EHS are stored in excess of TPQs.	**Yes.** COC **HAZ-1** requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. An HMBP would be prepared for the project and submitted to Alameda County Environmental Health – CUPA/Hazardous Materials Division and uploaded to CERS.
Section 304, EPCRA (Public Law 99-499, 42 USC 11002) and Emergency Planning and Notification (40 CFR 355). Requires notification when there is a release of hazardous material in excess of its RQ.	**Yes.** COC **HAZ-1** requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. Any releases of hazardous materials at the project facility in excess of its RQ would follow the notification procedures described in the project HMBP.
Hazardous Waste Generator Requirements (40 CFR Part 262). Includes provisions for securing hazardous waste storage areas to prevent unauthorized access and potential release of hazardous materials.	**Yes.** COC **HAZ-1** requires the owner to prepare the HMBP and SPCC Plan prior to the start of operations. The HMBP would include information regarding the secure storage of hazardous waste and materials**.** COCs **HAZ-4** and **HAZ-5** require the owner to prepare site-specific security plans for construction and operation.
Section 311, EPCRA (Public Law 99-499, 42 USC 11021) and Hazardous Chemical Reporting: Community Right-to-Know (40 CFR 370). Requires that SDSs for all hazardous materials or a list of all hazardous materials be submitted to the State Emergency Response Commission Local Emergency Planning Commission (LEPC), and Alameda County Environmental Health –CUPA/Hazardous Materials Division.	**Yes.** COC **HAZ-1** requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The HMBP would include a list of hazardous materials for submission to the Alameda County Environmental Health – CUPA/Hazardous Materials Division and uploaded to CERS.
Section 313, EPCRA (Public Law 99-499, 42 USC 11023) and Toxic Chemical Release Reporting: Community Right-to-Know (40 CFR 372). Requires annual reporting of releases of hazardous materials.	**Yes.** COC **HAZ-1** requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. Any releases of hazardous materials at the project facility would follow the notification procedures described in the HMBP.
Section 112, CAA Amendments (Public Law 101-549, 42 USC 7412) and Chemical Accident Prevention Provisions. Requires facilities that store a regulated hazardous material at a quantity greater than the TQ to develop an RMP.	**Yes.** A RMP is not required because no regulated hazardous material would be stored at a quantity greater than the TQ.

TABLE 5.7-2 CONFORMANCE WITH LORS APPLICABLE TO HAZARDS AND HAZARDOUS MATERIALS/WASTE

Applicable LORS	Conformance and Basis For Determination
Section 311, CWA (Public Law 92-500, 33 USC 1251et seq.) and Oil Pollution Prevention (40 CFR 112). Requires preparation of an SPCC plan if the total oil and petroleum storage (including ASTs, oil-filled equipment, and drums) is greater than 1,320 gallons or if the oil or oil products stored in USTs exceeds 42,000 gallons.	**Yes.** COC **HAZ-1** requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. An SPCC plan would be prepared for the project facility if cumulative storage of oil and oil products on-site is greater than 1,320 gallons and/or storage of oil and oil products in USTs is greater than 42,000 gallons.
U.S. Department of Transportation Regulations, 49 CFR 171-177. Governs the transportation of hazardous materials, including the marking of transportation vehicles.	**Yes.** COC **HAZ-1** requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The project HMBP would describe transportation requirements for hazardous materials stored at the project facility.
Hazardous Waste Operations and Emergency Response (49 CFR Section 1910.12). Specifies the operational and response requirements related to the use, generations, and storage of hazardous materials.	**Yes.** COC **HAZ-1** requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The project HMBP would describe operational and emergency response requirements related to the use, generation, and secure storage of hazardous materials.
Resource Conservation and Recovery Act (RCRA), Title 42, Chapter 82. Regulates transportation, treatment, storage, and disposal of hazardous waste.	**Yes.** COC **HAZ-1** requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The HMBP would establish procedures related to the transportation, treatment, storage, and disposal of hazardous waste.
Toxic Substances Control Act (TSCA), Title 15, Chapter 53. The TSCA addresses the production, importation, use, and disposal of specific chemicals, including PCBs.	**Yes.** COC **HAZ-1** requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The HMBP would establish procedures for the use and disposal of hazardous materials including PCBs.
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Title 42, Chapter 103. Provides procedures to respond to releases and threatened releases of hazardous substances, pollutants, and/or contaminants.	**Yes.** COC **HAZ-1** requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. See Impact discussion criterion "b".
State	
CCR, Title 8, Section 339; Section 3200 et seq., Section 5139 et seq. and Section 5160 et seq. Lists hazardous chemicals under the Hazardous Substance Information and Training Act; addresses control of hazardous substances; and addresses hot, flammable, poisonous, corrosive, and irritant substances.	**Yes.** COC **HAZ-1** requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The HMBP would describe hazardous material handling requirements related to the control of hazardous substances, including hot, flammable, poisonous, corrosive, and irritant substances.
Health and Safety Code, Section 25500 et seq. (HMBP). Requires preparation of an HMBP if hazardous materials are handled or stored in excess of threshold quantities.	**Yes.** COC **HAZ-1** requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. An HMBP would be prepared for the project and submitted to Alameda County Environmental Health – CUPA/Hazardous Materials Division and uploaded to CERS.
Health and Safety Code, Section 25531 through 25543.4 (CalARP). Requires registration with local CUPA or lead agency and preparation of RMP if	**Yes.** A RMP is not required because no regulated hazardous material would be stored at a quantity greater than the TPQ.

TABLE 5.7-2 CONFORMANCE WITH LORS APPLICABLE TO HAZARDS AND HAZARDOUS MATERIALS/WASTE

Applicable LORS	Conformance and Basis For Determination
regulated (extremely hazardous) substances are handled or stored in excess of TPQs.	
Occupational Safety and Health Act (19 CFR 1910.119). For chemicals listed above thresholds, requires a process safety management plan for preventing or minimizing the consequences of catastrophic releases of toxic, reactive, flammable, or explosive chemicals. These releases may result in toxic, fire, or explosive hazards.	**Yes.** A process safety management plan (PSM) is not required because there the project would not use chemicals that trigger a PSM plan.
Health and Safety Code, Section 25270.13 (Aboveground Petroleum Storage Act). Requires preparation of an SPCC plan if oil is stored in a single AST with capacity greater than 660 gallons or if the total petroleum storage (including ASTs, oil-filled equipment, and drums) is greater than 1,320 gallons.	**Yes.** COC **HAZ-1** requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. An SPCC plan would be prepared for the project and implemented if cumulative storage of oil and oil products on-site is greater than 1,320 gallons.
Health and Safety Code, Section 25249.5 through 25249.13 (Safe Drinking Water and Toxics Enforcement Act) (Proposition 65). Requires warning to persons exposed to a list of carcinogenic and reproductive toxins and protection of drinking water from the same toxins.	**Yes.** The project facility would be appropriately labeled for any chemicals stored onsite that are on the Proposition 65 list.
Health and Safety Code, Section 25100 through 25259. Establishes the procedures for hazardous waste storage, treatment, and transportation.	**Yes.** COC **HAZ-1** requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The project HMBP would include details about the storage and transportation of hazardous materials and waste. The project would comply with all local, state, and federal regulations for hazardous waste handling, storage, and transportation.
CVC Section 32100.5. Establishes the procedures for the state to determine transportation corridors for materials that may pose an inhalation hazard.	**Yes.** Transportation of sulfuric acid would follow designated routes.
CVC Section 32000 – 32053. Regulates the transportation of hazardous materials, including licensing and notification of hauling routes.	**Yes.** Transportation of hazardous materials to and from the project facility would follow all licensing and notification requirements.
Health and Safety Code, Section 25280 through 25299 (Underground Storage of Hazardous Substances). Regulates the construction, maintenance, testing, and use of USTs for the storage of hazardous Substances.	**Yes.** The project facility is not expected to have any USTs therefore a UST monitoring plan is not required for the facility.
California Code of Regulations, Title 24 (California Fire Code). Requires the preparation of a Hazardous Materials Management Plan (HMMP) and Hazardous Materials Inventory Statement (HMIS) or an HMBP that includes the required information.	**Yes.** COC **HAZ-1** requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The project facility would prepare an HMBP that would include details that satisfy the requirements of the HMMP and HMIS.
CCR, Title 22 (Hazardous Waste Management). Establishes standards applicable to generators and transporters of hazardous waste.	**Yes.** COC **HAZ-1** requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The project HMBP would include details

TABLE 5.7-2 CONFORMANCE WITH LORS APPLICABLE TO HAZARDS AND HAZARDOUS MATERIALS/WASTE	
Applicable LORS	**Conformance and Basis For Determination**
	regarding hazardous waste generation and transportation. Includes manifest recordkeeping requirements.
Health and Safety Code, Hazardous Materials Release Response Plans and Inventory Law, Division 20, Chapter 6.95. Regulates the release or accidental release of hazardous materials.	**Yes.** See impact criterion "b".
Local	
Alameda County General Plan Safety Element detailing storage and transportation of hazardous materials.	**Yes.** The project would comply with all local, state, and federal regulations for hazardous materials handling, storage, and transportation.

TABLE 5.7-3 CONFORMANCE WITH LORS APPLICABLE TO WILDFIRE	
Applicable LORS	**Conformance and Basis For Determination**
Federal	
National Fire Protection Association (NFPA) Codes, Standards, Practices, and Guides. Provides design, installation, and operation standards regarding fire safety.	**Yes.** The NFPA Standards required by the project, including NFPA 855, Standard for the Installation of Stationary Energy Storage Systems, and is the standard for the testing, design, installation, operation, and removal of BESS and components, provide the basis for state regulation (CFC, Chapter 12, Section 1207), which the project would comply with.
North American Electric Reliability Corporation; Institute of Electrical and Electronics Engineers; National Electrical Safety Code	**Yes.** All electrical components, most notably overhead powerlines, associated with the proposed project (including the gen-tie line), would comply with the requirements of the National Electrical Safety Code, most notably the vegetation management requirements.
CGC Sections 51175 through 51189, Section 51182; CCR Title 14, Division 1.5, Chapter 7, Subchapter 3; PRC Sections 4290-4293; PUC 8386, General Orders and Rules. Regulate defensible space, vegetation management around powerlines, and fire hazard severity zones.	**Yes.** COCs **WORKER SAFETY-1** and **WORKER SAFETY-2** require the owner to prepare construction and operation fire prevention plans that would include details regarding defensible space and vegetation management.
State	
Part 2 of CCR Title 24, California Building Code. Provides construction standards.	**Yes.** Project construction would comply with the CBC through compliance with the Alameda County Code of Ordinances.
CCR, Title 8 section 1920, et seq. Regulations for fire protection systems.	**Yes.** A Fire Prevention Plan would be required by COCs **WORKER SAFETY-1** and **WORKER SAFETY-2**.
Requirements for fire protection. CCR Title 8, sections 6150, 6151, 6165, 6170, 6175, 6183, 6184	**Yes.** A Fire Prevention Plan would be required by COCs **WORKER SAFETY-1** and **WORKER SAFETY-2**.
CFC, Title 24. Establishes best practices for fire safety and prevention. Requires the preparation of a Hazardous Materials Management Plan (HMMP) and Hazardous Materials Inventory Statement	**Yes.** COC **HAZ-1** requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The project facility would prepare an

TABLE 5.7-3 CONFORMANCE WITH LORS APPLICABLE TO WILDFIRE	
Applicable LORS	**Conformance and Basis For Determination**
(HMIS) or a Hazardous Materials Business Plan (HMBP) that includes the required information.	HMBP that would include details that satisfy the requirements of the HMMP and HMIS.
CCR, Title 24, Chapter 1207. Outlines requirements for design, construction, operation, and decommissioning standards; permits, construction documents, hazard mitigation analysis, and fire testing, suppression, and remediation for stationary and mobile electrical energy storage systems.	**Yes.** COC **WORKER SAFETY-6** requires the project owner to comply with the applicable provisions of NFPA 855 (standard for the Installation of Stationary Energy Storage Systems) as ~~a~~ minimum level of safety for the BESS. Also, COC **WORKER SAFETY-6** requires the project owner to comply with the applicable provisions of NFPA 850 (recommended Practice for Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations) as the minimum level of fire protection. The BESS would be designed to comply with the requirements set forth in CCR, Title 24, Chapter 1207.
California Public Resources Code, Section 4427, Section 4428, and Section 4431. Outlines fire safety and wildfire protection standards in conjunction with building, construction, and development in SRAs.	**Yes.** A Fire Prevention Plan would be required by COCs **WORKER SAFETY-1** and **WORKER SAFETY-2**. The project would include preparation and implementation of a Fire Prevention Plan during construction and O&M activities.
Part 9 of CCR Title 24, CFC. Establishes requirements for fire department access, fire protection systems, BESS design, installation, operation, and removal.	**Yes.** All project components would be consistent with the requirements of the CFC including those pertaining to fire apparatus access, and BESS design.
Local	
Alameda County General Plan. Establishes policies and actions that guide firesafe development and local emergency services.	**Yes.** The project would be consistent with the requirements set forth in the Alameda County General Plan. A Fire Prevention Plan would be required by COCs **WORKER SAFETY-1** and **WORKER SAFETY-2**. The project would include preparation and implementation of a Fire Prevention Plan during construction and O&M activities.
Alameda County Municipal Code. Contains the Alameda County Fire Code with requirements pertaining to fire safety.	**Yes.** All project components would be consistent with the Alameda County fire code.
Alameda County East Area Policy 320 and Policy 324. Establishes policies that guide adequacy of fire protection, road access, building materials, water supply, landscaping and clearance for development projects.	**Yes.** The project would be consistent with the requirements set forth in the Alameda County East Area Plan. A Fire Prevention Plan would be required by COCs **WORKER SAFETY-1** and **WORKER SAFETY-2**. The project would include preparation and implementation of a Fire Prevention Plan during construction and O&M activities.

5.7.4 Project Components Outside of CEC's Opt-In Certification

PG&E would be responsible for construction and operation of the project components outside of the CEC's Opt-In certification. **Section 2, Introduction**, provides a complete description of the project components outside the CEC's Opt-In certification. There would be minimal transport, use, storage and disposal of hazardous materials

associated with these project components. The use, storage, transport and disposal of hazardous materials would follow all applicable regulations. In the case of encountering unknown environmental contamination, PG&E would comply with all applicable regulations for ground disturbing activities. PG&E would follow all applicable regulations related to wildfires during construction and operation. Additionally, PG&E would implement appropriate operations from its Wildfire Mitigation Plan (PG&E 2025) and its Community Wildfire Safety Program, which has resulted in increased safety measures for powerline operations to reduce wildfire risk (AMLGMN 2024bb, PG&E 2024). Emergency response and evacuation would be consistent with procedures at the existing connecting Tesla substation. Based on the above discussion, hazards, hazardous materials/waste and wildfire impacts from construction and operation would be less than significant and no mitigation would be required.

5.7.5 Conclusions and Recommendations

As discussed above, with implementation of COCs, the project would have a less than significant impact related to hazardous materials, hazardous waste and wildfire and would conform with applicable LORS. Staff recommends adopting the conditions of certification as detailed in subsection "5.7.5 Proposed Conditions of Certification" below.

5.7.6 Proposed Conditions of Certification

The following proposed COCs include measures to both mitigate environmental impacts and ensure conformance with applicable LORS. The conditions below are enforceable as part of the CEC's certificate for the portions of the project constituting the site and related facility.

HAZ-1 The project owner shall prepare a Hazardous Materials Business Plan (HMBP) and a Spill Prevention Control and Countermeasure (SPCC) Plan and provide these plans to Hazardous Materials Division of the Alameda County Environmental Health Department Alameda County for review and comment and to the Compliance Project Manager (CPM) for review and approval prior to the start of operations.

Verification: At least 60 days prior to the start of operation the project owner shall prepare and submit the HMBP and SPCC Plan to the Hazardous Materials Division of the Alameda County Environmental Health Department for comment and to the CPM for review and approval. The project owner shall also provide the CPM with a copy of the transmittal letter to the Hazardous Materials Division of the Alameda County Environmental Health Department requesting review and comment. The HMBP and SPCC must be approved before start of operation of the project.

At least 30 days prior to the start of operation, the project owner shall provide copies of any comment letters received from the Hazardous Materials Division of the Alameda County Environmental Health Department along with any changes to the HMBP and SPCC plans for CPM review and approval. After CPM review

and approval, the project owner shall provide complete copies of the final HMBP and SPCC to the Hazardous Materials Division of the Alameda County Environmental Health Department sending copies of the correspondence to the CPM.

HAZ-2 After the start of project operation, the project owner shall not use any new hazardous material or change the quantity of hazardous materials that would require a change in the project's HMBP unless approved in advance by the CPM.

Verification: At least 30 days prior to changing the quantity of or using a new hazardous material onsite, the project owner shall notify and seek approval from the CPM in writing. The project owner shall provide to the CPM, in the Annual Compliance Report, the HMBP's list of hazardous materials and quantities contained at the facility.

HAZ-3 The project owner shall report new permanent or temporary hazardous waste identification numbers from the U.S. EPA or the Cal-EPA DTSC (as appropriate based on the type and quantity of hazardous waste generated) prior to generating any hazardous waste during demolition, construction, or operations.

Verification: The project owner shall keep a copy of the identification number(s) on file at the project site and provide documentation of the hazardous waste generation and notification and receipt of the number to the CPM in the next scheduled Monthly Compliance Report after receipt of the number. Submittal of the notification and issued number documentation to the CPM is only needed once, unless there is a change in ownership, operation, waste generation, or waste characteristics that requires a new notification to the U.S. EPA or the Cal-EPA DTSC. Documentation of any new or revised hazardous waste generation notifications or changes in identification number shall be provided to the CPM 30 days before the change occurs.

HAZ-4 Prior to commencing construction, a site-specific Construction Site Security Plan for the construction phase shall be prepared and made available to the CPM for review and approval.

The Construction Site Security Plan shall include the following:

- perimeter security consisting of fencing enclosing the construction area;
- security guards during hours when construction personnel are not present at the site;
- site access control consisting of a check-in procedure or tag system for construction personnel and visitors;

- written standard procedures for employees, contractors, and vendors when encountering suspicious objects or packages on site or off site;
- protocol for contacting law enforcement and the CPM in the event of suspicious activity, incident, or emergency; and
- evacuation procedures.

Verification: At least 30 days prior to commencing construction, the project owner shall notify the CPM that a site-specific Construction Security Plan to the CPM for review and approval.

HAZ-5 The project owner shall also prepare a site-specific security plan for the commissioning and operational phases that would be available to the CPM for review and approval. The project owner shall implement site security measures that address physical site security and hazardous materials storage. The level of security to be implemented shall not be less than that described below.

The Operation Security Plan for the BESS and project substation shall include the following:

1. permanent full perimeter fence or wall, at least eight feet high and topped with barbed wire or the equivalent (CCR Title 8, Section 2812.1 High Voltage Safety Order);
2. main entrance security gate, either hand operated or motorized;
3. evacuation procedures;
4. protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency;
5. written standard procedures for employees, contractors, and vendors when encountering suspicious objects or packages on site or off site;
    A. a statement (refer to sample, **Attachment A**), signed by the project owner certifying that background investigations have been conducted on all project personnel. Background investigations shall be restricted to determine the accuracy of employee identity and employment history and shall be conducted in accordance with state and federal laws regarding security and privacy;
    B. a statement(s) (refer to sample, **Attachment B**), signed by the contractor or authorized representative(s) for any permanent contractors or other technical contractors (as determined by the CPM after consultation with the project owner), that are present at any time on the site to repair, maintain, investigate, or conduct any other technical duties involving critical components (as determined by the CPM after consultation with the project owner) certifying that background investigations have been conducted on contractors who visit the project site;

6. site access controls for employees, contractors, vendors, and visitors;
7. a statement(s) (refer to sample, **Attachment C**), signed by the owners or authorized representative of hazardous materials transport vendors, certifying that they have prepared and implemented security plans that are consistent with 49 CFR 172.880, and that they have conducted employee background investigations in accordance with 49 CFR Part 1572, subparts A and B;
8. closed circuit TV (CCTV) monitoring system, recordable, and viewable in the O&M building (or remotely) with cameras able to pan, tilt, and zoom, have low-light capability, and able to view 100 percent of the perimeter fence, and outside entrances to the site for the BESS and O&M building; and,
9. additional measures to ensure adequate perimeter security consisting of either:
   A. perimeter breach detection or onsite motion detector capabilities; and
   B. security guard(s) present 24 hours per day, seven days per week; or
   C. facility personnel on site 24 hours per day, seven days per week.

The project owner shall fully implement the security plans and obtain CPM approval of any substantive modifications to those security plans. The CPM may authorize modifications to these measures, or may require additional measures such as protective barriers for critical facility components, or additional guidance provided by the U.S. Department of Homeland Security, the U.S. Department of Energy, or the North American Electrical Reliability Corporation (NERC), after consultation with both appropriate law enforcement agencies and the project owner.

Verification: At least 30 days prior to the initial receipt of hazardous materials onsite, the project owner shall submit a site-specific operations site security plan to the CPM for review and approval. In the annual compliance report, the project owner shall include signed statements similar to Attachments A and B that all current project employees and appropriate contractor background investigations have been performed, and that updated certification statements have been appended to the operations security plan. In the annual compliance report, the project owner shall include a signed statement similar to Attachment C that the operations security plan includes all current hazardous materials transport vendor certifications for security plans and employee background investigations.

HAZ-6 The project owner shall prepare and submit to the CPM a Soils Management Plan (SMP) prior to any ground disturbing activities. The SMP shall be prepared/approved by a California Registered Civil Engineer or a California Registered Geologist with sufficient experience in hazardous waste management. The purpose of the SMP is to establish appropriate management practices and procedures for handling impacted soil and/or groundwater or

other materials that may be encountered during construction activities to ensure worker protection from toxicant exposure. The SMP shall be updated as needed to reflect changes in laws, regulations, or site conditions. All ground disturbing activities at the site and potential disposal of contaminated soil and/or groundwater shall be conducted in accordance with the SMP. Where actions are required in accordance with the SMP, an SMP summary report, which includes all analytical data and other findings, shall be submitted once the earthwork has been completed.

Topics covered by the SMP shall include, but not be limited to:

- Land use history including description and locations of any known contamination.
- The nature and extent of any previous investigations and remediation at the site.
- The nature and extent of any unremediated contamination at the proposed site.
- A listing and description of institutional controls such as the county's excavation ordinance and other local, state, and federal regulations and laws that would apply to the project.
- Names and positions of individuals involved with site management and their specific roles.
- An earthwork schedule.
- A description of protocols for the investigation and evaluation of any previously unidentified contamination that may be encountered in time. The protocol shall be for temporary and permanent controls that may be required to reduce exposure to onsite workers, visitors, and the public.
- A site-specific Health and Safety Plan (HSP) to be implemented by all contractors and subcontractors at the site. The HSPs shall be specific to each of the contractors' or subcontractors' scopes of work. The HSPs shall be prepared by a Certified Industrial Hygienist and would protect onsite workers by including engineering controls, personal protective equipment, monitoring, and security to prevent unauthorized entry and to reduce construction related hazards. The HSPs shall address the possibility of encountering subsurface chemical contamination and include procedures to protect workers and the public. The HSPs shall be updated as needed if site conditions change significantly, such as discovery of contaminated soil or groundwater. Copies of the approved HSPs shall be kept at the project site.
- Hazardous waste determination and disposal procedures for known and previously unidentified contamination.

- Requirements for site-specific techniques at the site to minimize dust, manage stockpiles, run-on and run-off controls, waste disposal procedures, etc.
- Copies of relevant permits or closures from regulatory agencies.

Verification: At least 45 days prior to any ground disturbance, the project owner shall submit the SMP to the Alameda County CUPA for review and comment and to the CPM for review and approval. An SMP summary shall be submitted to the CPM within 30 days of completion of any ground disturbance.

HAZ-7 The project owner shall provide the resume of an experienced and qualified professional engineer or professional geologist, who shall be available for consultation during site characterization (if needed), demolition, excavation, and grading activities, to the CPM for review and approval. The resume shall reflect experience in remedial investigation and feasibility studies.

The professional engineer or professional geologist shall be given full authority by the project owner to oversee any earth moving activities that have the potential to disturb contaminated soil and/or groundwater.

Verification: At least 30 days prior to the start of site mobilization, the project owner shall submit the resume to the CPM for review and approval.

HAZ-8 If seemingly contaminated soil and/or groundwater is identified during site characterization, demolition, excavation, or grading at either the proposed site or linear facilities (as evidenced by discoloration, odor, detection by handheld instruments, or other signs), the professional engineer or professional geologist shall inspect the site, determine the need for sampling to confirm the nature and extent of contamination, and provide a written report to the project owner, Alameda County CUPA, and the CPM stating the recommended course of action.

Depending on the nature and extent of contamination, the professional engineer or professional geologist shall have the authority to temporarily suspend construction activity at that location for the protection of workers or the public. If, in the opinion of the professional engineer or professional geologist, significant remediation may be required, the project owner shall contact the CPM and representatives of the Alameda County CUPA for guidance and possible oversight.

Verification: The project owner shall submit any final reports filed by the professional engineer or professional geologist to the CPM within 5 days of their receipt. The project owner shall notify the CPM within 24 hours of any orders issued to halt construction.

HAZ-9 The project owner shall contract with a third-party consultant who shall be on-call and prepared to conduct real-time air quality monitoring if a BESS fire occurs as soon as possible but no later than four hours after fire initiation. Monitoring shall continue not less than four hours after visible flames are no longer present.

As a part of that contract, the project owner shall develop a Sampling and Analysis Plan (SAP) for air, water, and soil. Substances monitored shall include carbon monoxide, carbon dioxide, metals, HF, HCl, HCN, benzene, PM2.5, and ultrafine particulates of <0.1 µm in diameter. Additionally, sampling and analysis of soils on and off-site, surface wipe samples on and off-site, and nearby off-site surface waters during and after a BESS fire shall be conducted. The SAP shall be submitted to the CPM for review and approval and to the California Department of Health (CDPH) and the local county Department of Public Health for review and comment.

The project owner shall establish protocols with emergency responders to ensure that real-time air monitoring data is communicated to the incident commander. Additionally, water quality samples shall identify constituents in any firefighting water used to extinguish the fire and ensure that the appropriate actions are taken for water disposal or treatment after the fire.

Verification: The project owner shall submit the proposed SAP to the CPM 120 days prior to proposed BESS operations for review and approval and to the CDPH and local county DPH for review and comment. The project owner shall submit a letter with comments, if any, from the CDPH and local county DPH along with responses to comments and any proposed revisions of the SAP to the CPM for review and approval.

HAZ-10 To ensure vegetation management is maintained, the current owner shall obtain an inspection and report from a County-authorized Wildland Fire Safety Inspector (or 3rd party consultant) by June 1 of each year, certifying that vegetation management activities throughout have been performed pursuant to plans, that shall include, but not be limited to:

(1) 100-foot setbacks from the property line for BESS enclosures,

(2) removal of all vegetation within the security fence perimeter;

(3) vegetation management around power poles and lines in compliance with state requirements;

(4) 100 feet of defensible space around all buildings, if buildings are placed closer to the security perimeter fence than this minimum, then exterior fuel modification shall be provided to ensure at least 100 feet of defensible space is provided.

Verification: The project owner shall provide the vegetation management inspection report to the ACFD by June 1 annually for review and comment. The project owner shall provide to the CPM, in the Annual Compliance Report, the vegetation management inspection report, including ACFD comments, if any, and any corrective actions taken by the project owner for review and approval.

SAMPLE CERTIFICATION (Attachment A)

Affidavit of Compliance for Project Owners

I,

_____

(Name of person signing affidavit) (Title)

do hereby certify that background investigations to ascertain the accuracy of the identity and employment history of all employees of

_____

(Company name)

for employment at

_____

(Project name and location)

have been conducted as required by the California Energy Commission Decision for the above-named project.

_____

(Signature of officer or agent)

Dated this _____ day of _____, 20 _____.

THIS AFFIDAVIT OF COMPLIANCE SHALL BE APPENDED TO THE PROJECT SECURITY PLAN AND SHALL BE RETAINED AT ALL TIMES AT THE PROJECT SITE FOR REVIEW BY THE CALIFORNIA ENERGY COMMISSION COMPLIANCE PROJECT MANAGER.

SAMPLE CERTIFICATION (Attachment B)

Affidavit of Compliance for Contractors

I,

_____

(Name of person signing affidavit) (Title)

do hereby certify that background investigations to ascertain the accuracy of the identity and employment history of all employees of

_____

Company name)

for contract work at

_____

(Project name and location)

have been conducted as required by the California Energy Commission Decision for the above-named project.

_____

(Signature of officer or agent)

Dated this _____ day of _____, 20 _____.

THIS AFFIDAVIT OF COMPLIANCE SHALL BE APPENDED TO THE PROJECT SECURITY PLAN AND SHALL BE RETAINED AT ALL TIMES AT THE PROJECT SITE FOR REVIEW BY THE CALIFORNIA ENERGY COMMISSION COMPLIANCE PROJECT MANAGER.

SAMPLE CERTIFICATION (Attachment C)

Affidavit of Compliance for Hazardous Materials Transport Vendors

I,

_____

(Name of person signing affidavit) (Title)

do hereby certify that the below-named company has prepared and implemented security plans in conformity with 49 CFR 172.880 and has conducted employee background investigations in conformity with 49 CFR 172, subparts A and B,

_____

(Company name)

for hazardous materials delivery to

_____

(Project name and location)

as required by the California Energy Commission Decision for the above-named project.

_____

(Signature of officer or agent)

Dated this _____ day of _____, 20 _____.

THIS AFFIDAVIT OF COMPLIANCE SHALL BE APPENDED TO THE PROJECT SECURITY PLAN AND SHALL BE RETAINED AT ALL TIMES AT THE PROJECT SITE FOR REVIEW BY THE CALIFORNIA ENERGY COMMISSION COMPLIANCE PROJECT MANAGER.

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5.8 Land Use, Agriculture, and Forestry

5.8.1 Environmental Setting

Existing Conditions

The Potentia-Viridi Battery Energy Storage System (BESS) (project) is proposed to be located in eastern Alameda County at 17257 Patterson Pass Road (Assessor Parcel Number (APN) 99B-7890-2-4) (AMLGMN 2024p, AMLGMN 2024o, AC 2025a). The operational project would be on approximately 70 acres of the approximately 235.97-acre parcel (AMLGMN 2024p, AMLGMN 2024o). The project would consist of an approximately 3,200 megawatt-hour BESS facility, three operations and maintenance buildings, a project substation, and an overhead generation intertie (gen-tie) line running east across APN 99B-7890-2-6 to connect the project to the Tesla Substation, owned by Pacific Gas and Electric Company (PG&E) and located on APN 99B-7885-12 (AMLGMN 2024p, AMLGMN 2024j).

The main project parcel (APN 99B-7890-2-4) and one of the parcels the gen-tie line would cross (APN 99B-7890-2-6) are undeveloped annual grassland used for cattle grazing (AMLGMN 2024p, AMLGMN 2024j, Dudek 2025a). These two parcels are under a Williamson Act contract established in 1972 that was most recently renewed in 2024 (AMLGMN 2024j, AMLGMN 2024qq, DOC 2024; AC 2025b). A Williamson Act contract is a contract between a landowner and local government which ensures a property remains largely in agricultural or open space use in exchange for property tax benefits (DOC 2025a). While the parcels are subject to a Williamson Act contract, they are designated by the DOC as Grazing Lands and are not identified as Important Farmlands (including Prime Farmlands) (DOC 2022).

The CEC has certification authority over the project to a point of junction with any interconnected electrical transmission system, which is the point of change of ownership at a transmission tower on the east side of APN 99B-7890-2-6. The CEC certificate for the project would extend only to this transmission tower. The California Public Utilities Commission would have jurisdiction over the remaining project transmission structures extending from this point to the Tesla Substation, since PG&E would construct and own this portion of the gen-tie. The overall length of the gen-tie line is approximately one-half mile; the PG&E portion is approximately 1,300 feet from the point of interconnection to the Tesla substation. This **Land Use, Agriculture, and Forestry** section evaluates environmental impacts from the entire project, including the portion to be built and operated by PG&E. See **Section 2, Introduction**, for a description of the project components within the CEC's Opt-In certification and project components outside the CEC's Opt-In certification.

Surrounding land uses include mostly grazing agricultural land uses and transmission infrastructure, such as high voltage transmission lines and electrical substations, and the Altamont Corridor Express railway (AMLGMN 2024p, AMLGMN 2024o, AMLGMN

2024vv). The City of Tracy is about 2.5 miles to the northeast of the project (AMLGMN 2024j). There are no airports within 20,000 feet of the project site.

Regulatory

There are state and local laws, ordinances, regulations, and standards (LORS) related to land use and agriculture that would apply to the project. These LORS are discussed below, and a discussion of the project's conformance with these LORS is found later in subsection, "5.8.3 Project Conformance with Applicable LORS."

Federal

No federal regulations apply to this project. The project is not within 20,000 feet of an airport and has no features exceeding 200 feet in height, so Federal Aviation Administration (FAA) notification is not needed. The project is not within 1,000 feet of a military installation, within military special use airspace, or beneath a military low-level flight path, so notification of the military is also not needed (OPR 2025a; OPR 2025b).

State

California Land Conservation Act of 1965 (Williamson Act, Government Code section 51200 *et seq*.). This Act authorizes local governments to contract with private landowners for the purpose of preserving agricultural and open space lands from urban development. These contracts are referred to as Williamson Act contracts, and the term of the contract is at least 10 years. (DOC 2025a). Williamson Act contracts prevent development of the subject land unless the use is deemed compatible. (Gov. Code § 51243(a).) The term of the contract automatically renews each year, unless it is nonrenewed or canceled. The most common method for withdrawing from a Williamson Act contract is filing a notice of nonrenewal, which can be initiated by either the land use agency or the landowner. Under this process, the contract is ended after a 9-year nonrenewal period, during which taxes gradually increase every year. A Williamson Act contract cancellation is also an option under the circumstances and conditions set forth in Government Code section 51280 et seq. In such cases, landowners may petition the board or council of their county or city for cancellation of the Williamson Act contract. The board or council may grant tentative cancellation only if it makes required statutory findings), that (1) the cancellation is consistent with the purposes of the chapter, and (2) the cancellation is in the public interest. (Government Code § 51282(a).)

California Government Code section 51238 states that, unless otherwise decided by a local board or council, the erection, construction, alteration, or maintenance of electric facilities, as well as other specified types of facilities, are determined to be compatible uses within any agricultural preserve. Government Code section 51238 states that the board of supervisors may impose conditions on lands or land uses to be placed within preserves to permit and encourage compatible uses in conformity with Government Code section 51238.1.

Local

Alameda County East County Area Plan. The Alameda County East County Area Plan is the only section of the General Plan with land use and agriculture policies pertaining to the proposed project (AC 2002). The project's General Plan land use designation is Large Parcel Agriculture (LPA) (AC 2025b). This plan also shows the project as outside of the Urban Growth Boundary in an area designated as a Wind Resource Area (AC 2002, Figures 3 and 4).

Alameda County Zoning Code. The Alameda County Zoning Code includes discussion of allowed uses and development standards (such as minimum setbacks and maximum height) for parcels in various zoning districts (AC 2025c). The project's zoning classification is Agriculture-Combining B District (A-BE) (AC 2025b).

Alameda County Uniform Rules and Procedures Governing Agricultural Preserves and Williamson Act Contracts (Uniform Rules). Alameda County's Uniform Rules document provides regulations for development on Williamson Act lands in the County (AC 2011). Alameda County most recently revised this document on October 11, 2011, to meet the Department of Conservation's (DOC's) standards for Williamson Act implementation.

Cumulative

There are other past and future projects in the vicinity of the project. Impacts from these projects could potentially combine with impacts from the Potentia-Viridi BESS project to cause significant cumulative impacts. The projects that comprise the cumulative setting for Land Use, Agriculture, and Forestry are the projects listed in **Appendix A, Table A-1** that are under a Williamson Act contract. These projects are:

Map Id Number	Project Name	Description	Location	Distance to Project (miles)	Status
1	Mulqueeney Ranch Wind Repowering Project (Grazing Land and Non-Prime Williamson Act)	Installation of up to 36 new wind turbines, replacing the 518 old generation wind turbines that have been removed	Southeast quadrant of the Alameda County portion of the Altamont Pass, north and south Patterson Pass between 1-2 miles north of Tesla Road and 1 mile south of I-580	0	Under Construction
3	Jess Ranch Compost Project (Grazing Land, Williamson Act Contract Nonrenewal)	Industrial- Project facility would receive and process organic materials,	15850 Jess Ranch Road, Tracy (99B-7800-007-07)	1	Approved

Map Id Number	Project Name	Description	Location	Distance to Project (miles)	Status
		primarily green waste			
9	Sand Hill Wind Repowering Project (Grazing Land and Non-Prime Williamson Act)	Energy-Wind Turbine. Installation of up to 40 wind turbines	Along north and south sides of Altamont Pass Road, west of Grant Line Road, along east and west sides of Mountain House Road, and on both sides of Bethany Reservoir, west of Delta-Mendota Canal northwest of Mountain House Road, and southeast of the intersection of Christensen and Bruns Road	2.14	Approved
28	Viracocha Hills BESS (Grazing Land and Non-Prime Williamson Act)	BESS	North of Altamont Pass Road, 1mile east of Dyer Road	4.18	Under Review

5.8.2 Environmental Impacts

LAND USE, AGRICULTURE, AND FORESTRY	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project physically divide an established community?	☐	☐	☐	☒
b. Would the project 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?	☐	☐	☒	☐
c. Would the project Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?[1]	☐	☐	☐	☒

LAND USE, AGRICULTURE, AND FORESTRY	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
d. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☒	☐
e. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code, section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code, section 51104(g))?[2]	☐	☐	☐	☒
f. Would the project result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
g. Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, land use and planning and agriculture and forestry resources.

1 In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland.

2 In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

5.8.2.1 Methodology and Thresholds of Significance

CEC staff evaluated the proposed project according to the provisions in California Environmental Quality Act (CEQA) (Pub. Resources Code § 21000 et. seq.) and the CEQA Guidelines (Cal. Code Regs., tit. 14, § 15000 et. seq.). There are no other applicable methodologies or thresholds of significance applicable to this project.

Impact discussions below for construction and operation pertain to project components both within the CEC's Opt-In Certification and project components outside the CEC's Opt-In certification.

5.8.2.2 Direct and Indirect Impacts

a. Would the project physically divide an established community?

Construction

No Impact. Construction activities would not physically divide an established community. Construction activities would occur on three adjacent parcels in an undeveloped rural area with no nearby pedestrian, bicycle, or transit facilities (AMLGMN 2024j; AMLGMN 2024u). These parcels do not serve as links between communities or parts of a community. Although the transmission line from the main project site would need to cross Patterson Pass Road on its way to the PG&E Tesla Substation, the applicant stated that no full road closures are expected during construction (AMLGMN 2024u). Condition of Certification **TRANS-1** would require the project to implement a Traffic Management Plan during construction to ensure that road access is maintained. (See **Section 5.14, Transportation**, for more information.)

For these reasons, construction activities would not physically divide an established community, and there would be no impact.

Operation

No Impact. The permanent, operational project structures would not physically divide an existing community. The project would occupy currently undeveloped rural parcels that do not serve as a link between communities or parts of a community. The off-site gen-tie line would not obstruct any roadways, sidewalks, bikeways, or railways. Because the project would not occupy parcels linking communities and would not prevent pedestrian, bike, or vehicular movement between different areas of the community, there would be no impact.

b. Would the project 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?

Construction and Operation

Less Than Significant Impact. While the project would conflict with a regulation in Alameda County's Uniform Rules and Procedures Governing Agricultural Preserves and Williamson Act Contracts, this conflict would result in less than significant impacts, as discussed below. The following are state and local regulations affecting the project and an analysis of project conformance with these regulations.

State

California Land Conservation Act of 1965 (Williamson Act, Government Code section 51200 *et seq.*). This Act authorizes local governments to contract with private landowners for the purpose of preserving agricultural and open space lands

from urban development. These contracts are referred to as Williamson Act contracts (DOC 2025a).

As discussed later in Section d. of this **Land Use, Agriculture, and Forestry** section, the project conflicts with Alameda County's Uniform Rules and Procedures applying to Williamson Act contracts. These conflicts do not cause a significant impact, as discussed later.

Local

Alameda County East County Area Plan. The Alameda County East County Area Plan is the only section of the General Plan with land use and agriculture policies pertaining to the proposed project (AC 2002). The project is designated Large Parcel Agriculture (LPA) with respect to the East County Area Plan (AC 2025b). This plan also shows the project as outside of the Urban Growth Boundary in an area designated as a Wind Resource Area (AC 2002, Figures 3 and 4). East County Area Plan policies applicable to the project are discussed below:

Policy: Large Parcel Agriculture land use designation (page 47 of the East County Area Plan): *The maximum building intensity for non-residential buildings shall be .01 FAR (floor area ratio) but (the maximum building square footage allowed shall) not (be) less than 20,000 square feet.*

Apart from infrastructure under Policy 13, all buildings shall be on a contiguous development envelope not to exceed 2 acres, except they may be located outside the envelope if necessary for security reasons or, if structures for agricultural use, necessary for agricultural use.

…This designation permits agricultural uses, agricultural processing facilities, limited agricultural support service uses, secondary residential units, visitor-serving commercial facilities, 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*** (page 47, emphasis added).

Conformance Analysis: Consistent. On the main project parcel (APN 99B-7890-2-4), there is a proposed operations and maintenance building of approximately 5,000 square feet and a control building of approximately 1,040 square feet for a building floor area total of 6,040 square feet (AMLGMN 2024o, Table 2-1). The total parcel size is approximately 236 acres, or 10,280,160 square feet (AC 2025a). This translates to a FAR of approximately 0.0006, which is less than the maximum of 0.01.

The development envelope for the project is approximately 70 acres. This exceeds the 2-acre development envelope maximum in this regulation for buildings. However, this is permissible because the project meets the definition of "infrastructure" under Policy 13,

which includes public facilities and all structures and development necessary for the provision of public services and utilities.

The project is also consistent with the uses allowed in the Large Parcel Agriculture land use designation, which include public and quasi-public uses, utility corridors, and similar uses.

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* (referring to Measure D, approved by voters in the year 2000, which is reflected in the current East County Area Plan)*. 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.*

Conformance Analysis: Consistent. The BESS would not exceed what is allowed in the Large Parcel Agriculture land use designation, which includes public and quasi-public uses, utility corridors, and similar uses. It would provide electrical infrastructure needed to support adequate service for California, including the East County. The BESS facility would also not be growth-inducing, as it would be used to power the grid when additional electricity is needed, accommodating the integration of intermittent renewables like solar and wind power.

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.*

Conformance Analysis: Consistent. The project would be classified as a public facility or similar use, which is allowable outside the Urban Growth Boundary. Policy 54 includes as examples of a public facility: limited infrastructure, hospitals, research facilities, landfill sites, and jails. Policy 218 in the East County Area Plan includes the following other examples of a public facility: parks and recreational facilities, schools, child care facilities, police, fire, and emergency medical facilities, solid waste, water, storm drainage, flood control, subregional facilities, utilities, etc. Policy 311 lists the additional examples of wastewater treatment and communications facilities. The project would be similar in scale to these types of uses and most similar to the listed utility use.

Policy 71: *The County shall conserve prime soils (Class I and Class II, as defined by the USDA Soil Conservation Service Land Capability Classification) and Farmland of Statewide Importance and Unique Farmland (as defined by the California Department of*

Conservation Farmland Mapping and Monitoring Program) outside the Urban Growth Boundary.

Conformance Analysis: Consistent. The project would not be on Prime Farmland, which has soil with the best physical and chemical characteristics for producing crops, Farmland of Statewide Importance, or Unique Farmland. It is on Non-Prime Farmland designated as Grazing Land by the DOC (DOC 2022). The USDA soil classifications for the project site are not Class I or Class II prime soils, but Class IV soils, which are soils that have very severe limitations that restrict the choice of plants or require very careful management, or both.

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.*

Conformance Analysis: Consistent. The project would occur on 70 acres of an approximately 236-acre parcel, with varying buffer space of at least 100 feet between the structures and the property lines (Dudek 2025d). This would be more than sufficient for separation between the project and adjacent grazing land, given that the project would have less than significant impacts with relation to noise, hazardous materials, wildfires, and air quality. (See **Sections 5.9, Noise and Vibration**, **5.7, Hazards, Hazardous Materials/Waste, and Wildfire**, and **5.1, Air Quality** for details.)

Policy 138: *The County shall allow development and expansion of major public facilities (e.g., hospitals, research facilities, landfill sites, jails, etc.) in appropriate locations inside and outside the Urban Growth Boundary consistent with the policies and Land Use Diagram of the East County Area Plan.*

Conformance Analysis: Consistent. As discussed here, the project would be consistent with the policies of the East County Area Plan, including the land uses allowed under the project site's Large Parcel Agriculture land use designation.

Policy 139: *The County shall ensure that new major public facilities are properly sited to avoid land use conflicts and potential health and safety risks.*

Conformance Analysis: Consistent. The project would be consistent with the Large Parcel Agriculture land use designation and would not interfere with surrounding agricultural lands. Siting of the project would cause no significant health and safety risks. See **Sections 5.1, Air Quality, 5.7, Hazards, Hazardous Materials/Waste,**

and Wildfire, 5.9, Noise and Vibration, 5.10, Public Health, 5.13, Transmission Line Safety and Nuisance, and **5.14, Transportation** of this document for details.

Policy 173: The County shall discourage the development of uses and structures that are not compatible with wind energy operations within the Wind Resource Area.

Conformance Analysis: Consistent. The project, located within the County's designated Wind Resource Area, would be a similar use to wind energy facilities and would not obstruct or interfere with wind energy operations in any way. The project is also not adjacent to wind energy facilities.

Alameda County Zoning Code. The Alameda County Zoning Code includes discussion of allowed uses and development standards (such as minimum setbacks and maximum height) for parcels in various zoning districts (AC 2025c).

Regulation: The project's zone classification is Agriculture-Combining B District (A-BE) (AC 2025b). The Agriculture zoning designation does not specifically address battery storage, which is not unexpected given that it is a newer technology. However, per Section 17.06.040J of the Alameda County Zoning Ordinance, a similar use, "public utility building or uses", may be allowed in the Agriculture zoning district with a conditional use permit. This conditional use permit would be issued by Alameda County's Board of Zoning Adjustments if the project was under the jurisdiction of Alameda County (AC 2025c).

Conformance Analysis. Consistent. CEC staff has determined that the project would meet the required findings for a Conditional Use Permit, per Section 17.54.130 of the Alameda County Zoning Ordinance, as discussed below (AC 2025c).

Conditional Use Permit Considerations.

In reviewing a CUP application, special review is needed to determine whether or not the use:

a) *Is required by the public need;*

   Analysis: The project is needed to provide the electrical grid with additional capacity during peak demand. The project would charge when demand for electricity is low and discharge electricity to the grid when demand is high. This would help accommodate intermittent renewable sources of energy, such as solar and wind energy, and would reduce the need for more polluting natural gas peaker plants. See **Section 4.3, Transmission System Engineering** for more details.

b) *Will be properly related to other land uses and transportation and service facilities in the vicinity;*

   Analysis: The project would be in an area with other electrical infrastructure, such as transmission lines and substations. The project site is designated by the

East County Area Plan as part of a Wind Resource Area (AC 2002, Figures 3 and 4), meaning that the area is appropriate for wind energy facilities, a use similar to a BESS plant. Also, the project would generate very few operational trips and would not lead to population growth. No new transportation facilities or service facilities would be needed, and existing transportation and service facilities would not be significantly impacted. (See **Section 5.14, Transportation**, for more information.)

c) *If permitted, will under all the circumstances and conditions of the particular case, materially affect adversely the health or safety of persons residing or working in the vicinity, or be materially detrimental to the public welfare or injurious to property or improvements in the neighborhood;*

Analysis: The project would not adversely affect the health or safety of people living or working nearby or be detrimental to the public welfare or to properties or improvements in the neighborhood. The project would not have significant off-site impacts or significant health and safety risks. See **Sections 5.1, Air Quality, 5.7, Hazards, Hazardous Materials/Waste, and Wildfire**, **5.9, Noise and Vibration, 5.10, Public Health, 5.13, Transmission Line Safety and Nuisance**, and **5.14, Transportation** of this document for details.

d) *Will be contrary to the specific intent clauses or performance standards established for the district, in which it is to be located.*

Analysis: The project would not be contrary to the specific intent clauses or performance standards established for the Agriculture zoning district. The Agriculture zoning district was "established to promote implementation of general plan land use proposals for agricultural and other nonurban uses" and does not exclude electrical infrastructure or public utility uses. As discussed above, the project meets the other required findings for a conditional use permit, such as not adversely affecting the public or properties nearby.

Because CEC staff was able to make the findings Alameda County would require for issuance of a conditional use permit, the project would be consistent with the Alameda County Zoning Code's allowed uses in the Agriculture-Combining B District.

Regulation: The Agriculture zoning designation requires development to be on a lot size of at least 100 acres (AC 2025c, Section 17.06.060). It also requires setbacks of at least 30 feet for the front yard, at least 10 feet for the rear yard, and at least 10 feet for the side yards. No maximum height is provided (AC 2025c, Section 17.06.070).

Conformance Analysis: Consistent. With respect to the zoning district's development standards, the project parcel is more than 100 acres, and the project setbacks exceed those required. Structures have varying setbacks of at least 100 feet between the structures and the property lines (Dudek 2025d). Therefore, the project is consistent with the Alameda County Zoning Code's development standards for the Agriculture-Combining B District. Condition of Certification (COC) **LAND-1**, which would require

review of the final project site plan by Alameda County, would ensure compliance with zoning code standards.

Alameda County Uniform Rules and Procedures Governing Agricultural Preserves and Williamson Act Contracts (Uniform Rules). Alameda County's Uniform Rules document provides a framework for creating and modifying Williamson Act contracts in Alameda County. It also provides regulations for development on Williamson Act lands in the County and rules for determining compatible uses and development on contracted land (AC 2011).

Conformance Analysis: Inconsistent. The project is not consistent with Uniform Rule 2, Section I.B.3.c of this document, which states that compatible, non-agricultural uses that do not qualify as buildings shall be cumulatively restricted to no more than 10 percent of the contracted property, or 10 acres, whichever is less. Alameda County refers to this as the 10/10 Rule (AC 2022; AC 2011, page 2-2). The majority of the project structures do not qualify as buildings, with the exception of an operations and maintenance building and control building totaling approximately 6,040 square feet, on the main project parcel (APN 99B-7890-2-4) (AMLGMN 2024o, Table 2-1).The project would be clustered in an area so that the remaining contracted land remains devoted to grazing but would be located on approximately 70 acres, with approximately 58 acres of permanent disturbance (AMLGMN 2024o, Table 2-2), which is more than 10 acres. This is a LORS nonconformance, but a less than significant environmental impact. The reason is that although the project site is under a Williamson Act contract, the project site is classified by the DOC as non-prime Grazing Land. This is not an Important Farmland category, so exceeding the permitted development on the site would not affect Important Farmland. See Section d. of this Land Use, Agriculture, and Forestry section for more details.

c. Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?[1]

Construction and Operation

No Impact. The California Department of Conservation designates the main project parcel (APN 99B-7890-2-4) and the main transmission line parcel (APN 99B-7890-2-6)

1 In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

as Grazing Land. The PG&E Tesla Substation parcel with the gen-tie connection (APN 99B-7885-12) is designated as Urban and Built-Up Land (DOC 2022). Neither of these designations is an Important Farmland category of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (DOC 2025b). Therefore, construction and operation of the project would have no impact to Important Farmland.

d. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

Construction and Operation

Less Than Significant Impact. The project conflicts with a Williamson Act contract through its nonconformance with Alameda County's Uniform Rules and Procedures Governing Agricultural Preserves and Williamson Act Contracts. Specifically, the project conflicts with Uniform Rule 2.I.B.3.c, which states that compatible, non-agricultural uses that do not qualify as buildings shall be cumulatively restricted to no more than 10 percent of the contracted property, or 10 acres, whichever is less (the 10/10 Rule) (AC 2022; AC 2011, page 2-2). The conflict with Williamson Act regulations is a LORS nonconformance, but a less than significant environmental impact. The reason is that although the project site is under a Williamson Act contract, the project site is classified by the DOC as non-prime Grazing Land. This is not an Important Farmland category, so exceeding the permitted development on the site would not affect Important Farmland. More details are discussed later in this subsection.

Existing Zoning

As discussed earlier under subsection b), the project is consistent with existing agricultural zoning for the project site. CEC staff was able to make the conditional use permit findings required by Alameda County for project approval, and the project met the required development standards for lot size and setbacks.

Williamson Act Contract

A Williamson Act contract is a contract between a landowner and local government which ensures a property remains largely in agricultural or open space use in exchange for property tax benefits (DOC 2025a). The main project parcel (APN 99B-7890-2-4) and the main gen-tie line parcel (APN 99B-7890-2-6) are under the same Williamson Act contract established in 1972, which was most recently renewed in 2024 (AMLGMN 2024j, AMLGMN 2024qq, DOC 2024). The land under the contract is defined as Non-Prime Farmland, meaning that the soil does not have the best physical and chemical features to sustain long-term agricultural production (DOC 2024; DOC 2025b). The total acreage covered by the Williamson Act contract is 232.79 acres for the main project parcel, and 43.35 acres for the gen-tie parcel (DOC 2024). The remaining parcel on which the gen-tie line would be located, the Tesla Substation parcel (APN 99B-7885-12), is not under a Williamson Act contract (DOC 2024). In Alameda County, the County's "Uniform Rules and Procedures Governing Agricultural Preserves and Williamson Act Contracts" regulates Williamson Act contracts.

Uses Allowed by Contract and Definition of Electric Facility

It should be noted that the list of allowed uses in the Williamson Act contract governing the project parcels does not include energy storage of any type, including battery energy storage, or standalone electrical facilities. It is not unexpected that battery energy storage is not included, given that battery energy storage systems are a relatively new technology, and the contract was formalized in 1972. (See Attachment 1, Exhibit B.) The only listed energy-related allowed uses are "drilling for and removal of oil, gas or other hydrocarbon substances, and mining and quarrying" and supportive electrical facilities associated with a permitted use. However, the contract does allow for other uses that have been deemed as compatible uses by Alameda County. The contract states: "The Board of Supervisors may, from time to time, during the time of this contract or renewal thereof, by resolution add to those uses set forth in Exhibit B other uses which are compatible with the agricultural uses within the preserve where said property is located. The provisions of this contract and any resolution supplementing the uses permitted in Exhibit B are not intended to limit or supersede the planning and zoning powers of the County" (AMLGMN 2024qq).

The application states that under the Williamson Act, electrical facilities are determined to be a compatible use, absent an express finding to the contrary, referencing Government Code section 51238(a)(1) (AMLGMN 2024j, p. 3.6-6). According to state law: *Notwithstanding any determination of compatible uses by the county or city pursuant to this article, unless the board or council after notice and hearing makes a finding to the contrary, the erection, construction, alteration, or maintenance of gas, electric, water, communication, or agricultural laborer housing facilities are hereby determined to be compatible uses within any agricultural preserve".* (Gov. Code, § 51238 (a)(1).) Alameda County reiterates this state law in its local regulations. In Alameda County's Uniform Rules, Section II.E.1 states that: "*The erection, construction, alteration or maintenance of gas, electric, water or communication utility facilities are compatible uses unless the Board of Supervisors, after notice and hearing, makes a finding to the contrary (see Government Code Section 51238*)" (AC 2011, page 2-11).

Neither state law nor Alameda County's Uniform Rules, which govern Williamson Act contracts in the County, define what is meant by "electric facility." Government agencies differ in their interpretation of what an "electric facility" is, with some defining it more narrowly as transmission lines supporting agricultural uses and others more broadly to include electric generation facilities (Breakfield 2012). Although Alameda County does not formally define which type of electric facility would be compatible with a Williamson Act contract, in their 2022 "Large Commercial Solar and Battery Storage Statement of Policy Components" (Policy Components), the County defines battery storage facilities as "electrical transmission corridor equipment" for the purposes of General Plan conformance (AC 2022). This implies that Alameda County would consider battery storage facilities as electric facilities for the purposes of compatibility with Williamson Act contracts; however, no formal policy has been approved. It could be argued that the definition of "electric facility" may include battery storage facilities, in the absence of regulations prohibiting this interpretation. This is the position CEC staff

has taken, although it is not fully clear what types of facilities are intended to be included in the definition, in the absence of state or local guidance.

However, it is clear that the proposed transmission infrastructure would be included even under the most narrow interpretation of "electric facility", meaning that the project's transmission infrastructure located on Williamson Act parcels are clearly compatible with Williamson Act contracts. Accordingly, these project components would not require the cancellation of Williamson Act contracts under Government Code Section 51238. The impact associated with construction and operation of these project transmission infrastructure would be less than significant.

Project Conformance with Alameda County Uniform Rules and Procedures Governing Agricultural Preserves and Williamson Act Contracts

If Alameda County was the jurisdictional agency reviewing this project, the project would be required to meet certain standards, as discussed below.

Alameda County Williamson Act Uniform Rules and Procedures – Uniform Rule 2, Compatible Uses and Development on Contracted Land, Section I.B.3.c., Location by Types of Compatible Use (10/10 Rule) (AC 2011, pages 2-2 to 2-3). To preserve agricultural lands, the County's Uniform Rules limit the location and scale of compatible development on Williamson Act contracted properties to maintain agriculture as the primary use of the land. In Uniform Rule 2, under the "Location by Types of Use" header, Section I.B.3.c states that compatible, non-agricultural uses that do not qualify as buildings shall be cumulatively restricted to no more than 10 percent of the contracted property, or 10 acres, whichever is less, which is referred to by Alameda County as the 10/10 Rule (AC 2022; AC 2011, page 2-2)[2]. The proposed project's size exceeds the County's 10/10 Rule on the main project parcel, 99B-7890-2-4, which would house the BESS. Ten percent of the project's parcel size is (0.10)(235.97), which is approximately 24 acres. In this case, 10 acres is less than ten percent of the project parcel's size, so the project may not exceed 10 acres. The project exceeds this at approximately 70 acres, with approximately 58 acres of permanent disturbance (AMLGMN 2024o, Table 2-2).

The project's conflict with Williamson Act regulations is a LORS nonconformance, but a less than significant environmental impact. The reason is that although the project site is under a Williamson Act contract, the project site is classified by the DOC as non-prime Grazing Land. This is not an Important Farmland category, so exceeding the permitted development on the site would not affect Important Farmland. Furthermore,

2 The Policy Components document notes the need to amend the County's Uniform Rules to allow compatible uses, such as battery storage facilities, on non-prime Williamson Act land to exceed these limits. The Policy Components document states that any project exceeding the 10/10 Rule would be required to be an agrivoltaics project, which the document defines as "the establishment of… energy generation with active agriculture (grazing/crops) on the same site" (AC 2022). BESS facilities would not be considered to be agrivoltaics projects because compared to solar panels or wind facilities, they have large footprints.

while not directly resolving the LORS conflict, proposed COC **LAND-2**, discussed later, would require the project owner to conserve agricultural land equivalent to the amount of Grazing Land lost to the project.

Alameda County Williamson Act Uniform Rules and Procedures – Section III.B.3 – Findings for a Compatible Use Determination (AC 2011, page 2-14). If Alameda County was the reviewing agency, the applicant would be required to apply for a Compatible Use Determination with the County, in accordance with Section III of the County's Uniform Rules. CEC staff has determined that the project does not meet the findings required for a Compatible Use Determination from Alameda County due to its size, although it does meet the findings for an Exception to the Compatible Use Determination, as discussed below. The discussion of the Compatible Use Determination findings is below.

The Alameda County Williamson Act Compatible Use Determination involves a two-part determination: 1) whether there is an existing commercial agricultural use that meets the thresholds established in Uniform Rule 1; and, 2) whether the proposed use or development meets other required findings in the Uniform Rules and Procedures.

a) *There is an existing commercial agricultural use on the parcel that meets one of the thresholds established in Uniform Rule 1.*

   Analysis: Consistent. The main project parcel, APN 99B-7890-2-4, is currently in use for cattle grazing and has been in use for this since before the creation of the Williamson Act contract in 1972 (Dudek 2025a). According to Uniform Rule 1, grazing of livestock on non-prime land at least 40 acres in size, like the project site, is defined as a commercial use if it yields some gross annual revenue, and if at least 60 percent of the property is used for commercial agriculture (AC 2011, page 1-6). Grazing on the BESS site meets these criteria, and so there is an existing commercial agricultural use on the parcel (Dudek 2025a). The project parcel which the gen-tie line crosses, APN 99B-7890-2-6, is also undeveloped land used for cattle grazing and meets these criteria.

b) *The proposed use is included on Table 1: Compatible Uses – A-District or on Table 2: Compatible Uses – CA-District depending on (in) which zoning district the contracted parcel(s) is located.*

   Analysis: Consistent. Table 1 on pages 2-16 to 2-19 of Alameda County's Uniform Rules lists uses compatible with Williamson Act contracted lands in the A-District, or Agriculture zoning district. The most similar compatible use to the project is "erection, construction, alteration, or maintenance of gas, electric, water, and communication facilities". Energy facilities such as solar panels and commercial wind turbines are also listed as compatible uses. As discussed earlier, Alameda County's 2022 "Policy Components" defines battery storage facilities as "electrical transmission corridor equipment" for the purposes of General Plan conformance (AC 2022). This, along with the listing of similar energy facilities as compatible, implies that Alameda County would consider battery storage facilities as electric

facilities compatible with Williamson Act contracts. The gen-tie line would also be considered an electric facility, which is compatible with Williamson Act contracts.

c) *The proposed use is consistent with the Principles of Compatibility listed under Section I.A. of this Rule. If the compatible use was allowed by contract before June 7, 1994, the Principles of Compatibility do not apply; although the use must be compatible within the limits of the definition of the Williamson Act at that time (see Government Code Section 51238.3).*

Analysis: Inconsistent. The proposed use was not allowed by contract before June 7, 1994, and it is inconsistent with the Principles of Compatibility, located in Alameda County's Uniform Rules in Section I.A. on page 2-1, as analyzed below.

Principles of Compatibility:

Uses approved on contracted lands shall be consistent with all of the following principles of compatibility:

1) *The use will not significantly compromise the long-term productive agricultural capability of the contracted property or other contracted lands in agricultural preserves. (See also Government Code Section 51238.1).*

Analysis: Inconsistent. The use would significantly compromise the long-term productive agricultural capability of the contracted property, but not other contracted lands in agricultural preserves.

The proposed BESS would be on approximately 70 acres, or approximately 30 percent, of a 235.97-acre parcel (APN 99B-7890-2-4) that is part of a larger Williamson Act contract. This leaves approximately 70 percent of the parcel for continued grazing uses and meets the Uniform Rules' definition of non-prime land eligible for a Williamson Act contract, which requires that at least 60 percent of a contracted parcel be used for commercial agriculture (AC 2011, p. 1-6). However, development of the BESS would significantly reduce the grazable land of the property, and it would not meet the 10/10 Rule for development on a Williamson Act contract (discussed earlier). Development of the gen-tie portions of the project would not significantly reduce grazable land, given the small footprint of gen-tie line infrastructure.

The project would not compromise the long-term agricultural capability of other contracted lands in agricultural preserves. The total acreage of land under the Williamson Act contract governing the project parcels is approximately 4,990 acres, and the proposed BESS site would only be approximately 1.4 percent of the total contracted properties. Also, the BESS facility would not have offsite impacts which would significantly compromise the long-term agricultural capability of other contracted lands. It would not be growth-inducing or produce excessive noise, hazards, or fire risk. (See **Sections 5.9, Noise and Vibration** and **5.7, Hazards, Hazardous Materials/Waste, and Wildfire.**)

2) *The use will not significantly displace or impair current or reasonably foreseeable agricultural operations on the contracted property or on other contracted lands in agricultural preserves. Uses that significantly displace agricultural operations on the contracted property may be deemed compatible if they relate directly to the production of commercial agricultural products on the contracted property or neighboring lands, including activities such as harvesting, processing, or shipping. (See also Government Code Section 51238.1).*

   Analysis: Inconsistent. The use would significantly displace or impair current or reasonably foreseeable agricultural operations on the contracted property but not on other contracted lands in agricultural preserves. The proposed BESS would be on approximately 70 acres, or approximately 30 percent, of a 235.97-acre parcel (APN 99B-7890-2-4) that is part of a larger Williamson Act contract. This leaves approximately 70 percent of the parcel for continued grazing uses and meets the Uniform Rules' definition of non-prime land eligible for a Williamson Act contract, which requires that at least 60 percent of a contracted parcel be used for commercial agriculture (AC 2011, p. 1-6). However, development of the BESS would significantly reduce the grazable land of the property, and it would not meet the 10/10 Rule for development on a Williamson Act contract (discussed earlier). The use would not relate directly to the production of commercial agricultural products on the contracted property or neighboring lands and therefore would not meet this criterion for maintaining compatibility with the contract. Development of the gen-tie portions of the project would not significantly displace or impair agricultural operations, given their small footprint.

   The project would not compromise the long-term agricultural capability of other contracted lands in agricultural preserves. The total acreage of land under the Williamson Act contract is approximately 4,990 acres, and the proposed BESS site would only be approximately 1.4 percent of the total contracted properties. Also, the BESS facility would not have offsite impacts which would significantly compromise the long-term agricultural capability of other contracted lands. It would not be growth-inducing or produce excessive noise, hazards, or fire risk. (See **Sections 5.9, Noise and Vibration** and **5.7, Hazards, Hazardous Materials/Waste, and Wildfire.**)

3) *The use will not result in the significant removal of adjacent contracted land from agricultural use or open space use. (See Government Code Section 51238.1).*

   Analysis: Consistent. The use would not result in the significant removal of adjacent contracted land from agricultural use or open space use. The Williamson Act contract that covers APN 99B-7890-2-4, the parcel proposed for location of the BESS, also covers other nearby parcels. The total acreage of land under this contract is approximately 4,990 acres (Dudek 2025a;

AMLGMN 2024j, AMLGMN 2024qq). The proposed project would remove approximately 70 acres of grazing land from this contract, but it would not impact the rest of the grazing lands under the Williamson Act contract, or any other nearby contracted agricultural lands. The project would not result in limits on agricultural activities on nearby parcels. It also would not be growth-inducing or produce excessive noise, hazards, or fire risk that would result in significant removal of adjacent contracted land from agricultural use or open space use. (See **Sections 5.9, Noise and Vibration** and **5.7, Hazards, Hazardous Materials/Waste, and Wildfire.**)

4) *The use will not result in the significant increase in the density of the temporary or permanent human population that could hinder or impair agricultural operations on the contracted property. (See Government Code Section 51220.5).*

Analysis: Consistent. The use would not result in a significant increase in the density of the temporary or permanent human population. The use would be battery storage and associated transmission infrastructure which supports the existing electrical grid, and it would not attract or lead to new residents nearby that would impact agricultural operations on the contracted property.

Based on the findings above, the proposed use is not fully consistent with the Principles of Compatibility (located in Alameda County's Uniform Rules in Section I.A. on page 2-1) because it is not consistent with the first two principles of compatibility.

d) The proposed use is in an appropriate scale with the primary agricultural use so as to be considered incidental to the primary use.

Analysis: Inconsistent. The proposed BESS would be on approximately 70 acres, or approximately 30 percent, of a 235.97-acre parcel (APN 99B-7890-2-4). This leaves approximately 70 percent of the parcel for continued grazing uses and meets the definition of non-prime land eligible for a Williamson Act contract, which requires that at least 60 percent of the property be used for commercial agriculture (AC 2011, p. 1-6). However, development of the BESS would significantly reduce the grazable land of the property, and it would not meet the 10/10 Rule for development on a Williamson Act contract (discussed earlier). The use would also not relate to the production of commercial agricultural products on the contracted property. For these reasons, the project would not be considered incidental to the primary agricultural use of the property.

e) The planned use is conditioned on any applicable standards found under Section II. of this Rule or as found necessary by planning staff.

Analysis: Consistent. There are no applicable standards to the project under Section II. of this Rule, and Alameda County staff has not currently proposed any conditions.

As discussed above, the project does not fully meet Alameda County's "Findings for a Compatible Use Determination" (Section III.B.3 of the Uniform Rules) which the County would normally need to make to approve a use on Williamson Act contracted land (AC 2011, page 2-14). However, the Uniform Rules provides an exception for certain projects on non-prime agricultural land that do not meet the first two principles of compatibility. This exception allows these projects to be approved through a conditional use permit, provided required findings are made, as discussed below.

Alameda County Williamson Act Uniform Rules and Procedures – Section III.B.4 – Exception to Compatible Use Determination Findings (AC 2011, page 2-14). Section III.B.4 of the Uniform Rules states that: "*An exception to the findings required under Section III.B.3 above shall be made for uses on non-prime land that cannot meet the first two principles of compatibility listed under Section I. A.*". As discussed earlier, the project is on non-prime land and is inconsistent with the first two principles of compatibility, which are:

- *The use will not significantly compromise the long-term productive agricultural capability of the contracted property or other contracted lands in agricultural preserves; and*
- *The use will not significantly displace or impair current or reasonably foreseeable agricultural operations on the contracted property or on other contracted lands in agricultural preserves. Uses that significantly displace agricultural operations on the contracted property may be deemed compatible if they relate directly to the production of commercial agricultural products on the contracted property or neighboring lands, including activities such as harvesting, processing, or shipping.*

Due to the project's location on non-prime agricultural land and its nonconformance with the first two principles of compatibility, the project qualifies for a possible exception under Section III.B.4 of Alameda County's Uniform Rules (AC 2011). The Uniform Rules allow for uses to be approved on the basis of a conditional use permit provided required findings are made (although the CEC retains exclusive jurisdiction over the project and its certification is in lieu of a conditional use permit). Staff found that the findings can be made for an exception, as discussed below (AC 2011, page 2-14):

Alameda County Williamson Act Uniform Rules and Procedures – Section III.B.4 – Findings for an Exception to the Compatible Use Determination Findings (AC 2011, page 2-14).

a. *There is an existing commercial agricultural use on the parcel that meets one of the thresholds established in Uniform Rule 1.*

Analysis: Consistent. As discussed earlier, the main project parcel, APN 99B-7890-2-4, is currently in use for cattle grazing and has been in use for this since before the creation of the Williamson Act contract in 1972 (Dudek 2025a). According to Uniform Rule 1, grazing of livestock on non-prime land at least 40 acres in size, like the project site, is defined as a commercial use if it yields some gross annual

revenue, and if at least 60 percent of the property is used for commercial agriculture (AC 2011, page 1-6). Grazing on the BESS site meets these criteria, and so there is an existing commercial agricultural use on the parcel (Dudek 2025a). The project parcel which the gen-tie line crosses, APN 99B-7890-2-6, is also undeveloped land used for cattle grazing and meets these criteria.

b. Conditions imposed on the renewed permit will avoid or mitigate impacts to agriculture that could occur on contracted land or on adjacent lands. These conditions shall include any standards in the New Rules if applicable and if feasible.

Analysis: Consistent. Grazing land is not an Important Farmland category recognized by the DOC, but COC **LAND-2** would ensure LORS compliance by requiring the project owner to conserve agricultural land equivalent to the amount of grazing land lost to the project.

c. The effects on agricultural productivity and the loss or displacement of agriculture has been considered.

Analysis: Consistent. Grazing land is not an Important Farmland category recognized by the DOC, but COC **LAND-2** would ensure LORS compliance by requiring the project owner to conserve agricultural land equivalent to the amount of grazing land lost to the project.

d. The use is consistent with the purposes of the Act to preserve agricultural land and open-space land (as defined).

Analysis: Consistent. The use may be categorized as an electric facility, which the Act permits. The use also would not lead to population growth in the area or affect agriculture on nearby properties.

e. The use is not a residential subdivision.

Analysis: Consistent. The use is not a residential subdivision.

For these reasons, with implementation of proposed COC **LAND-2**, the project would meet the findings for an Exception to the Compatible Use Determination Findings, which would remedy its nonconformance with the Compatible Use Determination Findings found in Alameda County's Uniform Rules (AC 2011, Section II.B.3, page 2-14). However, because the project is inconsistent with the 10/10 Rule in Alameda County's Uniform Rules (Uniform Rule 2, Section I.B.3.c), it seems unlikely that Alameda County, if they had jurisdiction over the project, would approve a conditional use permit for the project, even with the project meeting the findings for an Exception to the Compatible Use Determination findings.

In conclusion, the project is consistent with the site's agricultural zoning and mostly consistent with the Williamson Act regulations contained in Alameda County's Uniform Rules and Procedures Governing Agricultural Preserves and Williamson Act Contracts.

While the project meets the findings for an Exception to the Compatible Use Determination Findings, it is not consistent with the 10/10 Rule in the Uniform Rules. This is a LORS nonconformance which is discussed further in **Section 11, Project's Inconsistency with State and Local Laws and Staff's CEQA Override Findings and Recommendation**, but not an environmental impact, as the project site is classified by the DOC as non-prime Grazing Land, which is not an Important Farmland category.

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

Construction and Operation

No Impact. The main project site and its offsite components are not on or near forest land, timberland, or timberland zoned Timberland Production.

f. Would the project result in the loss of forest land or conversion of forest land to non-forest use?

Construction and Operation

No Impact. The main project site and its offsite components are not on or near forest land.

g. Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

Construction and Operation

No Impact. Construction of the project would not induce growth or cause any other changes in the existing environment which could result in conversion of Farmland to non-agricultural use. The DOC does not classify any of the project parcels as Agricultural Land (Prime Farmland, Farmland of Statewide Importance, or Unique Farmland, according to Section 21060.1 of the California Public Resources Code). Much of the surrounding land is classified by the DOC as Grazing Land (DOC 2022), and energy storage would not be disruptive to this use. There is no forest land in the area.

5.8.2.3 Cumulative Impacts

Less Than Significant Impact. There are four other projects nearby that are either under review, approved, or under construction and are on Williamson Act lands. These projects are: Mulqueeney Ranch Wind Repowering Project, Jess Ranch Compost

Project, Sand Hill Wind Repowering Project, and Viracocha Hills BESS. These project sites are all under Williamson Act contracts for non-prime agricultural land, with the exception of the site of the Jess Ranch Compost Project, which has a Williamson Act contract in non-renewal status that is scheduled to terminate. All projects areon land classified by the DOC as Grazing Land. Because all of these projects, including the proposed project, are on non-prime agricultural land classified as Grazing Land, which is not an Important Farmland category, cumulative impacts to agriculture are less than significant.

5.8.3 Project Conformance with Applicable LORS

Table 5.8-1 below details CEC staff's determination of conformance with applicable local, state and federal LORS, including any proposed COCs, where applicable, to ensure the project would conform with LORS. As shown in this table, CEC staff concludes that with implementation of specific COCs, the proposed project would conform with all applicable LORS. The subsection below, "5.8.5 Proposed Conditions of Certification," contains the full text of the referenced COCs.

TABLE 5.8-1 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis For Determination
Local	
Alameda County East County Area Plan	
Large Parcel Agriculture land use designation (page 47): The maximum building intensity for non-residential buildings shall be .01 FAR (floor area ratio) but (the maximum building square footage allowed shall) not (be) less than 20,000 square feet. Apart from infrastructure under Policy 13, all buildings shall be on a contiguous development envelope not to exceed 2 acres, except they may be outside the envelope if necessary for security reasons or, if structures for agricultural use, necessary for agricultural use. Subject to the provisions of the Initiative, this designation permits agricultural uses, agricultural processing facilities, limited agricultural support service uses, secondary residential units, visitor-serving commercial facilities, 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**.	**Yes.** On the main project parcel (APN 99B-7890-2-4), there is a proposed operations and maintenance building of approximately 5,000 square feet and a control building of approximately 1,040 square feet for a building floor area total of 6,040 square feet (AMLGMN 2024o, Table 2-1). The total parcel size is approximately 236 acres, or 10,280,160 square feet (AC 2025a). This translates to a FAR of approximately 0.0006, which is less than the maximum of 0.01. The development envelope for the project is approximately 70 acres. This exceeds the 2-acre development envelope maximum in this regulation for buildings. However, this is permissible because the project meets the definition of "infrastructure" under Policy 13, which includes public facilities and all structures and development necessary for the provision of public services and utilities. The project is also consistent with the uses allowed in the Large Parcel Agriculture land use designation, which include public and quasi-public uses, utility corridors, and similar uses.
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	**Yes.** The BESS does not exceed what is allowed in the Large Parcel Agriculture land use designation, which includes public and quasi-public uses, utility corridors, and similar uses. It would provide electrical infrastructure needed to support

TABLE 5.8-1 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
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.	adequate service for the East County. The BESS facility would also not be growth-inducing, as it would be used to power the grid when additional electricity is needed, accommodating the integration of intermittent renewables like solar and wind power.
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.	**Yes.** The project is a public facility, which is allowable outside the Urban Growth Boundary.
Policy 71: The County shall conserve prime soils (Class I and Class II, as defined by the USDA Soil Conservation Service Land Capability Classification) and Farmland of Statewide Importance and Unique Farmland (as defined by the California Department of Conservation Farmland Mapping and Monitoring Program) outside the Urban Growth Boundary.	**Yes.** The project is not on Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. It is on Non-Prime Farmland designated as Grazing Land by the Department of Conservation.
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 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.	**Yes.** The project would occur on 70 acres of an approximately 236-acre parcel, with varying buffer space of at least 100 feet between the structures and the property lines (Dudek 2025d). This would be more than sufficient for separation between the project and adjacent grazing land, given that BESS facilities would have less than significant impacts with relation to noise, hazardous materials, wildfires, and air quality. (See **Sections 5.9, Noise and Vibration, 5.7, Hazards, Hazardous Materials/Waste, and Wildfire**, and **5.1, Air Quality** for details.)
Policy 138: The County shall allow development and expansion of major public facilities (e.g., hospitals, research facilities, landfill sites, jails, etc.) in appropriate locations inside and outside the Urban Growth Boundary consistent with the policies and Land Use Diagram of the East County Area Plan.	**Yes.** As discussed here, the project is consistent with the policies of the East County Area Plan, including the land uses allowed under the project site's Large Parcel Agriculture land use designation.
Policy 139: The County shall ensure that new major public facilities are properly sited to avoid land use conflicts and potential health and safety risks.	**Yes.** The project is consistent with the Large Parcel Agriculture land use designation and would not interfere with surrounding agricultural lands. Siting of the project would cause no significant health and safety risks. See **Sections 5.1, Air Quality, 5.7,**

TABLE 5.8-1 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
	Hazards, Hazardous Materials/Waste, and **Wildfire, 5.9, Noise and Vibration**, **5.10, Public Health, 5.13, Transmission Line Safety and Nuisance**, and **5.14, Transportation** of this document for details.
Policy 173: The County shall discourage the development of uses and structures that are not compatible with wind energy operations within the Wind Resource Area.	**Yes.** The project would be a similar use to wind energy facilities and would not obstruct or interfere with wind energy operations in any way. The project is also not adjacent to wind energy facilities.
Alameda County Zoning Code	
The project's zone classification is Agriculture-Combining B District (A-BE) (AC 2025b). The Agriculture zoning designation does not specifically address battery storage, which is not unexpected given that it is a newertechnology. However, per Section 17.06.040J of the Alameda County Zoning Ordinance, a similar use, "public utility building or uses", may be allowed in the Agriculture zoning district with a conditional use permit. This conditional use permit would be issued by Alameda County's Board of Zoning Adjustments if the project was under the jurisdiction of Alameda County (AC 2025c). The Agriculture zoning designation requires development to be on a lot size of at least 100 acres (AC 2025c, Section 17.06.060). It also requires setbacks of at least 30 feet for the front yard, at least 10 feet for the rear yard, and at least 10 feet for the side yards. No maximum height is provided (AC 2025c, Section 17.06.070).	**Yes.** CEC staff was able to make the findings Alameda County would require for issuance of a conditional use permit, as discussed earlier. With respect to the zoning district's development standards, the project parcel is more than 100 acres large, and the project setbacks exceed those required. Structures have varying setbacks of at least 100 feet between the structures and the property lines (Dudek 2025d). COC **LAND-1**, which would require review of the final project site plan by Alameda County, would ensure compliance with zoning code standards.
Alameda County Uniform Rules and Procedures Governing Agricultural Preserves and Williamson Act Contracts	
Alameda County Williamson Act Uniform Rules and Procedures – Sections III.B.3 and III.B.5 – Findings for a Compatible Use Determination and Findings for an Exception to the Compatible Use Determination Findings (AC 2011, pages 2-14 and 2-15).	**Yes.** The project meets the findings for an Exception to the Compatible Use Determination with implementation of COC **LAND-2**.
Uniform Rule 2.I.B.3.c states that compatible, non-agricultural uses that do not qualify as buildings shall be cumulatively restricted to no more than 10% of the contracted property, or 10 acres, whichever is less, which is referred to by Alameda County as the 10/10 Rule (AC 2022; AC 2011, page 2-2).	**No.** The project exceeds 10 acres and 10% of the contracted property.

5.8.4 Conclusions and Recommendations

As discussed above, the project would have less than significant impacts with respect to Land Use, Agriculture, and Forestry. With implementation of COCs for the project components within the CEC's Opt-In certification, the project would comply with LORS related to land use, agriculture, and forestry, with the exception of the 10/10 Rule limiting the size of the project to no more than 10 acres. CEC staff concluded that this conflict is not an environmental impact, as the project site is classified by the DOC as non-prime Grazing Land which is not an Important Farmland category. See **Section 11, Project's Inconsistency with State and Local Laws and Staff's CEQA Override Findings and Recommendation**, for discussion of LORS inconsistency and CEC staff's recommendation. No mitigation measures are needed for components of the project outside the CEC's certification authority.

CEC staff recommends adopting the conditions of certification as detailed below in subsection "5.8.5 Proposed Conditions of Certification". These conditions are enforceable as part of the CEC's certificate for the portions of the project constituting the site and related facilities.

5.8.5 Proposed Conditions of Certification

LAND-1 Prior to any grading or development for the permanent project facilities under CEC jurisdiction, the project owner shall develop a site plan and submit it to the Alameda County Planning Department for comment to ensure compliance with local regulations. The project owner shall adhere to CPM-approved site plans and ensure that local regulations are complied with during construction and operation.

Verification: At least 60 days prior to any grading or development for permanent project facilities under CEC jurisdiction, the project owner shall submit proposed site plans for these facilities to the Alameda County Planning Department for review and comment, and to the CPM for approval. The project owner shall provide any review comments from Alameda County to the CPM at least 30 days prior to any grading or development for these permanent project facilities.

LAND-2 Prior to any grading or development for the permanent project facilities under CEC jurisdiction, the project owner shall conserve agricultural land at an amount equivalent to the Grazing Land lost to project development. Options include conservation easements with the Tri-Valley Conservancy or California Rangeland Trust, or other arrangements, including fees for agricultural conservation.

Verification: At least 60 days prior to any project grading or building, the project owner shall provide documentation to the CPM verifying implementation of the selected option(s) and acceptance by Alameda County.

5.8.6 Recommended Mitigation Measures

There are no recommended mitigation measures for land use, agriculture, and forestry.

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5.9 Noise and Vibration

5.9.1 Environmental Setting

Existing Conditions

The Potentia-Viridi Battery Energy Storage System (project) area primarily consists of fallowed grasslands (AMLGMN 2024o, Section 2.1.1). Land uses in the immediate area around the project include undeveloped rural agricultural land, multiple high-voltage transmission lines and electrical substations, rural roads, and railroad lines (AMLGMN 2024p, Section 1.2). The project would be on approximately 102 acres of land (AMLGMN 2024o Section 2.1). See **Section 2, Introduction**, for a description of the project components within the California Energy Commission's (CEC's) Opt-In certification and project components outside the CEC's Opt-In certification.

The project is in eastern Alameda County along Patterson Pass Road, southwest of Interstate 580 and Interstate 205 (AMLGMN 2024o, Figure 2-1, Figure 2-2, Figure 2-3).

The gen-tie line would extend southeast from the project substation, crossing Patterson Pass Rd, and then proceed east to the combined Point of Interconnection (POI); Point of Change of Ownership (POCO) at the transmission structure approximately 1,300 feet from the fenceline of the Tesla substation. The nearest municipality to the project site is the city of Tracy, approximately 2.6 miles to the northeast. There are a few single-family residences near the Tesla substation's southern and eastern boundaries, with the nearest residence approximately 1,550 feet southeast of the edge of the main project construction area and 550 feet south of the proposed gen-tie line. The predominant ambient noise sources include traffic along existing roadways and distant light aircraft (AMLGMN 2024j, Section 3.7.1.10).

A long-term ambient noise monitoring survey was conducted in the areas surrounding the project site from February 13th through February 14th, 2024 (Dudek 2025z, Section 4.1). The applicant surveyed two monitoring locations—LT-1 south of the project site along Patterson Pass Road, and LT-2 east of the project site adjacent to Midway Road. The average ambient sound levels measured at LT-1 and LT-2 during daytime hours (7 A.M. to 10 P.M.) were approximately 70 and 57 decibels on the A-weighted scale (dBA) L_{eq}, respectively. During nighttime hours (10 P.M. to 7 A.M.), the average ambient sound levels measured at LT-1 and LT-2 were approximately 62 and 51 dBA, respectively.

In addition, a short-term noise measurement was conducted on February 13th, 2024 at ST-1, which is east of the project site adjacent to West Patterson Road. The measurements were taken during daytime hours during an interval of 20 minutes. The short-term noise level was 67 dBA L_{eq} (Dudek 2025z, Section 4.1, Table 3).

Regulatory

Federal

Occupational Safety and Health Act (OSHA). The Department of Labor, Occupational Safety and Health Administration (OSHA) has adopted regulations (29 C.F.R. Section 1910.95) designed to protect workers against the effects of occupational noise exposure. These regulations list permissible noise exposure levels as a function of the amount of time during which the worker is exposed. The regulations further specify a hearing conservation program that involves monitoring the noise to which workers are exposed, assuring that workers are made aware of overexposure to noise, and periodically testing the workers' hearing to detect any degradation.

State

Cal-OSHA. Cal-OSHA has circulated Occupational Noise Exposure Regulations (Cal. Code Regs., tit. 8, Section 5095-5099) that set employee noise exposure limits. These standards are equivalent to the federal OSHA standards.

Local

Alameda County General Plan – 2022 Amended

Noise Element. The Noise Element includes guidelines for noise-compatible land use categories (Alameda 2022). The guidelines include the California Land Use Compatibility Guidelines table, which identifies ranges of noise levels for a variety of land use categories and development types and classifies them as: Normally Acceptable, Conditionally Acceptable, Normally Unacceptable, or Clearly Unacceptable. The California Land Use Compatibility Guidelines table is recreated below in **Table 5.9-1**.

The General Plan also includes several policies that aim to protect residential and other noise-sensitive land uses from exposure to harmful or annoying noise levels. The following are General Plan policies applicable to the project:

- HS-53: Where feasible and appropriate, develop and implement noise reduction measures when undertaking improvements, extensions, or design changes to Alameda streets.
- HS-59: Require noise reduction strategies in all construction projects. Require a vibration impact assessment for proposed projects in which heavy-duty construction equipment would be used (e.g. pile driving, bulldozing) within 200 feet of an existing structure or sensitive receptor. If applicable, the city shall require all feasible mitigation measures to be implemented to ensure that no damage to structures will occur and disturbance to sensitive receptors would be minimized.
- HS-60: In making a determination of impact under the California Environmental Quality Act (CEQA), consider the following impacts to be "significant" if the proposed project causes: an increase in the day-night average sound level (L_{dn}) of 4 or more dBA if the resulting noise level would exceed that described as normally acceptable

for the affected land use, as indicated by State guidelines, or any increase in L_{dn} of 6 dBA or more.

TABLE 5.9-1 LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENTS

Land Use	Normally Acceptable[1] (L_{dn}[2] or CNEL[3])	Conditionally Acceptable[4] (L_{dn} or CNEL)	Normally Unacceptable[5] (L_{dn} or CNEL)	Clearly Unacceptable[6] (L_{dn} or CNEL)
Residential – Low Density Single-family, Duplex, Mobile Homes	50-60	55-70	70-75	75-85
Residential – Multi. Family	50-65	60-70	70-75	75-85
Transient Lodging – Motels, Hotels	50-65	60-70	70-80	80-85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50-70	60-70	70-80	80-85
Auditoriums, Concert Halls, Amphitheaters	—	50-70	—	65-85
Sports Arena, Outdoor Spectator Sports	—	50-75	—	70-85
Playgrounds, Neighborhood Parks	50-70	—	67.5-75	72.5-85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50-75	—	70-80	80-85
Office Buildings, Business Commercial and Professional	50-70	—	67.5-77.5	75-85
Industrial, Manufacturing, Utilities, Agriculture	50-75	70-80	75-85	—

1 Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
2 L_{dn} is day-night average sound level, which is the 24-hour average sound pressure level calculated with a 10 dBA penalty added to nighttime hours (7 A.M. to 10 P.M.).
3 CNEL or Community Noise Equivalent Level, which is the 24-hour average sound pressure level calculated with a 5 dBA penalty added to hours from 7 A.M. to 10 P.M. and a 10 dBA penalty added to 10 P.M. to 7 A.M.
4 Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirement is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
5 Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
6 Clearly Unacceptable: New construction or development should generally not be undertaken.

Alameda County Ordinance, Chapter 6.60 (Noise)

The Alameda County Noise Ordinance includes noise measurement criteria, exterior noise standards, and noise source exemptions. Section 6.60.040 of the Noise Ordinance establishes noise regulations for single-family and multi-family residences, schools, hospitals, churches, public libraries, and commercial properties in both incorporated and unincorporated areas of Alameda County (Alameda 2022). The County's Exterior Noise Level Standards for different cumulative number of minutes in any one-hour period are shown in **Table 5.9-2** and **5.9-3** below. The mentioned standards apply within 50 feet of the affected sensitive receptors.

TABLE 5.9-2 RECEIVING LAND USE – SINGLE- OR MULTIPLE FAMILY RESIDENTIAL, SCHOOL, HOSPITAL, CHURCH, OR PUBLIC LIBRARY PROPERTIES EXTERIOR NOISE LEVEL STANDARDS (dBA)

Category	Cumulative Number of minutes in any one-hour time period	Noise Level Standards, dBA	
		Daytime 7 A.M. to 10 P.M	Nighttime 10 P.M. to 7 A.M.
1	30	50	45
2	15	55	50
3	5	60	55
4	1	65	60
5	0	70	65

TABLE 5.9-3 RECEIVING LAND USE – COMMERCIAL PROPERTIES EXTERIOR NOISE LEVEL STANDARDS (dBA)

Category	Cumulative Number of minutes in any one-hour time period	Noise Level Standards, dBA	
		Daytime 7 A.M. to 10 P.M	Nighttime 10 P.M. to 7 A.M.
1	30	65	60
2	15	70	65
3	5	75	70
4	1	80	75
5	0	85	80

According to the County's Noise Ordinance, if the measured ambient noise level exceeds the applicable noise level standard in any category above (**Table 5.9-2**), the applicable standard shall be adjusted to equate the ambient noise level. Each of the noise level standards specified above shall be reduced by five dBA L_{eq} for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. If the intruding noise source is continuous and cannot reasonably be discontinued or stopped sufficiently whereby the ambient noise level can be measured, the noise level measured while the source is in operation shall be compared directly to the noise level standards.

The following activities are exempt from County's Noise Ordinance applicable to the project:

- Public Health, Welfare and Safety Activities: The provisions of this chapter shall not apply to construction or maintenance and repair operations conducted by public agencies and/or utility companies or their contractors which are deemed necessary to serve the best interests of the public and to protect the public health, welfare and safety, including, but not limited to street sweeping, debris and limb removal, removal of downed wires, restoring electrical service, repairing traffic signals, unplugging sewers, vacuuming catch basins, repairing of water hydrants and mains, gas lines, oil lines, sewers, storm drains, roads, sidewalks, etc.
- Construction: The provisions of this chapter shall not apply to noise sources associated with construction, provided said activities do not take place before 7 A.M. or after 7 p.m. on any day except Saturday or Sunday, or before 8 A.M. or after 5 P.M. on Saturday or Sunday.

Cumulative

Section 15130 of the CEQA Guidelines (Cal. Code Regs., tit. 14) requires a discussion of cumulative environmental impacts. Cumulative impacts are two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. The CEQA Guidelines require that the discussion reflect the severity of the impacts and the likelihood of their occurrence but need not provide as much detail as the discussion of the impacts attributable to the project alone.

Pursuant to CEQA, a cumulative impacts analysis can be performed by either 1) summarizing growth projections in an adopted general plan or in a prior certified environmental document, or 2) compiling a list of past, present, and probable future projects producing related or cumulative impacts. The second method has been utilized for the purposes of this staff assessment. However, the project would have no cumulative noise impacts with past, present, or probable future projects, because there are no other projects within a distance where their noise could combine with that of the project to create a cumulative impact (this distance is typically one mile) (**Appendix A, Table A-1**).

5.9.2 Environmental Impacts

NOISE AND VIBRATION	**Significant and Unavoidable Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Would the project 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 applicable standards of other agencies?	☐	☒	☐	☐

NOISE AND VIBRATION	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b. Would the project result in generation of excessive ground borne vibration or ground borne noise levels?	☐	☐	☒	☐
c. 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 two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, noise.

5.9.2.1 Methodology and Thresholds of Significance

The construction and operation of any power plant and large industrial facilities create noise, or undesired sound. The character and loudness of this noise, the times of day or night that it occurs, and the proximity of the facility to sensitive receptors (humans) combine to determine whether the facility would meet applicable noise control laws and ordinances, and whether it would cause significant adverse environmental impacts.

In addition, vibration may be produced from construction practices, such as blasting or pile driving. The ground-borne energy of vibration has the potential to cause structural damage and annoyance to humans.

In addition to the above environmental checklist, CEC staff used the following methodology and thresholds of significance to evaluate the project.

Methodology

The California Environmental Quality Act (CEQA) Guidelines state that a project would normally be considered to have a significant impact if noise levels conflict with adopted environmental standards or plans (County's noise level threshold), or if noise levels generated by the project would substantially increase existing ambient noise levels at noise-sensitive receivers on a permanent or temporary basis.

Thresholds of Significance

Generally, an increase of 3 dBA is noticeable and an increase of 5 dBA is distinct. An increase of 5 dBA is considered less than significant, particularly if the resulting noise level does not exceed established community noise standard. Other factors, such as the frequency of occurrence of the noise and time of day/night it occurs, are also commonly considered in determining if such an increase is clearly significant or not.

There are no adopted thresholds for an increase in dBA level to be considered a significant impact for construction activities. Noise due to construction activities are considered to be less than significant if the construction activity is temporary and the use of heavy equipment and noisy activities is limited to daytime hours. However, an increase of 10 dBA or more during the day can be perceived as noisy (triggering a community reaction) and warrant additional measures to address the noise levels. An increase of 10 dBA corresponds to a doubling of loudness or dBA level and is generally considered to be the starting point at which significant noise impacts may occur (triggering a community reaction). It is very difficult to identify the exact level of noise resulting from construction because it fluctuates based on many factors over the course of a week, day, or even hour. It also depends on other factors, such as intervening structures, land topography and land cover. For example, intervening structures block or impede sound waves, and undulating topography and land roughness would play a role in attenuating the propagation of noise waves. Therefore, performance standards (i.e., a complaint and redress process) are ultimately used as a backstop measure to address any impacts that are perceived by the community.

Alameda County General Plan Noise Element establishes noise level thresholds and noise limitations for new projects.

The California Department of Transportation's (Caltrans) Transportation and Construction Vibration Guidance Manual includes the Federal Transit Administration's (FTA) methods and findings. The Caltrans manual states that for construction activities that generate vibration, the threshold of human response begins at a peak particle velocity (PPV) of 0.16 inch per second (in/sec). This is characterized by Caltrans as a "distinctly perceptible" event with an incident range of transient to continuous (Caltrans 2013). A level of 0.20 in/sec has been found to be annoying to people in buildings and can pose a risk of architectural damage to buildings.

Impact discussions below for construction and operation pertain to project components both within the CEC's Opt-In Certification and project components outside the CEC's Opt-In certification.

5.9.2.2 Direct and Indirect Impacts

a. Would the project 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 applicable standards of other agencies?

Construction

Less Than Significant with Mitigation Incorporated. The Alameda County General Plan does not establish noise level thresholds for construction activities. However, the County's Noise Ordinance exempts construction activities occurring between 7:00 A.M. and 7:00 P.M. on weekdays and between 8:00 A.M. and 5:00 P.M. on weekends, from

its noise level standards. Construction would take approximately 18 months to complete, followed by an additional six months of testing and commissioning (AMLGMN 2024p, Section 1.5). The construction phases include:

- site preparation
- civil work and grading
- foundations and underground equipment
- BESS equipment installation
- project substation installation
- linear facility construction

Construction activities would likely utilize equipment that could generate noise levels that exceed ambient noise, such as concrete saws, graders, cranes, dozers, and rollers (Dudek 2025z, Section 6, Table 5). Construction equipment typically produces noise levels between 73 dBA L_{eq} (i.e., welder/torch) and 90 dBA L_{eq} (i.e., concrete saw) at 50 feet. Additionally, pile driving equipment would not be used during the construction of this project.

The gen-tie construction phase would be closest to the sensitive receptors (residences). The nearest residence to both the project site and the gen-tie construction activity would be approximately 1,550 feet southeast of the main project construction area and 550 feet southeast of the gen-tie construction. The noise level due to the gen-tie construction activity at this residence would reach 64 dBA L_{eq} (Dudek 2025z, Table 7). The daytime ambient noise level at the closest sensitive receptor to the gen-tie construction is approximately 70 dBA L_{eq}. The construction noise level of 61 dBA L_{eq} at the closest sensitive receptor to gen-tie construction would be below the ambient noise level at this location.

Furthermore, to address additional noise impacts that might be perceived noisy by the community, CEC staff proposes Conditions of Certification (COCs) **NOISE-1, NOISE-2, NOISE-4**, and **NOISE-5**. These conditions would provide the public with noise complaint and redress process (**NOISE-1**), would require construction workers and employees noise protection (**NOISE-2** and **NOISE-4**), and would place restrictions on construction activities (**NOISE-5**).

With implementation of COCs **NOISE-1**, **NOISE-2, NOISE-4**, and **NOISE-5**, project construction activities would not result in generation of a substantial 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 applicable standards of other agencies and would not create a significant adverse noise impact.

Operation

Less Than Significant Impact. The proposed project and its facilities would consist of BESS, substation, operation and maintenance (O&M) buildings, and gen-tie lines

(AMLGMN 2024o, Section 2.1.1). Daytime and nighttime ambient noise levels at the nearest residence to the project are 70 dBA L_{eq} and 62 dBA L_{eq}. respectively. The operational noise level of 44 dBA L_{eq} at this residence would be below both the ambient noise levels and the County Noise Ordinance's threshold.

The County's General Plan along with the County Noise Ordinance establish noise level performance standards to control noise. The General Plan includes policies aimed at the potential noise impact of new development near residences and other land use types (Alameda 2022). The General Plan's noise level limit for residential land uses is 60 dBA L_{dn}. For a constant L_{dn} sound level during nighttime hours, 10 dBA is subtracted to convert that sound level to the L_{eq} sound metric. Following this principle, the County's General Plan's noise level limit for residential land use is 50 dBA L_{eq} during nighttime hours and 60 dBA L_{eq} during daytime hours.

According to the Alameda County Noise Ordinance, the Exterior Noise Level Standards for a cumulative 30 minutes in any one-hour period is 45 dBA L_{50}[7] during nighttime hours and 50 dBA L_{50} during daytime hours. Therefore, because the County Noise Ordinance's limits during both daytime hours and nighttime hours are lower than those of the County's General Plan, CEC staff use the County Noise Ordinance's limits to evaluate the project's operational noise levels at the adjacent noise-sensitive receptors.

CEC staff proposes COC **NOISE-3** to ensure project operation during daytime and nighttime hours would not distinctly increase the ambient noise level at nearest residence to project and would comply with the county's noise thresholds. COC **NOISE-3** would ensure measurement and verification that operational noise performance criteria are met at the project's noise-sensitive receptors.

With implementation of COC **NOISE-3** project operations would not result in generation of a substantial 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 applicable standards of other agencies and would not create a significant adverse noise impact.

b. Would the project result in generation of excessive ground borne vibration or ground borne noise levels?

Construction

Less Than Significant Impact. Bulldozing would generate the most project construction vibration (Dudek 2025z), Section 6). This analysis relies on the vibration thresholds identified by Caltrans to determine the significance of vibration impacts related to adverse human reactions. The threshold of human response begins at a PPV of 0.16 in/sec. Caltrans characterizes this as a "distinctly perceptible" event (Caltrans 2013). A

7 L_{50} is the A-weighted noise levels that are exceeded 50 percent of the time during the measurement period.

level of 0.20 in/sec has been found to be annoying to people in buildings and can pose a risk of architectural damage to buildings.

Jackhammers can cause a ground borne vibration rate of 0.035 in/sec at 25 feet (less than the threshold of human response), and bulldozers can cause a ground borne vibration of 0.089 in/sec at 25 feet (DOT 2006). However, vibration rates dissipate rapidly with distance. Bulldozing activities would take place approximately 1,500 feet from the closest off-site residential structure. At 1,500 feet, the vibration would be approximately 0.00097 in/sec, which is below the Caltrans PPV limit of 0.16 in/sec. Therefore, temporary vibration impact from construction is expected to be less than significant.

Operation

No Impact. Operational components of the project would not generate perceptible vibration levels. Most equipment used in the BESS, substation, O&M buildings, and gen-tie line are designed to produce no or very low vibration levels (less than the threshold of human response). Therefore, the operation of the project would not result in any substantial vibration.

c. 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 two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Construction and Operation

No Impact. The nearest airport to the project site is the Tracy Municipal Airport, approximately 8 miles east-southeast of the project site. The airport is too far from the project site to result in exposure of people residing or working in the project area to excessive noise levels, when combined with the project.

5.9.2.3 Cumulative Impacts

Construction and Operation

No Impact. There are no cumulative projects close enough to the proposed project that when combined with the proposed project would result in cumulative noise and vibration impacts.

5.9.3 Project Conformance with Applicable LORS

Table 5.9-4 below details CEC staff's determination of conformance with applicable local, state, and federal laws, ordinances, regulations, and standards (LORS), including any proposed COCs, where applicable, to ensure the project would conform with applicable LORS. As shown in this table, CEC staff concludes that with implementation of specific COCs, the proposed project would conform with all applicable LORS. The

subsection below, "Proposed Conditions of Certification," contains the full text of the referenced COCs.

TABLE 5.9-4 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
Federal	
Occupational Health and Safety Act (OSHA) Title 8, California Code of Regulations, Sections 5095-5099, and Title 29, Code of Federal Regulations, Section 1910.95	**Yes.** With incorporation of COCs **NOISE-2** and **NOISE-4** requiring an employee noise control program and occupational noise survey.
State	
Cal-OSHA Title 8, California Code of Regulations, Sections 5095-5099, and Title 29, Code of Federal Regulations, Section 1910.95	**Yes.** With incorporation of COCs **NOISE-2** and **NOISE-4** requiring an employee noise control program and occupational noise survey.
Local	
Alameda County General Objective 6	**Yes.** With incorporation of COCs **NOISE-1** through **NOISE-5** requiring a noise complaint process, employee noise control program, operational noise restrictions, occupational noise survey, and construction noise restrictions.
Alameda County Noise Ordinance Chapter 6.60, Section 6.60.040 of the Noise	**Yes.** With incorporation of COCs **NOISE-1** through **NOISE-5** requiring a noise complaint process, employee noise control program, operational noise restrictions, occupational noise survey, and construction noise restrictions.

5.9.4 Conclusions and Recommendations

As discussed above, the project components within the CEC's Opt-In certification and the project components outside the CEC's Opt-In certification would have a less than significant impact related to noise and vibration, and the project components within the CEC's Opt-In certification would conform with applicable LORS. CEC staff recommends adopting the COCs as detailed in subsection "5.9.5 Proposed Conditions of Certification" below.

5.9.5 Proposed Conditions of Certification

NOISE-1 Noise Complaint Process Throughout the construction and operation of the project, the project owner shall document, investigate, evaluate, and attempt to resolve all project-related noise complaints.[8] The project owner or its authorized agent shall:

- use the Noise Complaint Resolution Form (shown below), or a functionally equivalent procedure acceptable to the Compliance Project Manager (CPM), to document and respond to the noise complaint;

8 A project-related noise complaint is a complaint about noise that is caused by the project as opposed to another source and may constitute a violation by the project of any Noise condition of certification. A project-related noise complaint is documented by an individual or entity affected by such noise.

- attempt to contact the person(s) making the noise complaint within 24 hours;
- conduct an investigation to determine the source of noise in the complaint;
- if the noise is project related, take all feasible measures to reduce the source of the noise; and
- submit the Noise Complaint Resolution Form to the CPM documenting the complaint and actions taken. The form shall include: a complaint summary, including the final results of noise reduction efforts and, if obtainable, a signed statement by the complainant that states that the noise problem has been resolved to the complainant's satisfaction.

Verification: Within five days of receiving a noise complaint, the project owner shall file with the CPM the Noise Complaint Resolution Form, that documents the resolution of the complaint. If noise control measures are required to resolve the complaint, and the complaint is not resolved within three business days, the project owner shall submit an updated Noise Complaint Resolution Form when the noise control measures are implemented.

NOISE-2 Employee Noise Control Program The project owner shall submit to the CPM for review and approval a noise control program. The noise control program shall be used to reduce employee exposure to high (above permissible) noise levels during construction in accordance with Title 8, California Code of Regulations, Sections 5095-5099, and Title 29, Code of Federal Regulations, Section 1910.95.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall submit the noise control program to the CPM. The project owner shall make the program available to Cal-OSHA upon request.

NOISE-3 Operational Noise Restrictions The project design and implementation shall include appropriate noise control measures adequate to ensure that operation of the project will not exceed the existing daytime ambient noise levels of 70 dBA L_{eq} at the nearest residence to the gen-tie construction during the hours of 7:00 A.M. to 10:00 P.M.

The project design and implementation shall also ensure that noise levels will not exceed the existing nighttime ambient levels of 62 dBA L_{eq} at at the nearest residence to the gen-tie construction during the hours of 10:00 P.M. to 7:00 A.M.

No new pure-tone components may be introduced. No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints.

When the project first achieves a sustained output of 85 percent or greater of rated capacity, the project owner shall conduct a 25-hour community noise survey at the nearest residence to the gen-tie construction. This survey during

project operation shall also include measurement of one-third octave band sound pressure levels at the above locations to ensure that no new pure-tone noise components have been introduced.

If the results from the noise survey indicate that the project noise levels (L_{eq}) at the affected receptors exceed the above value for any given hour during the survey, noise control measures shall be implemented to reduce noise to a level of compliance with this limit.

If the results from these noise survey indicate that pure tones are present, noise control measures shall be implemented to eliminate the pure tones.

Verification: The survey shall take place within 45 days of the project first achieving a sustained output that produces the highest noise level. Within 30 days after completing the survey, the project owner shall submit a summary report of the survey to the CPM. Included in the survey report will be a description of any additional noise control measures necessary to achieve compliance with the above listed noise limits, and a schedule, subject to CPM approval, for implementing these measures. When these measures are in place, the project owner shall repeat the noise survey.

Within 15 days of completion of the new survey, the project owner shall submit to the CPM a summary report of the new noise survey, performed as described above and showing compliance with this condition.

NOISE-4 Occupational Noise Survey Following the project's attainment of a sustained output that produces the highest noise level, the project owner shall conduct an occupational noise survey to identify any noise hazardous areas within the project.

The survey shall be conducted by a qualified person in accordance with the provisions of Title 8, California Code of Regulations, Sections 5095-5099 and Title 29, Code of Federal Regulations, Section 1910.95(g)(3). The survey results shall be used to determine the magnitude of employee noise exposure.

The project owner shall prepare a report of the survey results and, if necessary, identify proposed hazard controls against occupational noise exposures to be employed to comply with the above regulations.

Verification: Within 30 days after completing each survey, the project owner shall submit the noise survey report to the CPM. The project owner shall make the report available to Cal-OSHA upon request from Cal-OSHA.

NOISE-5 Construction Noise Restrictions Heavy equipment operation and noisy[9] construction work relating to any project features, including linear facilities, shall be restricted to the times delineated below:

Mondays through Fridays:	7:00 A.M. to 7:00 P.M.
Saturdays:	8:00 A.M. to 5:00 P.M.

Construction work shall be performed in a manner to ensure excessive noise (noise that draws a project-related complaint) is prohibited and the potential for noise complaints is reduced as much as practicable. Haul trucks and other engine-powered equipment shall be equipped with adequate mufflers and other state-required noise attenuation devices. Haul trucks shall be operated in accordance with posted speed limits. Truck engine exhaust brake use (jake braking) shall be limited to emergencies.

Verification: Prior to ground disturbance, the project owner shall transmit to the CPM a statement acknowledging that the above restrictions will be observed throughout the construction of the project.

5.9.6 Recommended Mitigation Measures

There are no recommended mitigation measures for the project components outside the CEC's Opt-In certification for noise and vibration.

9 "Noisy" means noise that has the potential to cause project-related noise complaints (for the definition of "project-related noise complaint", see the footnote in condition of certification NOISE-1)

EXHIBIT 1 – NOISE COMPLAINT RESOLUTION FORM

Potentia-Viridi Battery Energy Storage System (24-OPT-04)
NOISE COMPLAINT LOG NUMBER _____ Complainant's name and address: Phone number: _____
Date complaint received: _____ Time complaint received: _____
Nature of noise complaint:
Definition of problem after investigation by plant personnel: Date complainant first contacted: _____
Initial noise level at 3 feet from noise source: _____dBA Date: _____ Initial noise level at complainant's property: _____dBA Date: _____ Final noise levels at 3 feet from noise source: _____dBA Date: _____ Final noise level at complainant's property: _____dBA Date: _____
Description of corrective measures taken: Complainant's signature: _____ Date: _____
Date installation completed: _____ Date first letter sent to complainant: _____ (copy attached) Date final letter sent to complainant: _____ (copy attached)
This information is certified to be correct: Plant Manager's Signature: _____

5.9.7 References

Alameda 2022 – Alameda County General Plan Policy Document, dated June 2022, Accessed on: April 25, 2025. Accessed online at: https://irp.cdn-website.com/f1731050/files/uploaded/AGP_Book_June2022_Amend-1.pdf

Alameda 2025 – Alameda County Noise Ordinance. Accessed on: April 25, 2025. Accessed online at: https://library.municode.com/ca/alameda_county/codes/code_of_ordinances?nodeId=TIT6HESA_CH6.60NO

AMLGMN 2024o – Allen Matkins Leck Gamble Mallory & Nats (TN 258016). Project Description, dated July 26, 2024. Accessed online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-OPT-04

AMLGMN 2024p – Allen Matkins Leck Gamble Mallory & Nats (TN 258017). Introduction, dated July 26, 2024. Accessed online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-OPT-04

AMLGMN 2024j – Allen Matkins Leck Gamble Mallory & Nats (TN 258010). Land Use, dated July 26, 2024. Accessed online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-OPT-04

Caltrans 2020 – California Department of Transportation (Caltrans). Transportation and Construction Vibration Guidance Manual. Published in April 2020. Accessed online at: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf

Dudek 2025z – Dudek (TN 261424). DR Response 2 -, dated January 29, 2025. Accessed online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-OPT-04

5.10 Public Health

The Potentia-Viridi Battery Energy Storage System (project) would be in an unincorporated area of eastern Alameda County in the San Francisco Bay Area Air Basin (SFBAAB or Air Basin). The project site is in an area comprised of agricultural farmland used for cattle grazing southwest of Interstate 580 and Interstate 205. The nearest settlement is the City of Tracy approximately 2.5 miles to the east. The BESS and an associated substation would be developed on approximately 70 leased acres of a larger parcel, assessor parcel number 99B-7890-002-04. The project's gen-tie line would extend from the project site across Patterson Pass Road, and over additional agricultural lands to the Tesla Substation which is located directly to the east.

Components of the proposed Potentia-Viridi BESS facility that are within the CEC's Opt-In certification include the containerized BESS, the power conversion system, medium voltage collection system, three operations and maintenance (O&M) buildings, a project substation/control building, approximately 1,600-feet of kV gen-tie line and transmission structure, as well as ancillary laydown yards, fencing, etc. Components of the proposed project outside the CEC's Opt-In certification include an approximately 1,300-foot segment of the gen-tie line and associated fiber line, two "H"-frame transmission tower structures and related conductors, a substation bay dead-end transmission structure, and expansion of a 500 kV breaker-and-a-half with a new circuit breaker, within the Tesla substation, to be constructed and owned by PG&E.

The purpose of this Public Health analysis is to determine if toxic emissions from the proposed project would have the potential to cause significant adverse public health impacts or violate standards for public health protection in the project area.

The toxic air contaminants addressed in this analysis are pollutants for which there are no specific ambient air quality standards. **Section 5.1, Air Quality** separately addresses the pollutants for which there are such ambient air quality standards, known as criteria, air pollutants. See **Section 5.7, Hazards, Hazardous Materials, and Wildfire**, and **Section 5.9, Noise and Vibration**, for additional analyses of human health effects.

5.10.1 Environmental Setting

Existing Conditions

Toxic Air Contaminants

California Health and Safety Code, section 39655, defines a toxic air contaminant (TAC) as "an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health." In addition, substances which have been listed as hazardous air pollutants (HAPs) pursuant to 42 U.S.C. section 7412 are included as TACs under the state law pursuant to Health and Safety Code, section 39657 (b). California Air Resources Board

(CARB) formally identified federal HAPs as TACs in California Code of Regulations, Title 17, section 93001 (OEHHA 2024).

TACs, or air toxics, are different from criteria pollutants such as ground-level ozone, particulate matter, carbon monoxide (CO), nitrogen dioxide, sulfur dioxide, and lead. Criteria air pollutants are regulated using National Ambient Air Quality Standard (NAAQS) and California Ambient Air Quality Standard (CAAQS), as noted above. However, there are no ambient standards for most TACs, therefore, site-specific health risk assessments need to be conducted to evaluate whether risks of exposure to TACs create an adverse impact. Specific TACs have known acute, chronic, and cancer health impacts. CARB has identified TACs in California Code of Regulations, Title 17, sections 93000 and 93001. The nearly 200 regulated TACs include asbestos, organic, and inorganic chemical compounds and compound categories, diesel exhaust, and certain metals. The requirements of the Air Toxic "Hot Spots" Information and Assessment Act of 1987 (Health and Saf. Code, §44300 et seq.) apply to facilities that emit these listed TACs above regulated threshold quantities.

Sensitive Receptors

The Bay Area Air District (BAAD) California Environmental Quality Act Guidelines, Appendix F (BAAD 2022b), defines sensitive receptors as: Facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples include schools, hospitals, and residential areas. The location of sensitive receptors is needed to assess TAC impacts on public health.

The closest sensitive receptor to the project site is a residence located approximately 400 feet from the project's southern boundary (Dudek 2025g).

Health Effects of TACs

The health effects associated with TACs are quite diverse and generally are assessed locally, rather than regionally. Exposure to TACs can cause serious adverse human health effects, known as injury or illness, including cancer and birth defects. Numerous other health effects also have been linked to exposure to TACs, including heart disease, sudden infant death syndrome, respiratory infections in children, lung cancer, and breast cancer (OEHHA 2015; OEHHA 2024).

The primary on-site TAC emission sources for the proposed project would be diesel engines, including engines powering the vehicles and equipment during construction and operation. Diesel exhaust is a complex mixture of gases and fine particles including over 40 substances listed by the U.S. EPA as HAPs and by CARB as TACs. The solid material in diesel exhaust is known as diesel particulate matter (DPM) (CARB 2024).

DPM has been the accepted surrogate for whole diesel exhaust since the late 1990's. CARB identified DPM as the surrogate compound for whole diesel exhaust in its Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant staff report in April

1998 (Appendix III, Part A, Exposure Assessment) (CARB 1998). DPM is primarily composed of aggregates of spherical carbon particles coated with organic and inorganic substances. Diesel exhaust deserves attention mainly because of its ability to induce serious noncancerous effects and its status as a likely human carcinogen. Diesel exhaust is also characterized by CARB as "particulate matter from diesel-fueled engines." The impacts from human exposure would include both short- and long-term health effects. Short-term effects can include increased coughing, labored breathing, chest tightness, wheezing, and eye and nasal irritation. Effects from long-term exposure can include increased coughing, chronic bronchitis, reductions in lung function, and inflammation of the lung. Epidemiological studies strongly suggest a causal relationship between occupational diesel exhaust exposure and lung cancer. Diesel exhaust is listed by the U.S. EPA as "likely to be carcinogenic to humans" (U.S. EPA 2002).

Naturally Occurring Asbestos

Naturally occurring asbestos may be present at sites with certain geologic conditions. This health hazard may occur at a project site in a geographic ultramafic rock unit area or an area where naturally occurring asbestos, serpentine, or ultramafic rocks are determined to be present. Based upon review of the US Geological Survey map detailing natural occurrence of asbestos in California, naturally occurring asbestos is not expected to be present at the project site (Van Gosen and Clinkenbeard 2011).

Valley Fever

Soils in some areas of California host the microscopic fungus that causes Valley Fever, known as *Coccidioides immitis*, which lives in the top two to 12 inches of soil in many parts of the state. When soil is disturbed by activities such as digging, driving, or high winds, fungal spores can become airborne and potentially be inhaled. Workers in Alameda County are at a relatively lower risk than in other areas of California (DIR 2022). In addition, employers have a legal responsibility to provide workers with protection from health risks, including any risks due to Valley Fever (DIR 2022). The primary ways to reduce the risk of Valley Fever are to avoid exposure to dusty air or dust storms, prevent dirt or dust from becoming airborne, and, if working at a dusty site is unavoidable, wear respiratory protection with particulate filters rated as N95 or higher (DIR 2022).

CO Hotspots

A CO hotspot refers to a localized area where CO concentrations exceed ambient air quality standards. These hotspots can occur at intersections with high peak-hour traffic volumes. Specifically, CO hotspots may be created at intersections where traffic levels are high enough to cause local CO concentrations to exceed the federal one-hour standard of 35.0 parts per million (ppm) or the federal and state eight-hour standard of 9.0 ppm (BAAD 2025). The San Francisco Bay Area Air Basin is currently in compliance with state and federal CO standards, and the air quality monitoring station located in Pleasanton within the BAAD jurisdiction reports no CO levels that exceed these standards for the years 2021 through 2023.

Regulatory

Federal

Federal Clean Air Act. The federal Clean Air Act (CAA), Section 112 (42 U.S.C., § 7412) defines the list of specified Hazardous Air Pollutant (HAP) and requires new sources that emit more than 10 tons per year of any HAP or more than 25 tons per year of any combination of HAPs to apply Maximum Achievable Control Technology.

HAPs are a variety of substances that pose serious health risks. Direct exposure to HAPs has been shown to cause cancer, reproductive effects or birth defects, damage to the brain and nervous system, and respiratory disorders. Categories of sources that cause HAP emissions are controlled through separate standards under CAA Section 112: National Emission Standards for Hazardous Air Pollutants (NESHAPs). These standards are specifically designed to reduce the potency, persistence, or potential bioaccumulation of HAPs.

Title 40 Code of Federal Regulations Parts 61 and 63 National Emission Standards for Hazardous Air Pollutants. Stationary reciprocating internal combustion engines (RICE), including stationary "spark ignition" engines fired on natural gas, landfill gas, gasoline, or propane, are subject to the RICE NESHAP (40 C.F.R. Part 63, Subpart ZZZZ). This regulation establishes national emission limitations and operating limitations for HAPs, in terms of hydrocarbons and formaldehyde concentrations emitted from stationary RICE. This regulation also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations. Emergency stationary RICE may be operated for up to 50 hours per calendar year in non-emergency situations, and the engine and after-treatment control device (if any) must be operated according to the manufacturer's emission-related written instructions (40 C.F.R., § 63.6625).

Asbestos is a HAP regulated under the NESHAP Subpart M (40 C.F.R., § 61.140). The asbestos NESHAP is intended to provide protection from the release of asbestos fibers during activities involving the handling of asbestos. CAA air toxics regulations specify work practices for asbestos to be followed during demolitions and renovations (40 C.F.R., § 61.145). The regulations require a thorough inspection of the area where the demolition or renovation would occur and advance notification of the appropriate delegated entity. Work practice standards that control asbestos emissions must be implemented, such as removing all asbestos-containing materials (ACM), adequately wetting all regulated ACM, and sealing ACM in leak-tight containers and disposing of the asbestos-containing waste material as expediently as practicable.

State

California State Health and Safety Code

Sections 39650 et seq. These sections mandated the CARB and the Department of Health Services to establish safe exposure limits for toxic air pollutants and identify

pertinent best available control technologies. They also required that the New Source Review rule for the permitting of new and modified stationary sources of air pollution in each air pollution control district include regulations that require procedures for controlling the emission of toxic air contaminants.

Section 41700. This section 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 to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property."

Air Toxic "Hot Spots" Information and Assessment Act of 1987. The Air Toxic "Hot Spots" Information and Assessment Act of 1987 (Assembly Bill 2588 [Connelly, Statutes of 1987], and codified as Health and Safety Code, § 44300 and the following), identifies TAC hot spots where emissions from specific stationary sources may expose individuals to an elevated risk of adverse health effects, particularly cancer or reproductive harm. Many TACs are also classified as HAPs. AB 2588 requires that a business or other establishment identified as a significant stationary source of toxic emissions provide the affected population with information about the health risks posed by their emissions.

Airborne Toxic Control Measures (ATCM)

ATCM for Stationary Compression Ignition Engines, Emergency Standby Diesel-Fueled Compression Ignition Engines. Statewide regulations govern the use of and emissions performance standards for emergency standby diesel-fueled engines, including those of the project. As defined in regulation (Cal. Code Regs., tit. 17, § 93115.4(a)(29)), an emergency standby engine is, among other possible use, one that provides electrical power during an emergency use and is not the source of primary power at the facility and is not operated to supply power to the electric grid. The corresponding ATCM (Cal. Code Regs., tit. 17, § 93115.6) restricts each emergency standby engine to operate no more than 50 hours per year for maintenance and testing purposes. The ATCM establishes no limit on engine operation for emergency use or for emission testing to show compliance with the ATCM's standards.

Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations. CARB has adopted the Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations to minimize the generation of asbestos from earth disturbance or construction activities (Cal. Code Regs., tit.17, § 93105). The Asbestos ATCM applies to any project that would include sites to be disturbed in a geographic ultramafic rock unit area or an area where naturally occurring asbestos, serpentine, or ultramafic rocks are determined to be present. Based upon review of the U.S. Geological Survey map detailing natural occurrence of asbestos in California, naturally occurring asbestos is not expected to be present at the project site (Van Gosen and Clinkenbeard 2011).

Local

Alameda County General Plan

The County's East County Area Plan includes goals and policies that are designed to reduce the emissions of air pollutants, in buildings, conservation, and other methods of efficiency. The goals and policies that are related directly and indirectly to air quality are as follows (Alameda 2025):

- **Goal:** To ensure that air pollution levels do not threaten public health and safety, economic development, or future growth.
- *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 292:* The County shall coordinate subregional air quality planning and mitigation among East County cities using the results of the biennial monitoring report.
- *Policy 293:* The County shall support the BAAD in monitoring air pollutants of concern on a continuous basis.
- *Policy 294:* The County shall require new development projects to include traffic and air pollutant reduction measures to help attain air quality standards. For non-residential projects, these measures could include Transportation Demand Management Programs such as ridesharing and transit promotion.
- *Policy 295:* The County shall require major projects of commercial or industrial nature to include bicycle storage facilities for employees and customers, shower/locker areas, and other facilities identified in the East County Bicycle Plan (described in Program 84) for employees that commute using bicycles.
- *Policy 296:* The County shall review the cumulative impact of proposed projects for their potential effect on air quality conditions.
- *Policy 297:* The County shall coordinate air quality planning efforts with other local, regional and state agencies.
- *Policy 298:* The County shall address air quality as a factor in its Regional Element to assist cities in their environmental review procedures.
- *Policy 299:* The County shall require projects that generate high levels of air pollutants, such as manufacturing facilities, hazardous waste handling operations, and drive-through restaurants and banks, to incorporate air quality mitigations in their design.
- *Policy 300:* The County shall review proposed projects for their potential to generate hazardous air pollutants.
- *Policy 301:* The County shall only approve new air pollution point sources such as manufacturing and extracting facilities when they are located away from residential areas and sensitive receptors.

- *Policy 302:* The County shall include buffer zones within new residential and sensitive receptor site plans to separate those uses from freeways, arterials, point sources and hazardous material locations.
- *Policy 303:* The County shall incorporate the provisions of the Association of Bay Area Government's (ABAG) Bay Area Air Quality Plan and the BAAD's Air Quality and Urban Development Guidelines into project review procedures.
- *Policy 304:* The County shall notify cities and the BAAD of proposed projects which may significantly affect air quality.
- *Policy 305:* The County shall cooperate with the BAAD and California Air Resources Board in their enforcement of the provisions of the Clean Air Act, state and regional policies, and established standards for air quality.
- *Policy COS-14.9* Significant Producers of Air Pollutants. Require projects that generate potentially significant levels of air pollutants and/or GHGs such as quarries, landfill operations, or large land development projects to incorporate renewable energy, and the best available control technologies and practices into the project design.

BAAD Rules and Regulations

The following BAAD rules are applicable to the project to limit the generation of air pollutants in the Bay Area:

- Regulation 6, Rule 1 (Particulate Matter General Requirements) limits the quantity of particulate matter in the atmosphere through the establishment of limitations on emission rates, concentration, visible emissions, and opacity.
- Regulation 6 Rule 6 (Prohibition of Trackout) limits fugitive road dust emissions associated with trackout of solid materials onto paved public roads outside the boundaries of large bulk material sites, large construction sites, and large disturbed surface sites (sites of 1 acre or more).
- Regulation 8 Rule 1 (Organic Compounds General Provisions) limits the emission of organic compounds to the atmosphere. Certain organic compounds may also be subject to the requirements of Regulations 11 or 12.
- Regulation 8 Rule 3 (Architectural Coatings) limits the quantity of reactive organic gases (ROG) in architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within the BAAD.
- Regulation 8 Rule 15 (Emulsified and Liquid Asphalts) limits the emissions of ROGs caused by the use of emulsified and liquid asphalt in paving materials and paving and maintenance operations.

Cumulative

The proposed project would be in Alameda County in the San Francisco Bay Area Air Basin. Past, present, and future development projects contribute to the region's TAC levels on a cumulative basis. Although the region experiences the existing conditions of

acute, chronic, and cancer health risks due to TACs attributable to the region's development history, the project site is isolated and unlikely to be affected by the region's other industrial sources of TACs.

For cumulative air quality and TAC assessments, CEC staff generally considers a six-mile radius appropriate because, based on staff's modeling experience, beyond six miles there is no statistically significant overlap of nonreactive pollutant concentrations between stationary emission sources. Past, present, and reasonably foreseeable probable future public health impacts could be attributable to each of the cumulative projects, especially those that involve construction activities or O&M activities with substantial sources of air pollutants.

According to **Appendix A, Table A-1**, there are 33 existing, approved, pending and proposed projects within six miles of the project site. However, none of these projects are expected to include stationary emission sources that would result in significant overlapping TAC concentrations with the proposed project. The BAAD's Permit Application Received database was also reviewed to determine if any approved permits within the last 2 years were within a 6-mile radius of the project site. The review determined that there were no recently approved permits within a 6-mile radius of the project site.

5.10.2 Environmental Impacts

PUBLIC HEALTH	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determination.				
a. Would the project expose sensitive receptors to substantial pollutant concentrations or result in other public health impacts?	☐	☒	☐	☐

Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, air quality and staff additions.

5.10.2.1 Methodology and Thresholds of Significance

In addition to the above environmental checklist, CEC staff used the following methodology and thresholds of significance to evaluate the project.

Methodology

CEC staff determines the health effects of exposure to toxic emissions based on impacts to the maximum exposed individual. This is a person hypothetically exposed to project

emissions at a location where the highest ambient impacts were calculated using worst-case assumptions of contaminant concentrations and exposure.

CEC staff conducts the public health assessment by evaluating the information and data provided by the applicant. CEC staff also relies upon the expertise and guidelines of the California Environmental Protection Agency (Cal/EPA) Office of Environmental Health Hazard Assessment (OEHHA) to: (1) identify contaminants that cause cancer or other noncancer health effects, and (2) identify the toxicity, cancer potency factors and non-cancer Reference Exposure Levels (RELs) of these contaminants. CEC staff also relies upon the expertise of the CARB and local air districts to conduct ambient air monitoring of TACs and on the California Department of Public Health (CDPH) to evaluate pollutant impacts in specific communities. The public health related data sets, guidelines and technical analysis issued by these agencies are routinely relied on by experts in the field of public health to perform project level analysis to identify any impacts to public health from the construction and operation of the project. Typically, a screening level risk assessment is performed using simplified assumptions that are intentionally biased toward protection of public health. That is, an analysis is designed that overestimates public health impacts from exposure to project emissions. This approach increases the likelihood that the actual risks from the new source of emissions will be much lower than the risks as estimated by the screening level assessment. The risks for screening purposes are based on examining conditions that would lead to the highest, or worst-case, risks and then using those conditions in the study. Such conditions include:

- using the highest levels of pollutants that could be emitted from the source;
- assuming weather conditions that would lead to the maximum ambient concentration of pollutants;
- using the type of air quality computer model which predicts the greatest plausible impacts;
- calculating health risks at the location where the pollutant concentrations are estimated to be the highest;
- assuming that an individual's exposure to cancer-causing agents occurs continuously for 30 years[1]; and
- using health-based standards designed to protect the most sensitive members of the population (i.e., the young, elderly, and those with respiratory illnesses).

CEC staff evaluated health risks primarily in relation to diesel particulate matter (DPM), identifying it as the TAC expected to be emitted in the largest quantity. Emissions of DPM are evaluated for potential long-term (chronic) non-cancer health effects, as well as cancer (long-term) health effects. OEHHA has not developed an acute Reference Exposure Level (REL) for DPM, therefore, acute non-cancer health effects are not

1 In 2015 Guidance, OEHHA recommends that an exposure duration (residency time) of 30 years (instead of 70 years) be used to estimate individual cancer risk for the maximally exposed individual resident (MEIR) (OEHHA 2015).

evaluated for DPM. The significance of project health impacts is determined separately for each of these categories of health effects. To assess chronic health risks and cancer risks, staff used annual average concentrations of DPM at the most exposed sensitive receptors. CEC staff applied OEHHA's Air Toxics Hot Spots Program Risk Assessment Guidelines (OEHHA 2015) and the BAAD CEQA Guidelines to determine toxicity values and exposure parameters. CEC staff calculated health risks using standardized equations provided in OEHHA guidelines (OEHHA 2015), incorporating adjustments for age-specific exposure rates and sensitivity.

Thresholds of Significance

Acute and Chronic Noncancer Health Effects

CEC staff evaluates the significance of non-cancer health effects by calculating a "hazard index." A hazard index is a ratio comparing exposure from facility emissions to the reference (safe) exposure level. A hazard index of less than one (1.0) indicates that the worst-case exposure is below the safe threshold, suggesting that health protection is likely achieved, even for sensitive populations. In such a case, staff presumes that there would be no significant non-cancer project-related public health impacts. The BAAD considers an increased non-cancer hazard index exceeding 1.0 to be significant (BAAD 2022a). CEC staff considers chronic or acute non-cancer health impacts to be significant if the total hazard index exceeds 1.0.

Cancer Risks

A cancer risk that is at or below 1 chance in a million (or 1×10^{-6}) is not a public health concern. This means that no more than one person in a population of one million people exposed to the same level of chemical contaminant(s) at the site would develop cancer over a lifetime (OEHHA 2020).

CEC staff evaluates the significance of cancer risks by comparing estimated risks to established thresholds. The BAAD considers a project to have a significant impact if it increases cancer risk by 10 in one million or more for the maximum exposed individual resident (MEIR) (BAAD 2022a).

As noted earlier, the initial risk analysis for a project is typically performed at a screening level, which is designed to overstate actual risks, so that health protection can be ensured. CEC staff's analysis also addresses potential impacts on all segments of the population, including the young, the elderly, and individuals with existing medical conditions that would render them more sensitive to the adverse effects of TACs and any minority or low-income populations that are likely to be disproportionately affected by impacts. To accomplish this goal, staff uses the most current acceptable public health exposure levels set to protect the public from the effects of air toxics being analyzed. When a screening analysis shows the cancer risks to be above the significance level, refined assumptions would be applied for likely a lower, more realistic, risk estimate. If, after refined assumptions, the project's risk is still found to exceed the significance level of 10.0 in one million, staff would recommend appropriate

measures to reduce the risk to less than significant levels. If, after all feasible risk reduction measures have been considered and a refined analysis still identifies a cancer risk of greater than 10.0 in one million, CEC staff would deem such a risk to be significant and unmitigable and would not recommend project approval.

PM2.5

The BAAD also recommends that operational-related PM2.5 emissions generated by a single source would be a significant impact and a cumulatively considerable contribution to local community risk and hazard impacts if emissions would cause impacts or risks that exceed 0.3 µg/m^3 of annual average PM2.5 (BAAD 2022a).

Cumulative Health Risk Thresholds

The cumulative threshold addresses the potential that a project would have a cumulative significant impact if the aggregate total of all past, present, and foreseeable future sources within a 1,000-foot radius (or greater where appropriate) results in:

- An excess lifetime cancer risk level of more than 100 in one million;
- A non-cancer chronic HI greater than 10.0; or
- An annual average PM2.5 greater than 0.8 µg/m^3 (BAAD 2022a).

5.10.2.2 Direct and Indirect Impacts

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determination.

a. Would the project expose sensitive receptors to substantial pollutant concentrations or result in other public health impact?

Construction

Less Than Significant with Mitigation Incorporated. Based on the analysis below, with the implementation of COC **AQ-SC5**, construction of the project, including components within and outside the CEC's Opt-In certification, would not expose sensitive receptors to substantial pollutant concentrations or result in other public health impacts.

Potential risks to public health during construction would be associated with exposure to particulate matter emissions from diesel-fueled engines to individuals near the site. Diesel particulate matter (DPM) is expected to be the predominant TAC emitted during construction and is the main contaminant of concern for this project.

The project has included construction emission estimates based on an 18-month construction period. The construction phases for the project include the following:

Phase 1: Site Preparation and Grading

Phase 2: Battery Energy Storage System (BESS) Foundation and Installation

Phase 3: Substation and Electrical

Phase 4: Gen-tie Foundation and Stringing and Pulling

Phase 5: Testing and Commissioning

Health Risks of Toxic Air Contaminants

The applicant's health risk assessment (HRA) focused on the on-site DPM emissions, which would be a subset of the total PM10 impact. The applicant first conducted air dispersion modeling for the HRA using the American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD), version 23132. AERMOD-ready meteorological data from the Livermore station (Station AQS ID 06-001-0007) from the years 2013 through 2016, which was pre-processed with AERMET version 18081, was obtained from the BAAD. The Livermore station was located approximately 11 miles west of the project site. The applicant modeled a telescoping grid of receptors was generated with the following spacing: 25 meter spacing on the facility boundary; 25 meter spacing from the facility boundary out to 100 meters; 50 meter spacing from 100 meters to 250 meters; 100 meter spacing from 250 meters to 500 meters; 250 meter spacing from 500 meters to 1,000 meters; and 500 meter spacing from 1,000 meters to 2,000 meters.

The applicant modeled construction emissions, including components within and outside the CEC's Opt-In certification, for the 18-month construction scenario, based on an 8-hour workday and a 5-day workweek. The applicant derived emission rates by dividing total DPM emissions for construction equipment by the total number of working hours. The applicant modeled maximum hourly and annual concentrations at receptor points. The applicant then used the CARB Hot Spots Analysis and Reporting Program Version 2 (HARP2), version 22118, to determine cancer and non-cancer health risks. The applicant assessed cancer risks and chronic non-cancer risks for the maximum exposed individual resident (MEIR) and the maximum exposed individual worker (MEIW).

CEC staff reviewed the applicant's HRA and agreed with the inputs used by the applicant and the outputs from the model.

The applicant's HRA shows that, the project's construction emissions, if unmitigated, could result in cancer risk above the BAAD significance threshold of 10.0 in one million (Dudek 2025g; Dudek 2025ggg). Therefore, the applicant proposed mitigation measure to require use of Tier 4 off-road equipment during construction (Dudek 2025g). CEC staff incorporated this mitigation measure in COC **AQ-SC5** in **Section 5.1, Air Quality**.

Table 5.10-1 provides the health risks at the MEIR and the MEIW to reflect the mitigated emissions for the 18-month construction period with the use of Tier 4 off-road equipment during construction, as specified in COC **AQ-SC5**. The results show that, with the implementation of COC **AQ-SC5**, the cancer risks at both the MEIR and the MEIW would be below the BAAD threshold of 10.0 in one million. The chronic non-

cancer hazard index (HI) and PM2.5 at both the MEIR and MEIW would be well below the BAAD thresholds (BAAD 2022a) during construction. In addition, since OEHHA has not developed an acute Reference Exposure Level (REL) for DPM, acute non-cancer health effects are not evaluated. Therefore, Condition of Certification **AQ-SC5** would be necessary to ensure that health risks during construction are less than significant.

TABLE 5.10-1 HEALTH RISKS IMPACT DURING CONSTRUCTION-MITIGATED

Receptor Type	Cancer Risk Impact (in one million)	Chronic Non-Cancer Hazard Index (HI) (unitless)	PM2.5 (µg/m^3)
MEIR	1.27	0.001	4.9E-03
MEIW	0.54	5.0E-04	2.1E-03
Threshold	10	1	0.3
Threshold Exceeded?	No	No	No

Note: The MEIR location during the 18-month construction period is located around 400 feet from project construction boundary. The MEIW location is located around 1,920 feet from project construction boundary. The implementation of **AQ-SC5** is included in these health risk estimates.
Sources: Dudek 2025g, Dudek 2025u, Dudek 2025ggg, and staff analysis of applicant's modeling files

Valley Fever. The project site is in eastern Alameda County where the risk is very low. Construction activities, including ground-disturbing operations, could increase the potential for exposure to airborne spores among nearby residents and on-site workers if such spores are present. Implementation of fugitive dust control measures specified in COCs **AQ-SC3**, **AQ-SC4**, and **MM AQ-1** in **Section 5.1, Air Quality**, would reduce any potential exposure to such spores.

CO Hotspots. The entire San Francisco Bay Area Air Basin is in compliance with state and federal CO standards, and no air quality monitoring stations within the BAAD jurisdiction report elevated CO levels. The low background levels of CO in the SFBAAB, combined with the continuous improvement in emissions standards for new sources in accordance with state and federal regulations, and the estimated maximum of 42 trips per day during operational and maintenance activities, indicates that the project would not significantly impact traffic conditions. Additionally, as shown in **Section 5.1, Air Quality**, CO impacts from construction and operation would not exceed ambient air quality standards.

Operation

Less Than Significant Impact. Based on the analysis below, operation of the project, including components within and outside the CEC's Opt-In certification, would not expose sensitive receptors to substantial pollutant concentrations or result in other public health impacts.

Operational emissions would result from off-site vehicle trips for worker commutes, material deliveries, site security, and facility upkeep emissions from the proposed BESS facility which would also have one O&M building, and from occasional biodiesel fuel combustion by the emergency generators at the substation locations; additionally,

minor emissions would be caused by consumer product use and landscaping at the facility.

CEC staff evaluated health risks associated with operational activities over a 30-year exposure period consistent with the methodology described above. **Table 5.10-2** shows that the increased cancer risks, chronic non-cancer risks, and PM2.5 impacts from operational activities, including those from components within and outside the CEC's Opt-In certification would be well below the BAAD significance thresholds.

TABLE 5.10-2 HEALTH RISKS IMPACT DURING OPERATION

Receptor Type	Cancer Risk Impact (in one million)	Chronic Non-Cancer Hazard Index (HI) (unitless)	PM2.5 (µg/m^3)
MEIR	0.303	7.0E-05	3.5E-04
MEIW	0.19	4.4E-05	2.2E-04
Threshold	10	1	0.3
Threshold Exceeded?	No	No	No

Note: The MEIR location is located around 2,205 feet from the project boundary. The MEIW location is located around 1,920 feet from the project boundary.
Sources: Dudek 2025g, Dudek 2025u, Dudek 2025ggg, and staff analysis of applicant's modeling files

BESS Thermal Runaway and Fire Impacts

Section 4.4, Worker Safety and Fire Protection provides a detailed discussion regarding potential BESS safety hazards and concludes that the risk of BESS thermal runaway is small and is heavily influenced by older (pre-2025) technology. The overall utility-scale BESS failure rate has sharply decreased while the global installed capacity has dramatically increased. The most recent data from EPRI shows that the failure rate dropped by 98 percent from 2018 to 2024 as lessons learned from early failures have been incorporated into the latest designs and best practices. See more detailed discussion in **Section 4.4, Worker Safety and Fire Protection**.

The American Clean Power Association report "Assessment of Potential Impacts of Fires at BESS Facilities", prepared by Fire & Risk Alliance, LLC, provides a detailed literature review and analysis of historical BESS fire incidents and the extent of environmental impacts (ACP 2025). A key concern in BESS fire events is the release of toxic gases, but studies reviewed in the ACP report indicate that emissions are largely confined to the immediate vicinity of the fire, with rapid dissipation and concentration reduction in open-air scenarios. Air sampling from past incidents reviewed in the ACP report has found that contaminant concentrations beyond the immediate fire scene do not pose a public health risk. CEC staff reviewed the air monitoring/modeling reports available for the past incidents discussed in the ACP report and the following is a summary of staff's review:

- **Surprise AZ – April 19, 2019.** The April 19, 2019 incident at the McMicken Battery Energy Storage System in Surprise, Arizona resulted in the injury of multiple firefighters. Subsequently there have been extensive investigations undertaken post-incident by UL and Arizona Public Service (APS). Hazardous hydrogen cyanide (HCN)

and carbon monoxide (CO) gas concentrations were detected at the gate to the fenced area (above 50 ppm and 500 ppm, respectively) (ULFSRI 2020). APS hired AECOM and Wood to conduct an evaluation of both on-site and off-site environmental and health impacts of the event. The environmental investigation involved collecting and evaluating on-site environmental media samples, such as surface soils, and performing air dispersion modeling to evaluate the potential for off-site environmental impacts (APS 2020). AECOM collected both surficial soil samples from the area around the BESS and wipe samples from within the BESS structure. AECOM found that none of the samples exhibited contaminant of concern concentrations in excess of levels that would require site remediation or other response actions. Wood performed air dispersion modeling to develop a conservative quantification of likely off-site deposition of contaminant of concern particulates moving through the air in the plume. Wood's analysis relied upon conservative emission rates. Satellite imagery and site-specific meteorological data were also utilized, along with an evaluation of the on-site soil and structure wipe sampling data. As a result of this dispersion modeling analysis, Wood found that contaminant of concern particulate matter deposition through the air was minimal and primarily confined to on-site locations near the BESS structure and modeled off-site concentrations of contaminants of concern were lower than applicable state and federal standards governing environmental, health, and safety protection from hazardous substance releases (APS 2020).

- **Warwick, NY – June 26 and 27,2023.** Two independent fire events occurred on June 26 and June 27, 2023 in Warwick, New York. The Orange County, NY HAZMAT Response Team responded to the two independent events and collected air samples for each event. Low levels of CO and HCN were detected in the area approximately 1 meter from the affected containers and not detected outside the fence line. Air monitoring was also conducted at the Warwick Valley School, which is about 900 feet away from the BESS unit where fire was initiated. Low levels of VOCs and CO were detected outside of the building (ground levels and on the rooftop) up to 0.1 to 0.5 ppm. There were no elevations of VOCs or CO detected in any indoor locations. Hydrogen sulfide (H_2S) levels were all below 0.2 ppm. Indoor airborne particulate matter levels within the school and administrative offices were all lower than outdoor levels. No bromide or fluoride were detected from any of the sampled locations. Low level smoke-like odors were detectable in a few offices and classrooms. There were no signs of smoke residues on surfaces of supply air diffusers, walls, desktops or floors of the Administrative/Middle School building at the time of inspection. Surface sampling for lithium revealed no detected lithium (< 0.250 micrograms per square foot) from any office, classroom or bus surfaces sampled (NYSERDA 2023).
- **Chaumont, NY – July 27 through August 1, 2023.** On July 27, 2023, a multi container fire occurred at the Convergent Energy facility in Lyme, New York. Over the five-day BESS fire event, air monitoring was conducted by the Watertown hazmat team with New York State Office of Fire Prevention and Control (OFPC) technical assistance. The detection instruments used were looking for oxygen (O_2),

explosive gases (LEL), CO, H_2S, VOC, and HCN. Readings on the evening of the 27th were negative except for HCN which showed a maximum level of 4 ppm next to the damaged container and 0 ppm at 200 feet from the involved areas. On July 29, 2023, a very low level of CO (single digit readings) was detected at the perimeter fence. Air monitoring in the Village of Chaumont shows a finding of 1 ppm VOC, which was consistent with background levels and/or sensor drift and deemed not significant. On August 1, 2023, trace readings of CO, VOC and HCN were found at the base of the containers that had previously been involved in the fire and no detectable amounts of these materials were found at the fence line (NYSERDA 2023).

- **Melba, ID – October 2 to October 6, 2023.** Idaho Power contracted a consultant, CTEH, to provide air monitoring and sampling support in response to the Melba, ID BESS fire event in October 2023. This was done to augment air sampling efforts being performed prior to the consultant's arrival on site by Idaho Power's Industrial Hygiene Services. Air monitoring was performed both during the multi-day fire event and consisted of real-time air monitoring both on-site and in the surrounding community (ACP 2025). Community Monitoring was conducted at breathing zone level in publicly accessible residential areas near the substation. CTEH personnel conducted handheld and stationary real-time air monitoring for LEL, CO, carbon dioxide (CO_2), hydrogen fluoride (HF), hydrogen chloride (HCl), acid gases, particulate matter with a diameter of 2.5 micrometers or less (PM2.5), and VOCs. Industrial Hygiene Services conducted analytical air sampling for total dust, total metals particulates, metals particulates with an average particulate size of 4 µm, and total volatile organic compounds (TVOCs) in four general downwind locations from the substation. CTEH personnel also deployed analytical air sampling of VOCs, metals particulates, and polycyclic aromatic hydrocarbons (PAHs) at five discrete locations around the substation. Results of both real-time air monitoring and analytical air sampling conducted from both monitoring groups indicate that all chemical constituents measured around the impacted substation were not at levels that would represent a public health concern (CTEH 2023).
- **Escondido, CA – September 5, 2024.** The City of Escondido released an air quality monitoring report after the September 5, 2024 fire, which impacted one container at an energy storage facility in Escondido, CA (City of Escondido 2024). The air quality data came from 11 different locations monitored by San Diego County HAZMAT and 17 locations monitored by Haley & Aldrich, Inc., SDG&E's third-party contractor. The stations were located approximately 100 feet to as far as 4,000 feet from the affected container (CESA 2024). Monitored gases include: CO, HF, HCN, H_2S, phosphine (PH_3), chlorine (Cl_2), LEL, CO_2, O_2. The equipment only detected the presence of two toxic gases, CO and HCN, but readings for both gases were well below acceptable exposure limits. The City of Escondido report concludes that "… only normal products combustion [sic] of a structure fire were detected and at levels considered by NIOSH and OSHA to be well below exposure thresholds."
- **Moss Landing, CA – January 16, 2025.** On January 16, 2025, a fire broke out in the 300 MW Moss Landing Battery Energy Storage Facility owned by Vistra Energy,

located within a converted, historic, generator hall on-site. At the request of Monterey County, the U.S. EPA deployed nine air monitoring stations for particulate matter and HF. As part of the multi-agency emergency response, U.S. EPA installed the first seven monitors shortly after the fire started on January 16 and later deployed two more. Two monitoring stations are located at the facility and four are located just outside the facility, including one at Moss Landing, three are in communities due east of the fire, to the south near Castroville, and to the north in the vicinity of Moss Landing Middle School. Monitoring stations have been located to account for any changes in wind direction and potential drift to nearby communities. U.S. EPA's monitoring showed concentrations of particulate matter to be consistent with the air quality index throughout the Monterey Bay and San Francisco Bay regions, with no measurements exceeding the moderate air quality level. HF gas was measured at one second intervals and there were no exceedances of California's human health standards. In addition to U.S. EPA's monitoring, Vistra Energy brought in a third-party environmental consultant, CTEH, right after the fire started, to conduct roaming and fixed air monitoring in communities (U.S. EPA 2025a). CTEH conducted extensive air quality monitoring in and around the Moss Landing community as part of response efforts. CTEH mobile air monitoring personnel sampled over 100 locations, testing for seven air constituents specific to this type of fire, including CO, HCl, HCN, HF, %LEL, O_2 and PM2.5. CTEH's monitoring did not detect hazardous compounds (HF, HCl, HCN, CO), and all particulate matter readings were low and within expected air quality index (AQI) bands deemed safe for the general public (Vistra 2025). Post-incident environmental testing and monitoring information is summarized on the County of Monterey website (County of Monterey 2025).

Historical incident data as discussed above can be a useful predictor for identifying and understanding future risks. Traditionally, CEC staff would also use modeling to predict future impacts where such impacts are considered foreseeable based on available information. However, due to the infrequent, irregular, and unplanned nature of the BESS thermal runaway/fire events, staff considers a modeling assessment of the public health impacts of such events to be speculative. In addition, as pointed out in the ACP report, while numerous publications have appeared in recent years addressing emissions associated with thermal runaway, the information is still somewhat limited. A comprehensive description of the chemical composition, total volume, and rate of production of the emissions for different battery chemistry, battery form, state of charge, stage of the event, and cause of the malfunction is not yet available. Regarding the information that is available, there are significant variations in the reported qualities within or between studies. These variations may be associated with differences in experimental procedures, quality control of batteries, or experimental uncertainty. Much research is still needed to provide definitive input information for predictive modeling (ACP 2025).

However, to address potential impacts during a BESS thermal runaway/fire event, the applicant provided a modeling analysis to estimate the worst-case TAC impacts at the

nearest sensitive receptor. The applicant modeled worst-case emission rates based on UL 9540A tests for three BESS suppliers. The applicant modeled TACs included CO, benzene, propane, n-Butane, i-Butane, Hexane, and Toluene. The applicant assumes 30 cells would be affected in a potential thermal runaway event, which is 10 times the UL 9540A results. Because HF, HCN, and HCl were not detected during the UL 9540A testing, CEC staff supplemented the applicant's modeling with conservative emission factors from published literature (Vistra 2024). The modeling analysis shows that TAC concentrations at the maximally exposed individual resident (MEIR), which is about 1,890 feet from the BESS component, would be below the OEHHA 1-hour RELs and U.S. EPA AEGL-1 levels and the acute HI would be below 1.0. Therefore, potential BESS thermal runaway/fire events would not expose sensitive receptors to substantial pollutant concentrations.

In summary, based on the review of the monitoring data for past BESS incidents, modeling analysis for this project, and the infrequent, irregular, and unplanned nature of the BESS thermal runaway/fire events, CEC staff concludes that potential BESS thermal runaway/fire events would not expose sensitive receptors to substantial pollutant concentrations. In addition, CEC staff recommended COCs in **Section 4.4, Worker Safety and Fire Protection**, and **Section 5.7, Hazards, Hazardous Materials, and Wildfire**, would further reduce any impacts to public health. COC **WORKER SAFETY-6** would ensure that the proposed BESS would comply with the latest versions of National Fire Protection Association (NFPA) 855 for BESS safety. COC **WORKER SAFETY-7** would require administrative and engineering controls to prevent or respond to a fire from the BESS. COC **WORKER SAFETY-8** and COC **WORKER SAFETY-10** would ensure additional fire protection and worker EMS response. COC **HAZ-9** would also require real-time measurements of air quality to provide timely feedback to any workers or people potentially affected. The adoption of these COCs would further reduce the risk and impacts of any BESS thermal runway/fire events.

5.10.2.3 Cumulative Impacts

Past, present, and reasonably foreseeable probable future public health impacts could be attributable to each of the cumulative projects, especially those that involve construction activities or O&M activities with substantial sources of air pollutants. As mentioned above, according to **Appendix A, Table A-1**, there are some existing, approved, pending and proposed projects of potential sources of toxic air contaminants within six miles of the project.

Each of the projects in the cumulative project scenario could result in some level of contribution to public health impacts, although the individual contribution of each project would be minimized if the project complies with applicable health-protective thresholds. The BAAD considers TAC emissions to be a localized issue, as TAC concentrations are generally highest near the source and decrease with distance. While air quality cumulative impacts could occur with sources within a six-mile radius (as discussed in **Section 5.1, Air Quality**), cumulative public health impacts from TACs are usually not significant unless the emitting sources are extremely close to each

other, within a few blocks, not miles. The CARB provides recommendations for siting new sources or sensitive receptors near TAC sources, with recommended distances typically ranging from 500 to 1,000 feet, depending on the source category (CARB 2005). BAAD recommends a 1,000-foot radius (or greater where appropriate) for a cumulative HRA.

Construction

Less Than Significant with Mitigation Incorporated. Based on the analysis below, and with the incorporation of the COC **AQ-SC5**, project construction would not contribute to cumulatively considerable impacts to Public Health and impacts would be less than significant with mitigation incorporated.

With the implementation of COC **AQ-SC5**, the contribution of the project construction to both cancer risk and chronic non-cancer impacts would be small in a cumulative context including other regional sources. Additionally, construction and decommissioning-related traffic is not expected to create a CO hotspot. Construction and decommissioning activities would be short-term, and impacts would be less than significant with mitigation incorporated on a cumulative basis.

Operation

Less Than Significant Impact. Based on the analysis below, project operation would not contribute to cumulatively considerable impacts to public health and impacts would be less than significant.

The public health impacts of the project operation would be very small even in a cumulative context including other regional sources; its contribution to area health impacts would thus be less than significant in a cumulative context. The applicant also provided a cumulative HRA and compared results with the BAAD threshold of significance for cumulative risk and hazards. The applicant's cumulative HRA shows that the TAC emissions from operation of the project, combined with other sources, would result in a Maximum Individual Cancer Risk of 1.02 in a million, a Chronic Hazard Index of 0.0001 and PM2.5 concentration of 0.07 $\mu g/m^3$, which are below the BAAD cumulative HRA significance thresholds (Dudek 2025g; Dudek 2025ggg). The project operational TAC health risk impacts would be less than significant without mitigation.

5.10.3 Project Conformance with Applicable LORS

Table 5.10-3 below details CEC staff's determination of conformance with applicable local, state and federal LORS, including any proposed COCs, where applicable, to ensure the project components within the CEC's Opt-In certification would conform with LORS. As shown in this table, staff concludes that with implementation of specific COCs, the proposed project would conform with all applicable LORS. The subsection below, "Proposed Conditions of Certification," contains the full text of the referenced COCs.

TABLE 5.10-3 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
Federal	
Clean Air Act	
NESHAPs under CAA, section 112 (42 U.S.C., § 7412), 40 CFR Part 63, NESHAP Subpart ZZZZ	**Yes.** Applies to proposed project's diesel-fueled stationary emergency generator engines. Emergency stationary RICE included with the proposed project would be subject to operating requirements in this federal regulation. Project owner would purchase certified engines and operate it according to manufacturer's instructions. See COCs **AQ-1** through **AQ-13**.
State	
California Health and Safety Code section 41700	**Yes.** The CEC COCs **AQ-1** through **AQ-13** are developed to ensure that no adverse public health effects or public nuisances result from operation of the project.
Air Toxic "Hot Spots" Information and Assessment Act of 1987 (AB 2588, 1987, Connelly)	**Yes.** The project would participate in the AB 2588 inventory and reporting program. Based on the HRA results, the project's cancer and chronic health risks would not exceed acceptable levels.
Local	
Bay Area AQMD	
Regulation 6 Rule 1 (Particulate Matter – General Requirements), Regulation 6 Rule 6 (Prohibition of Trackout), Regulation 8 Rule 1 (Organic Compounds – General Provisions), Regulation 8 Rule 3 (Architectural Coatings), Regulation 8 Rule 15 (Emulsified and Liquid Asphalts)	**Yes.** As detailed in **Section 5.1, Air Quality**, the project would comply with BAAD rules and regulations with implementation of Air Quality COCs **AQ-SC1** to **AQ-SC5**, **AQ-1** to **AQ-13**.

5.10.4 Conclusions and Recommendations

As discussed above, with implementation of COCs, the project would have a less than significant impact related to public health and would conform with applicable LORS. CEC staff recommends adopting COC **AQ-SC5** in **Section 5.1, Air Quality**.

Impacts associated with project components outside the CEC's Opt-In certification to be considered for permitting by CPUC would be less than significant.

5.10.5 Proposed Conditions of Certification

No Conditions of Certification are proposed for public health.

5.10.6 Recommended Mitigation Measures

No Mitigation Measures are proposed for public health.

5.10.7 References

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5.11 Socioeconomics

5.11.1 Environmental Setting

This section describes the environmental setting and regulatory background and discusses the impacts associated with the construction and operation of the project with respect to the population and housing, public services, and recreation. See **Section 2, Introduction**, for a description of the project components within the California Energy Commission's (CEC's) Opt-In certification and project components outside the CEC's Opt-In certification.

Existing Conditions

Population and Housing

The proposed Potentia-Viridi Battery Energy Storage System (BESS) (project) would be in eastern Alameda County near the San Joaquin County and Contra Costa County borders. The city of Tracy and community of Mountain House are nearby. California Energy Commission (CEC) staff considers Alameda County the study area for population and housing impact. The Oakland-Hayward-Berkeley (Alameda and Contra Costa Counties) Metropolitan Division (MD)[1] and Stockton-Lodi MSA (San Joaquin County)[2] is the study area for labor supply for project.

Population Growth

Alameda County has a population of 1,682,353 people and is the seventh largest most populus county in California (Census 2020, Alameda 2025). The project would be within an unincorporated area of Alameda County. The estimated population of unincorporated Alameda is 52,558 (DOF 2025).

The Association of Bay Area Governments (ABAG) encompasses Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma counties. ABAG conducts the Regional Housing Needs Allocation (RHNA) process, which mandates planning for housing needs, regardless of income, in the Bay Area. ABAG develops a methodology to allocate a portion of the housing needs to each city, town, and county in the region.

1 Metropolitan Division (MD) is a county or group of counties (or equivalent entities) delineated within a larger metropolitan statistical area, provided that the larger metropolitan statistical area contains a single core with a population of at least 2.5 million and other criteria are met. A Metropolitan Division consists of one or more main/secondary counties that represent an employment center or centers, plus adjacent counties associated with the main/secondary county or counties through commuting ties.
2 Metropolitan Statistical Areas (MSA) have at least one urbanized area of 50,000 or more population, plus adjacent territory that has a high degree of social and economic integration with the core as measured by commuting ties.

ABAG data is used in **Table 5.11-1** to show household growth projections between 2015 and 2050. ABAG divided the Bay Area counties into sub-county areas, called super districts. The super districts are combinations of cities, towns, and unincorporated areas that represent a more localized pattern of growth within the Bay Area (ABAG 2021a, page 122). The historical and projected households for East Alameda County super district in which the project site is located, plus Alameda County, are shown in **Table 5.11-1**.

TABLE 5.11-1 HISTORICAL AND PROJECTED HOUSEHOLDS

Super District/ Area	2015	2050	Household Change 2015-2050 Number	Projected Household Change 2015-2050 Percent
East Alameda County	72,000	132,000	60,000	83 percent
Alameda County	551,000	846,000	295,000	54 percent

Source: ABAG 2021b

The San Joaquin Council of Governments (SJCOG) is comprised of San Joaquin County and the cities of Escalon, Lathrop, Lodi, Manteca, Mountain House, Ripon, Stockton, and Tracy. The SJCOG data in **Table 5.11-2** is used to show household growth projections between 2015 and 2050.

TABLE 5.11-2 HISTORICAL AND PROJECTED POPULATIONS

Area	2015[2]	2020[1]	2050[2]	Projected Population Change 2015-2050 Number	Projected Population Change 2015-2050 Percent
Tracy	86,912	93,000	141,232	54,320	62.5 percent
Mountain House	15,010	24,499	50,628	35,618	236 percent
San Joaquin County	721,929	779,233	1,022,228	300,299	41.6 percent

Source: [1]Census 2020, [2]SJCOG 2020

Housing

The Alameda County Housing Element for the unincorporated area of Alameda County projected a need for 4,711 new housing units to accommodate projected population growth by 2031. This projection was adopted from the Regional Housing Needs Allocation (RHNA) estimates of necessary construction of housing units for the planning period of 2023 to 2031. (Alameda 2024)

Table 5.11-3 presents the housing supply data for the project area. Year 2025 housing indicates 30,322 vacant housing units within Alameda County and a vacancy rate of 4.9 percent.

TABLE 5.11-3 HOUSING SUPPLY ESTIMATES IN THE PROJECT AREA

Housing Supply	2025 Total Number	2025 Vacant Number	2025 Vacant Percent
Unincorporated Alameda County	52,558	1,764	3.4%
Alameda County	652,678	30,322	4.9%
Tracy	31,376	1,017	3.2%
Unincorporated San Joaquin County	45,792	2,593	5.7%
San Joaquin County	269,626	45,792	4.1%

Source: CA DOF 2025

Hotel accommodations are available in the nearby cities of Tracy, to the east, and Livermore, to the west of the project site. The cities have a combined total of 25 hotels and approximately 1,939 rooms.

Labor Supply

The project would be within Oakland-Hayward-Berkeley Metropolitan Division (MD) which is comprised of Alameda and Contra Costa Counties. The project site borders San Joaquin County which is the Stockton-Lodi Metropolitan Statistical Area (MSA). It is anticipated that construction workers would be drawn from the Oakland-Hayward-Berkeley (MD) and Stockton-Lodi Metropolitan Statistical Area (MSA). The California Employment Development Department 2022-2032 Occupational Employment Projections for project's construction are shown in **Table 5.11-4** and **Table 5.11-5**. The Oakland-Fremont-Berkeley MD (Alameda and Contra Costa County) employment projections are provided in **Table 5.11-4**. The Stockton-Lodi MSA (San Joaquin County) employment projections are provided in **Table 5.11-5**.

The project operations would employ 18 full-time employees, includes one plant manager, two technicians for plant operations, and 15 workers for BESS equipment and machinery maintenance. It is anticipated that operation workers would be drawn locally from Alameda and San Joaquin counties (Dudek 2025b).

TABLE 5.11-4 PROJECTED EMPLOYMENT GROWTH

Oakland-Fremont-Berkeley MD (Alameda and Contra Costa Counties)	Year 2022	Year 2032	Percent Change	Peak Construction Period (Months 8-10)
Project Manager/Supervisor[1]	5,090	5,630	10.6%	12
Safety Specialist[2]	1,480	1,590	7.4%	2
Civil Engineers	5,380	5,930	10.2%	3
Surveyors	520	600	15.4%	(2)
Construction Equipment Operators	2,800	3,020	7.9%	(12)
Construction Laborers (Dust, SWPP and Strctr)	9,920	11,150	12.4%	(40)
Carpenters	11,480	12,280	7%	(4)
Apprentice (Carpentering)	120	120	0%	(4)

TABLE 5.11-4 PROJECTED EMPLOYMENT GROWTH

Oakland-Fremont-Berkeley MD (Alameda and Contra Costa Counties)	Year 2022	Year 2032	Percent Change	Peak Construction Period (Months 8-10)
Iron Workers[3]	150	170	13.3%	(12)
Pile Driver Operators	-	-	-	(2)
Electricians	6,320	7,500	18.7%	(80)
Apprentice (Electrical)	200	210	5%	(30)

Notes: - No data available; () Number in the parentheses represents peak number of workers in a given month for a specific trade type of construction. 1 Construction Managers; 2 Construction and Building Inspectors 3 Reinforcing Iron and Rebar Workers; 4 Electrical Power-Line Installers and Repairers. CA EDD 2025

Table 5.11-5 provides the project's construction occupations and the Stockton-Lodi MSA (San Joaquin County) employment projections. It is anticipated that the occupation workers are from within Alameda County.

TABLE 5.11-5 PROJECTED EMPLOYMENT GROWTH

Stockton-Lodi MSA (San Joaquin County)	Year 2022	Year 2032	Percent Change	Peak Construction Period (Months 8-10)
Project Manager/Supervisor[1]	840	960	14.3%	12
Safety Specialist[2]	170	170	0%	2
Civil Engineers	570	610	7%	3
Surveyors	60	70	16.7%	(2)
Construction Equipment Operators	660	740	12.1%	(12)
Construction Laborers (Dust, SWPP and Strctr)	2,190	2,510	14.6%	(40)
Carpenters	2,140	2,450	14.5%	(4)
Apprentice (Carpentering)[3]	480	540	12.5%	(4)
Iron Workers	-	-	-	(12)
Pile Driver Operators	-	-	-	(2)
Electricians	1,400	1,600	14.3%	(80)
Apprentice (Electrical)	70	70	0%	(30)

Notes: - No data available; () Number in the parentheses represents peak number of workers in a given month for a specific trade type of construction. 1 Construction Managers; 2 Construction and Building Inspectors; 3 Helpers, Construction Trades; 4 Electrical Power-Line Installers and Repairers. CA EDD 2025

Public Services

The study area for public services-related impacts is Alameda County. Fire services would be provided to project site from the Alameda County Fire Department (ACFD) under contract from the California Department of Forestry and Fire Protection (CAL FIRE). Police services would be provided by the Alameda County Sheriff's Office. Park facilities would be provided by a special district, the East Bay Regional Park District

(EBRPD). Other public services, such as libraries, would be provided by the county. The project would be within the Lammersville Joint Unified School District.

Fire Protection

The project would be on land classified as State Responsibility Area (SRA) by the Board of Forestry and Fire Protection. The project site is on land CAL FIRE has classified as a High Fire Hazard Severity Zone (HFSZ) (ACFD 2025). CAL FIRE is responsible for fire prevention and suppression within the SRA (CAL FIRE 2024). CAL FIRE has a mutual aid agreement with the Alameda County Fire Department (ACFD).

The ACFD provides emergency fire and medical response and fire prevention services to the unincorporated areas of Alameda County. During the 2019-2020 fiscal year, the ACFD received 16,693 calls for the unincorporated areas of Alameda County. The calls included 1,082 calls for service, 203 fires, 315 other fires, 11,697 EMS/Rescue, 286 hazardous conditions, 949 good intent, 636 false calls, and 1,525 cancelled enroute. (ACSD 2020)

Castle Rock Station 26 is the closest CAL FIRE station to the project site. It is approximately 4 miles east of the project. Station 20, at 7000 East Avenue in Livermore, is the closest ACFD station to the project site. Station 20 is approximately 7.5 miles southwest of the project site.

Police Protection

Police protection would be provided by Alameda County Sheriff Office (ACSO). The ACSO is a full-service law enforcement agency and provides patrol and investigative services to the unincorporated areas of Alameda County. The ACSO has 1,017 sworn employees distributed among its five divisions (ACSO 2024). The Eden Township substation is responsible for policing Castro Valley, San Lorenzo, Ashland, Cherryland, and the unincorporated Tri Valley. The project would receive patrolling services from the Tri-Valley patrol dispatch office in the city of Dublin (Dudek 2025b pg 3.10-10). The California Highway Patrol (CHP) has jurisdiction for traffic enforcement and accident investigation in the unincorporated area of Alameda County (ACSO 2004).

The ACSO received 161,202 calls for service in 2023 (ACSO 2024). The ACSO's closest facility to the project is the Dublin Police Services. It is approximately 18.5 miles west of the project site. The Tracy Police Department is approximately 9 miles east of the project and is the closest law enforcement facility to the project.

Emergency Service Dispatch representatives and crime analysts were not able to simulate a response time to the project due to a lack of data for the project area. Drive times from the City of Dublin to the project site ranged from 29 to 37 minutes (Dudek 2025c).

Schools

The project would be within the Lammersville Joint Unified School District (LJUSD). The LJUSD is comprised of Mountain House Elementary School District in Alameda County and Lammersville School District in San Joaquin County (LJUSD 2011). LJUSD is comprised of eight elementary schools and one high school that serves transitional kindergarten through 12th grade. (LJUSD 2025) The district has an enrollment of 7,949 in the 2024-2025 school year (CDE 2025). Evelyn Costa Elementary and Peter Hanson Elementary schools are the closest schools to the project; approximately 4 miles northeast from project site.

Parks

The project site is within the EBRPD, which is the primary provider of the regional parks in Alameda and Contra Costa counties. The EBRPD takes the place of a county park system for Alameda and Contra Costa counties (EBRPD 2013). The EBRPD preserves and protects 126,809 acres which includes 73 regional parks, 1,339 miles of trails, and 31 regional inter-park trails (EBRPD 2025). The Brushy Peak Regional Preserve is 7.3 miles east of the project site. The 1,979 acre preserve offers hiking, biking, running, nature study, and dog walking on the park's trails.

The closest local parks are the Souza Family parks in the city of Tracy. The North Souza and South Souza parks are approximately 6.4 east of the project. The North Souza Park is a 1.6-acre park with a play area and shade structure. The South Souza Park is 2.3-acre park with a basketball court, play area, barbeque and shade structure. The city of Tracy's Parks, Recreation, and Community Services Department maintains the parks (Tracy 2024).

Other Public Services

Alameda County has 11 libraries, including one mobile library, to serve the county. The Dublin library, approximately 18 miles west, is the closest library to the project site in Alameda County. The closest library to the project site is the Tracy Library in the city of Tracy. The Tracy Library is approximately nine miles east of the project site and is maintained by San Joaquin County.

Regulatory

Federal

No federal regulations related to Socioeconomics apply to the project.

State

California Education Code

Section 17620. The governing body of any school district is authorized to levy a fee, charge, dedication, or other requirement for the purpose of funding the construction or reconstruction of school facilities.

Local

Lammersville Joint Unified School District Board Policy BP 7211 Facilities: Developer Fees. To finance the construction or reconstruction of school facilities needed to accommodate students common from new development, the Governing Board may establish, levy and collect developer fees on residential, commercial and industrial construction within the district, subject to restrictions specified by law and administrative regulation.

Cumulative

A project may result in a significant adverse cumulative impact when its effects are cumulatively considerable. Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, or probable future projects. CEC staff used Alameda County and the San Joaquin County as the geographic scope for socioeconomic cumulative impacts. A master list of cumulative projects within the study is provided in **Appendix A, Table A-1**. These projects include:

- Sand Hill Wind Repowering Project
- Mulqueeney Ranch Wind Repowering Project
- Viracocha Hills BESS (Reclaimed Wind)
- Griffith Energy Storage Project (Kola)
- Ronney Ranch
- Alameda Grant Line Solar 1 Project

5.11.2 Environmental Impacts

SOCIOECONOMICS	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐
c. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental				

SOCIOECONOMICS	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
i. Fire protection?	☐	☐	☒	☐
ii. Police Protection?	☐	☐	☒	☐
iii. Schools?	☐	☐	☐	☒
iv. Parks?	☐	☐	☐	☒
v. Other public facilities?	☐	☐	☐	☒
d. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
e. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, population and housing, public services, and recreation.

5.11.2.1 Methodology and Thresholds of Significance

In addition to the above environmental checklist, CEC staff used the following methodology and thresholds of significance to evaluate the project.

Methodology

The determination of the significance of any impacts on population, housing, police protection, schools, and parks and recreation is based on expert opinion supported by facts, including input from local and state agencies, and the industry-accepted, two-hour commute range for construction workers and one-hour commuting range for operational workers.

Impact discussions below for construction and operation pertain to project components both within the CEC's Opt-In Certification and project components outside the CEC's Opt-In certification.

Thresholds of Significance

There are no additional thresholds of significance applicable to this project.

5.11.2.2 Direct and Indirect Impacts

a. Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Construction

Less Than Significant Impact. Based on the analysis below, construction of the project (including the portion of the gen-tie to be constructed by PG&E) would not induce substantial unplanned growth in the study area, either directly or indirectly, and the impact would be less than significant.

The project would construct a 3,200 megawatt-hour battery energy storage system (BESS) and associated infrastructure. The project site is currently undeveloped, and the project does not propose new housing.

Construction activities would last 18 months and average 97 workers per month, with a peak workforce of 127 workers per month in months 8 through 10. Construction workers would be drawn locally from Alameda, Contra Costa, San Joaquin counties. It is anticipated that 88 percent of the workforce would come from within a 45-minute commuting area (Dudek 2025b). **Table 5.11-4** and **Table 5.11-5** shows the available workforce in the Alameda, Contra Costa, and San Joaquin counties.

Based on the proximity of the supply of construction workers, they are not likely to temporarily relocate closer to the project area. As shown in **Table 5.11-3**, there is sufficient housing available in the project area if some workers choose to relocate closer to the project site. Additionally, there are 25 hotels with approximately 1,939 rooms available in the nearby cities of Tracy and Livermore. Construction of the project would not lead to a temporary or permanent increase in population to the area. There is sufficient workforce within the three-county area for the project to meet the project's needs.

Operation

Less Than Significant Impact. Based on the analysis below, operation of the project would not induce substantial unplanned growth in the study area, either directly or indirectly, and the impact would be less than significant.

The project would employ approximately 18 operation workers. It is anticipated that all the operations workers would be drawn locally from Alameda County. However, if workers were to relocate closer to the project site, there is sufficient housing available and the population increase would be insignificant.

The gen-tie would not require its own operational workforce. No direct or indirect impact would occur.

b. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Construction

Less Than Significant Impact. Based on the analysis below, construction of the project would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere, and the impact would be less than significant.

The project would not necessitate the construction of replacement housing. The project site and gen-tie route are currently undeveloped and consist of fallowed grasslands for grazing. Project construction would average 97 workers per month and have a peak workforce of 127 per month. It is anticipated that the workforce would be local from the three-county area and are not likely to temporarily relocate closer to the project site. However, if some workers choose to relocate closer to the project site, there is sufficient housing available in the project area.

Operation

No Impact. The project site and gen-tie route are currently undeveloped and there is no housing on the site or within the route. The project would not displace any people or housing and construction of replacement housing elsewhere would not be necessary.

c. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

Construction

Less Than Significant Impact. Based on the analysis below, construction of the project would have less than significant impacts associated with the provision of new or physically altered government facilities, need for new or physically altered government facilities.

i. Fire protection?

Construction

Less Than Significant. The project site would be serviced by CAL FIRE and ACFD. CAL FIRE is the lead agency and has a mutual aid agreement with ACFD to pool resources

and respond to calls within each other's service areas. The project is on State Responsibility Area (SRA) land and is classified as High Fire Hazard Severity Zone.

Project construction activities could result in an increased need for fire protection response. Construction activities that could pose a risk for fire or the need for fire protection response due to heated exhaust or sparks, include tractors or backhoes, graders, drill rig, air compressors, and graders. Condition of Certification **WORKER SAFETY-1** would require a Construction Health and Safety Program which would include a Fire Prevention Plan.

Vegetation on the project site would be removed where necessary for fire protection and allow for a defensible space. Both the ACFD and CAL FIRE would review and comment on the facility's fire protection and suppression plans. The project would not require the construction of new or physically altered governmental facilities that could result in significant environmental impacts.

ii. Police protection?

Construction

Less Than Significant. The project site would be serviced by Alameda County Sheriff's Office (ACSO). Project construction activities could result in an increased need for law enforcement. The project construction an average of 97 workers and peak of 127 workers per month. It is anticipated that workers would be local and commute to the site daily. An increase in unforeseen traffic accidents or transportation issues could result from workers commuting during project construction.

Dublin Police Service is the closest ACSO station to the project site. ACSO response time to the project from the Dublin station is estimated to be 29 to 37 minutes based on drive-time assumptions. The project site would be secured by a perimeter fence and access gates. Condition of Certification **HAZ-4** requires a Construction Site Security Plan to ensure a minimum level of security for the site.

If there is an increased need for police protection for project construction, it would be temporary and cease with the completion of construction. The ACSO would not induce the construction of new or physically altered facilities.

iii. Schools?

Construction

No Impact. The project would be in the Lammersville Joint Unified School District. Based on the number and proximity of the available workforce for the project, construction workers from surrounding cities and counties are unlikely to temporarily relocate closer to the project. If some workers do temporarily relocate, they are not likely to bring their families with them. The California Government Code sets forth the exclusive methods of considering and mitigating impacts on school facilities. Section

65995 expressly provided that "[t]he payment or satisfaction of a fee, charge, or other requirement levied or imposed pursuant to Section 65995… are hereby deemed to be full and complete mitigation of any legislative or adjudicative act, or both, involving but not limited to, the planning, use, or development of real property, or any change in governmental organization on the provision of adequate school facilities." If there was an increase in children attending public school during the project construction, it would be mitigated through the payment of the school impact fee.

iv. Parks?

Construction

No Impact. Construction of the project would take 18 months to complete. Construction workers would be drawn from the three-county area and are not likely to relocate closer to the project site nor visit nearby park facilities while working on the project. If workers were to visit nearby park facilities, the usage would be temporary and cease with the completion of construction. Project construction would not result in an adverse physical environmental impact on parks.

v. Other public facilities?

Construction

No Impact. Project construction would last 18 months and require an average of 97 workers per month. The construction workforce would be drawn locally from the three-county and is not likely to temporarily relocate closer to the project site. If any construction workers were to visit public facilities, such as libraries, in the vicinity of the project, the use would be temporary and cease at the end of construction.

i. Fire protection?

Operation

Less Than Significant Impact. Operation of the project could result in an increased demand for fire protection services. The project would have onsite fire detection systems and within the individual BESS enclosures. An infrared camera system would be installed and an alarm would trigger in case of a fire onsite. The fire protection system would automatically shut down any affected battery storage components and prevent the spread of fire. The interior of the BESS enclosures would be cooled after a fire. The BESS would include leak detection equipment and equipment for detecting and venting hydrogen gas (Dudek 2025o).

A thermal runaway event could be caused by faults, mechanical damage, or manufacturing defects in the lithium-ion batteries. If a thermal runaway event occurs, the BESS enclosures are constructed so that the fire would not spread from one enclosure to a neighboring enclosure (Dudek 2025n). Condition of Certification **WORKER SAFETY-2** would require an Operations and Maintenance Program that would include a Fire Prevention Plan.

With the implementation of these measures, the project would not result in substantial adverse physical environmental impacts associated with the provision or physically altered fire service facilities to maintain acceptable service ratios, response times, or other performance objectives.

ii. Police protection?

Operation

Less Than Significant Impact. Operations of the project could result in an increased need for ACSO from possible theft, trespassing, or vandalism. The project site would be secured with 8-foot-tall chain link fences topped with 1-foot of barbed or razor wire. A fence would enclose the BESS site and another fence would enclose the substation. Gates with lockboxes would be installed at access points along the fence lines of the BESS site. Security lighting would be installed around the BESS yards and at the substation. Security cameras would be installed and monitored 24 hours per day, 7 days per week. Condition of Certification **HAZ-5** requires an Operation Security Plan to ensure a minimum level of security for the project. These measures would assist in preventing unauthorized access to the project. Project operations would not result in substantial adverse physical impacts associated with the provision of new or physically alter school facilities.

iii. Schools?

Operation

No Impact. The project would employ 18 operations workers. The operational workforce would be local, drawn from Alameda County, and is not expected to relocate closer to the project site. Given the small size of the workforce, if some workers were to relocate closer to the project, it would have a negligible impact on school facilities and performance objectives. Although no project-related impacts would occur, the applicant would need to comply with the California Government Code Section 65995 school impact fees. Implementation of **SOCIO-1** would ensure that the school impact fee is paid.

iv. Parks

Operation

No Impact. The project would employ 18 operation workers. The workers would be drawn locally from Alameda County and are not likely to relocate closer to the project site. However, if workers did relocate closer to the project site, there would be a negligible increase in demand for parks or other recreational facilities.

vi. Other public facilities?

Operation

No Impact. The project would employ 18 operation workers and would be drawn locally from Alameda County. This small number of employees would not create a need for additional or altered public facilities.

d. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Construction

No Impact. Based on the analysis below, the project's increased use of existing parks and recreational facilities during construction would have no impact.

Project construction would last 18 months and require an average of 97 workers per month and have a peak workforce of 127 workers per month. Construction workers would be local to the three-county area and are not likely relocate closer to the project site. Construction workers living nearby would already use existing state, county, or local parks and, therefore, no change in facility use would occur to accelerate facility deterioration. If some construction workers relocated closer to the project site, they could visit nearby parks or recreational facilities before or after the workday, but this increase in use would not be in numbers that result in substantial physical deterioration. Additionally, any increase in use would be temporary and cease at the end of construction.

Operation

No Impact. Based on the analysis below, the project's increased use of existing parks and recreational facilities during operation would have no impact.

Operation of the project would not increase the usage of existing parks and recreational facilities. The project would have 18 employees drawn locally from Alameda County and are not likely to relocate closer to the project. If workers were to relocate closer to the project site, the addition of 18 employees and families would have negligible impact on park and recreation facilities. The project would not accelerate the physical deterioration of parks and recreational facilities.

e. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Construction

No Impact. Based on the analysis below, construction of the project would not include recreational facilities or require the construction or expansion of recreational facilities, therefore, no associated physical impact to the environment would occur.

Construction

Recreational facilities are not included in the project, nor would the project require the construction or expansion of recreational facilities. Project construction would last 18 months and average 97 workers per month. Construction workers do not typically visit recreational facilities while working on projects. If some workers were to use nearby recreational facilities, the usage would be temporary and end with the completion of construction.

Operation

No Impact. Based on the analysis below, construction of the project would not include recreational facilities or require the construction or expansion of recreational facilities, therefore, no associated physical impact to the environment would occur.

The project would not impact surrounding parks and recreational facilities and would not require the construction or expansion of recreational facilities. Project operations would require 18 workers drawn locally from Alameda County. If workers were to relocate closer to the project site, the small number of employees required for the project would have a negligible impact on recreational facilities.

5.11.2.3 Cumulative Impacts

Less Than Significant Impact. The construction and operation of the project would not make a cumulatively considerable contribution to any significant cumulative impacts related to population and housing, public services, and recreation facilities.

Cumulative Population and Housing

Construction and operation of the project, when considered with the other proposed projects, would not lead to substantial unplanned population grow or displace substantial number of people or houses. The cumulative projects are in different stages of approval and development, so the labor needed to construct them would be spread out over time. The project construction would average 97 workers per month and have a peak workforce of 127 workers per month. As shown in **Table 5.11-6** there is a sufficient workforce available for these projects.

TABLE 5.11-6 LABOR SUPPLY FOR THE STUDY AREA

Total Labor (Construction he Workforce*)	Total Workforce for 2022	Total Projected Workforces for 2032	Growth from 2030	Percent Growth from 2030
Oakland-Fremont-Berkeley MD (Alameda and Contra Costa Counties)	47,070	52,070	5,000	10.6

TABLE 5.11-6 LABOR SUPPLY FOR THE STUDY AREA

Total Labor (Construction he Workforce*)	Total Workforce for 2022	Total Projected Workforces for 2032	Growth from 2030	Percent Growth from 2030
Stockton-Lodi MSA (San Joaquin County)	8,740	9,910	1,170	13.4

Notes. Total workforce includes only crafts specifically needed for Potentia Viridi. * l Tables 5.11-4 and 5.11-5 for occupations included in total construction figures. Source: CA EDD 2025

Operation of the project would require approximately 18 employees and would be drawn from Alameda County. Given the low number of employments required for the project and with consideration of the other proposed cumulative projects, the project would not lead to unplanned population growth.

As shown in **Table 5.11-3**, there is housing stock to accommodate project construction and operation workers seeking lodging. Workers for the project are expected to be recruited from Alameda, Contra Costa, and San Joaquin counties. If any construction workers seek lodging closer to the project site, it would be temporary and no permanent change in the population would occur. The small number of operational employees the project would not affect the available housing stock. Construction and operation of the project would not contribute to a cumulative significant impact.

Cumulative Public Services (Fire Protection, Police Protection, Schools, Parks, or Other Facilities)

Construction and operation of the project could increase the need for fire protection and police protection. The project site would be serviced by CAL FIRE and ACFD, there is a mutual aid agreement to pool resources and respond to calls. Additional safety concerns would be addressed with **HAZ-4** and **HAZ-5** which require security plans for project construction and operation and **WORKER SAFETY-1** and **WORKER SAFETY-2** requiring Health and Safety Programs during construction, commissioning, and operation of the project.

Construction of the project would not have any adverse impacts on schools, parks or other facilities. The construction workforce would be drawn from Alameda, Contra Costa, and San Joaquin counties and the operation workforce be drawn from Alameda County. The workers that may relocate closer to the project site would not create a need for additional school or recreational facilities. For any construction workers that may relocate, it would be temporary and end with the completion of construction. The low employment required for operations would have an insignificant effect on schools and park facilities.

The cumulative projects would use the workers in the same occupations as the proposed project. As shown in **Table 5.11-6**, the local workforce is sufficient to support these projects concurrently with the proposed project. Therefore, any workers for these projects would not create a need for additional schools or recreational facilities.

Recreation

The Potentia-Viridi BESS project and cumulative projects would likely rely on the local workforce from three-county area for construction and operations. It is anticipated that workers would commute to the project site. If some workers were to use the recreational facilities closest to the project site, it would not cause an acceleration of physical deterioration of the facilities. Any use of parks and recreational facilities would be temporary for the construction workers and negligible with the low employment of operations. Additionally, recreational facilities are not included or required as part of the project. Project construction and operation would not contribute to a significant cumulative effect.

5.11.3 Project Conformance with Applicable LORS

Table 5.11-7 presents CEC staff's determination of conformance with applicable state and local laws, ordinances, and standards (LORS), including any proposed conditions of certification (COC), where applicable, to ensure the project would conform with LORS. No federal regulations related to socioeconomics apply to the project. CEC staff concludes that with implementation of COCs, the proposed project would be consistent with all applicable LORS. The subsection below, "Proposed Conditions of Certification," contains the full text of the referenced COCs.

TABLE 5.11-7 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis For Determination
State	
Capital Education Code, section 17620	
The governing board of any school district is authorized to levy a fee, charge, dedication, or other requirement for the purpose of funding the construction or reconstructions of school facilities.	**Yes.** COC **SOCIO-1** would require the project owner to pay school impact fees to the Lammersville Joint Unified School District.
California Code of Government Code, sections 65995-65998	
Except for a fee, charge, dedication of other requirement authorized under Section 17620 of the Education Code, state and local public agencies may not impose fees, charges, or other financial requirement to offset the cost for school facilities.	**Yes.** The proposed project would not trigger any state and local public agency fees, etc. to offset the cost for school facilities. Therefore, the project is in conformance.
Local	
Lammersville Joint Unified School District Board Policy	
BP 7211 Facilities: Developer Fees – In order to finance the construction or reconstruction of local school facilities needed to accommodate increased student enrollment resulting from new development, the Governing Board may establish, levy, and collect developer fees on residential, commercial, and industrial construction within the district, subject to restrictions specified by law.	**Yes.** COC **SOCIO-1** would require the project owner to pay school impact fees to the Lammersville Joint Unified School District Board Policy.

The Lammersville Joint Unified School District Policy (BP 7211 Facilities: Developer Fees) allows the Board of Trustees to establish, levy, and collect developer fees. The current school impact fee for the district is $0.84 per square foot of covered, enclosed

commercial/industrial space (LJUSD 2025). Based on the proposed size of the enclosed structures (total 43,200 square feet), an estimated $36,288 would be assessed. As shown in **Table 5.11-7**, CEC staff concludes that with implementation of COC **SOCIO-1**, the project would conform with all applicable LORS. The subsection below "5.11.5 Proposed Conditions of Certification", contains the full text of COC **SOCIO-1.**

5.11.4 Conclusions and Recommendations

As discussed above, with implementation of the COC, the project would have a less than significant impact related to socioeconomics and would conform with applicable LORS. CEC staff recommends adopting the COC as detailed in subsection "5.11.5 Proposed Conditions of Certification" below.

5.11.5 Proposed Conditions of Certification

SOCIO-1 The project owner shall pay the current one-time statutory school facility development fee authorized in Education Code Section 17620.

Verification: At least 30 days prior to the start of construction, the project owner shall provide to the CPM proof of payment to the Office of Education of the statutory development fee.

5.11.6 Recommended Mitigation Measures

There are no recommended mitigation measures for socioeconomics.

5.11.7 References

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5.12 Solid Waste Management

5.12.1 Environmental Setting

The project would be in unincorporated eastern Alameda County, approximately eight miles west-southwest of Tracy, California, and five miles south-southwest of the community of Mountain House. The project would cover approximately 70 acres (permanently disturbed) of the total 102-acre project area, on pastoral land in the rolling hills along the eastern margin of the Coast Ranges. The project would include a 400 megawatt (MW) battery energy storage system (BESS) capable of 3,200 MW hours (MWh) of power storage, three operation and maintenance (O&M) buildings, and a substation. The project would be connected to the nearby Pacific Gas and Electric (PG&E) Tesla substation by a 2,884-foot long new single-circuit 500kV gen-tie line (AMLGMN 2024o, Dudek 2025d). According to the Alameda County zoning viewer public access map website, the project site is zoned as agriculture, with a combining district B-E requiring a minimum building site size of 100 acres (Alameda County 2025a). See **Section 2, Introduction**, for a description of the project components within the California Energy Commission's (CEC's) Opt-In certification and project components outside the CECs Opt-In certification.

Solid Waste Generation and Disposal

Nonhazardous solid waste (see below at 5.12.2.2(a) for more detail) would be recycled or disposed at a Class II/III facility. Third-party vendors would be contracted by the project to manage the handling and disposal of solid waste. Both facilities listed below accept construction and demolition waste.

The following two landfills within Alameda County are proposed to dispose of solid waste generated from the project:

- Altamont Landfill & Resource Recovery, Class II/III Facility (SWIS No. 01-AA-0009) – Permitted through 2070, remaining capacity of 65,400,000 CY as of June 30, 2016, daily throughput 11,150 tons (CalRecycle 2025).
- Vasco Road Sanitary Landfill, Class II/III Facility (SWIS No. 01-AA-0010) – Permitted through 2051, remaining capacity of 11,560,000 CY as of November 1, 2022, daily throughput 2,518 tons (CalRecycle 2025).

Regulatory

Federal

Resource Conservation and Recovery Act (RCRA), 40 CFR, Subtitle D. RCRA Subtitle D regulates the disposal of non-hazardous waste. It includes guidelines for the storage and collection of residential, commercial and institutional solid waste (Part 243), and source separation for material recovery (Part 246) design of municipal solid waste facilities (Part 258).

State

Integrated Waste Management Act (PRC Section § 40000 et seq.). The Integrated Waste Management Act of 1989 established the California Integrated Waste Management Board (CIWMB), revamped the government codes regulating solid waste management, and required cities and counties to reduce the amount of solid waste disposed of in landfills by 50 percent. Duties of the CIWMB were transferred to California Department of Resources Recycling and Recovery (CalRecycle) in January 2010. Under CalRecycle's oversight, counties must adopt regulations and policies to comply with the Integrated Waste Management Act.

Mandatory Commercial Recycling Law (PRC Section § 42920). Public Resources Code section 41780.01 (AB 341, Chesbro, Chapter 476, Statutes of 2011) set a statewide goal of reducing solid waste by 75 percent by 2020 and annually thereafter. AB 341 also established mandatory recycling programs for solid waste generated by businesses, public entities, and multi-family dwellings generated solid waste. CalRecycle adopted requirements for mandatory recycling of commercial solid waste by businesses which became effective on May 7, 2012 (Cal. Code Regs. tit 14, § 18837.) In addition, Public Resources Code section 42649.2 (SB 1018, Chapter 39, Statutes of 2012) requires any business generating over 4 cy of solid waste per week to arrange for recycling services.

Short-Lived Climate Pollutant Reduction Law (PRC Section § 42652 et seq.). Approved by the Governor on September 19, 2016, Short-Lived Climate Pollutant Reduction Law (SB 1383, Lara, Chapter 395, Statutes of 2016) established statewide targets to reduce disposal of organic waste to 50 percent of 2014 levels by 2020 and to 75 percent of 2014 levels by 2025.

California Energy Efficiency Standards for Residential and Nonresidential Buildings – Green Building Code (2011), CCR Title 24 Update (2019). The California Green Buildings Standards Code applies to the planning, design, operation, construction, use, and occupancy of newly constructed buildings and requires energy and water-efficient indoor infrastructure. The related waste management plan is required to allow for the diversion of 50 percent of the generated waste away from the landfill.

Local

Alameda County, East County Area Plan. The following goals and policies apply to solid waste management issues related to the project (Alameda County 2000):

- *Goal* - To provide sufficient long-term landfill capacity for County residents, without impeding achievement of the County Charter recycling goals, and to ensure the compatibility of solid waste facilities and adjacent uses.
- *Policy 151* - The County shall provide for minimum state requirements for landfill capacity. Permits for new and expanded landfills shall be limited to 15 years' capacity, except to the extent a longer period is necessary to meet State standards.

Alameda County Ordinances

4-1.2, Littering Unlawful. It shall be unlawful for any person to litter public property or the property of another.

6.32.060, Garbage Removal Required. Except as otherwise provided in Section 5.12.100 of Alameda County ordinance, all garbage created, produced or accumulated in or about all dwelling units, industrial, commercial or business structures or premises shall be removed at least weekly and disposed of at an approved disposal site.

6.40.030, Declaration of Policy. It is hereby declared to be in the public interest and in the interest of all the residents of the county that the accumulation, preparation, storage, collection, transportation and disposal of garbage, rubbish and refuse, in the unincorporated area of the county, be handled in such a manner so as to prohibit the harboring and breeding of rodents and insects, and so as to reduce pollution in the air caused by burning, fermentation or putrefaction of such materials, and so as to prevent the spread of disease, and so as to reduce the hazards of fire, and the prevention of unsightliness resulting in the depreciation of property values and the comfortable enjoyment of life.

5.12.2 Environmental Impacts

SOLID WASTE MANAGEMENT Would the project:	**Significant and Unavoidable Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☒	☐	☐
b. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, utilities and service systems.

5.12.2.1 Methodology and Thresholds of Significance

The solid waste facilities identified to support the project were evaluated for compliance with State solid waste management and reduction statutes, regulations and requirements, as well as assessed to determine if the proposed project would pose an undue burden on landfill capacity.

5.12.2.2 Direct and Indirect Impacts

a. Would the project generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals

Project Components Within the CEC's Opt-In Certification

Construction

Less Than Significant with Mitigation Incorporated. Solid waste consisting of the following materials would be generated during the 18-month construction period (AMLGMN 2024w):

- Concrete (20 tons) – Excess concrete is expected to be generated during project construction.
- Scrap Metal (20 tons) – During construction, scrap metal would be generated from the installation of battery storage units.
- Scrap Wood, Plastic, Cardboard and Paper (10 tons) – Wood construction waste resulting from pallets, cardboard packaging and common trash.
- Soil and Rock (117,183 tons) – Soil and rock would be generated during excavation and grading activities associated with project construction. Where feasible, this material would be used as fill on the project site. Excavating, digging, etc. n the site is ultimately anticipated to result in nearly balanced cut and fill volumes; however, preliminary designs conservatively estimate an excess of 243,118 cubic yards (CY), or 117,425 tons (USEPA 2016), of soil and rock waste that would need to be exported (AMLGMN 2024jj).

Assuming the anticipated construction schedule of 18 months (Dudek 2025d), an estimated 50 tons of solid waste would be generated during project construction excluding exported soil and rock. Including exported soil and rock, solid waste generated during construction would be 117,233 tons. This solid waste would be diverted from landfills and recycled to the extent possible to comply with the goals of California Public Resource Code (PRC) Section 41780.01 and the Green Building Code. However, solid waste that cannot be recycled would be disposed at one of the two Class II/III landfills listed in the Environmental Setting section. According to CalRecycle, the combined remaining capacity of these two landfills is over 76 million CY (CalRecycle 2025).

By converting the tonnage of materials provided in the application, an estimated 440 CY of solid waste would be generated during project construction excluding exported soil and rock. Including exported soil and rock, the estimated volume of solid waste would be 243,558 CY (USEPA 2016). Assuming all the construction-related solid waste could not be recycled, the estimated amount of solid waste generated during project construction without exported soil and rock would represent 0.0006 percent of the

available capacity of the two listed landfills. Including the exported soil and rock, the volume of construction solid waste would represent 0.3 percent of the available capacity of the two listed landfills.

To ensure recycling of solid waste generated during project construction is recycled to the greatest extent possible, CEC staff proposes a Construction Waste Management Plan as required in Condition of Certification (COC) **WASTE-1**.

Considering the foregoing analysis with mitigation incorporated, construction of the project would have less than significant impact on the capacity of local solid waste infrastructure.

Operation

Less Than Significant with Mitigation Incorporated. During project O&M activities, up to 26 tons of rusted/broken metal parts, defective electronic components, electrical materials would be generated annually (AMLGMN 2024w). This solid waste would be diverted from landfills and recycled to the extent possible to comply with PRC Section 42920 and the Green Building Code. However, solid waste that cannot be recycled would be disposed of in one of the two Class II/III landfills listed in the Environmental Setting section. As stated in the previous section, the combined remaining capacity of these two landfills is over 76 million CY (CalRecycle 2025).

By converting the anticipated tonnage provided in the application and estimating the proportions of each class of materials, approximately 372 CY of solid waste would be generated during project operations (SCDHEC 2017, USEPA 2016). Assuming all the operational solid waste could not be recycled, the estimated amount of solid waste generated during project operations would represent 0.0005 percent of the available capacity of the two listed landfills and would have minimal impact.

The Operations Waste Management Plan proposed in COC **WASTE-1** would ensure the recycling of solid waste generated during project construction to the greatest extent possible and not in excess of state or local standards.

Therefore, with mitigation incorporated, construction of the project operations would have less than significant impact on the capacity of local solid waste infrastructure.

Project Components Outside the CEC's Opt-In Certification

Construction

Less Than Significant Impact with Mitigation. The 1,000 feet of gen-tie transmission lines between the point of change of ownership (POCO) and the Tesla substation would be under Pacific, Gas and Electric (PG&E) jurisdiction. During construction of the PG&E controlled gen-tie transmission lines, solid waste generation is expected to be minimal and not exceed the capacity of local landfills. With the incorporation of recommended

mitigation measure **MM WASTE-1**, solid waste generated during construction would be recycled to the greatest extent possible**.**

Operation

No Impact. No solid waste is expected to be generated during the operation of the PG&E controlled gen-tie transmission lines.

b. Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Project Components Within the CECs Opt-In Certification

Based on the analysis below, both construction and operation of the project would comply with federal, state and local solid waste regulations and have no impact.

Construction

No Impact. The California Integrated Waste Management Act of 1989 requires local jurisdictions in California to reduce, by 50 percent, the amount of solid waste disposed of in landfills by the year 2000 and beyond. During project construction, solid waste would be collected and hauled off-site for recycling or disposal in local jurisdictions within Alameda County that have programs in place to ensure that disposal of solid waste complies with state requirements. Implementation of COC **WASTE-1** would ensure the recycling of solid waste generated during project construction to the greatest extent possible. The project would not generate any special or unique wastes during the construction phase that would make the project out of compliance with federal, state, or local statutes, as well as solid waste management and reduction regulations. Management of hazardous waste along with applicable federal regulations are discussed in **Section 5.7, Hazards, Hazardous Materials, and Wildfire.**

Operation

No Impact. During operation, the project would comply with federal, state, and local statutes and regulations related to solid waste. Implementation of COC **WASTE-1** would ensure the recycling of solid waste generated during project operation to the greatest extent possible. There would be no change in compliance with federal, state, or local statutes and regulations related to solid waste management and reduction.

Project Components Outside the CECs Opt-In Certification

Construction

Less Than Significant Impact with Mitigation. The approximately 1,300 feet of gen-tie transmission lines between the POCO and the Tesla substation would be under PG&E jurisdiction. During construction of the PG&E controlled gen-tie transmission lines, solid waste generation is expected to be minimal and not exceed the capacity of local landfills. With the incorporation of recommended mitigation measure **MM WASTE-1**, solid waste generated during construction would be recycled to the greatest extent

possible. Construction would remain in compliance with federal, state, and local solid waste management and reduction requirements.

Operation

No Impact. No solid waste is expected to be generated during the operation of the PG&E controlled gen-tie transmission lines. Federal, state, or local requirements for solid waste management and reduction would not be applicable.

5.12.2.3 Cumulative Impacts

Past, present, and probable future projects listed in **Appendix A-1** (Cumulative Scenario) were gathered from the application materials and from surrounding governmental agency sources within a six-mile buffer. CEC staff completed a comprehensive exercise to identify a wide range of projects in the vicinity of the proposed project to fully analyze potential cumulative impacts to solid waste.

In addition to the projects identified in the application, CEC staff identified additional projects through independent research (Alameda County 2025b, Alameda County 2025c, CAISO 2024, CAISO 2025, Cal-SCH 2025, Caltrans 2025a, Caltrans 2025b, ICF 2020, Jacobs 2025, San Joaquin County 2025, Santa Clara 2019, Tracy 2025). Five solar/wind turbine energy projects within the 5-mile buffer were identified on Alameda County websites (Alameda County 2025b, Alameda County 2025c).

No corroborative online information could be found on five CAISO energy storage projects identified by the applicant, projects identified within the City of Tracy projects, and five Caltrans roadwork projects; therefore, those projects were not included here.

Projects in addition to the list in Appendix A-1 used to evaluate cumulative impacts for solid waste include the following:

- Alameda County Community Department Agency (7).
- San Joaquin County Community Development Department (1).
- City of Tracy Development Services Department (5).
- California Department of Transportation (Caltrans) (6).

Identified projects fall within the following categories, for a total of 19:

- Solar Energy (1)
- Wind Energy (3)
- Energy Storage (2)
- Commercial (2)
- Industrial (3)
- Residential (2)

- Roadwork (6)

According to environmental documents, the six Caltrans roadwork projects would generate a minimal amount of solid waste during construction and thus they are determined to have "No Impact" or "Less Than Significant Impact" (Caltrans 2025a, Caltrans 2025b). Commercial and industrial projects along the I-580 corridor were both designated as "Less Than Significant Impact" to local Altamont or Vasco Road landfills with respect to solid waste generation. Large scale residential, commercial and industrial projects in the greater Tracy area would produce a much greater amount of solid waste during operation than the subject project (between 4,236 and 130,305 tons annually). However, these projects would use the Altamont or Vasco Road landfills (Tracy 2025, San Joaquin County 2025).

All six energy related projects (Refer to Appendix A, Table A-1), excluding the KOLA Energy Battery Storage project, are proposed to use either Altamont or Vasco Road landfills for solid waste disposal (Alameda County 2025b, Alameda County 2025c, Jacobs 2025, Santa Clara 2019).

Solid waste generation for the Viracocha Hill BESS project during construction is estimated at 46 tons. During operations the project is estimated to generate 0.06 tons annually (Jacobs 2025). The Alameda Grant Line Solar 1 project is expected to generate a minimum amount of solid waste during construction and operation (Alameda County 2025b). According to the Altamont Pass Wind Resource Area Repowering Program environmental impact report (PIER) and related documents, the three wind turbine repowering projects would use a minimal amount of water during operation and are designated as "Less Than Significant Impact" projects to local Altamont or Vasco Road landfills (Alameda County 2014, G, Santa Clara 2019). Although numeric values were not provided for the majority of projects using either Altamont or Vasco Road landfills for solid waste disposal, all would either generate a minimum amount of solid waste or designated as No Impact or Less than Significant Impact to the capacity of these landfills.

Therefore, the cumulative impact of local projects on the Altamont or Vasco Road landfill capacity is considered less than significant.

5.12.3 Project Conformance with Applicable LORS

Table 5.12-1 below details CEC staff's determination of conformance with applicable local, state and federal LORS, including any proposed COCs, where applicable, to ensure the project components within the CEC's Opt-In certification would conform with LORS. As shown in this table, CEC staff concludes that with implementation of specific COCs, the components of the proposed project within the CEC's Opt-In Certification would conform with all applicable LORS. The subsection below, "Proposed Conditions of Certification," contains the full text of the referenced COCs.

TABLE 5.12-1 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
Federal	
Resource Conservation and Recovery Act (RCRA)	
40 CFR, Subtitle D. Provides guidelines for the storage and collection of residential, commercial, and institutional solid waste (Part 243), source separation for material recovery (Part 246), and design of municipal solid waste facilities (Part 258).	**Yes.** All landfills proposed for use with the project would comply with Federal regulations.
State	
Integrated Waste Management Act (PRC § 40000 et. seq.)	
Public Resources Code Section § 40000. Established the California Integrated Waste Management Board (CIWMB), revamped the government codes regulating solid waste management, and required cities and counties to reduce the amount of solid waste disposed of in landfills by 50 percent.	**Yes.** All landfills proposed for use with the project would comply with State statutes.
Reduction of Solid Waste (PRC § 41780.01)	
Public Resources Code Section 41780.01. Set a statewide goal of reducing solid waste by 75 percent by 2020. It also established mandatory recycling programs for solid waste.	**Yes.** All landfills proposed for use with the project would comply with State statutes. COC **WASTE-1** would assist with the solid waste reduction requirement of the statute.
California Senate Bill 1383 (Reduction of Organic Waste)	
SB 1383/CCR Title 14 Section § 17402. Established statewide targets to reduce 2014 organic waste levels to 50 percent by 2020 and to 75 percent by 2025.	**Yes.** All landfills proposed for use with the project would comply with State regulations.
Local	
Alameda County Ordinance	
6.32.060. All garbage created, produced or accumulated in or about all dwelling units, industrial, commercial or business structures or premises shall be removed at least weekly and disposed of at an approved disposal site.	**Yes.** All landfills proposed for use with the project would comply with local ordinances.

5.12.4 Conclusions and Recommendations

CEC staff recommends adopting the COCs as detailed in subsection "5.12.5 Proposed Conditions of Certification" below. The COCs below are enforceable as part of the CEC's certificate for the portions of the project constituting the site and related facilities.

As discussed above, with implementation of the proposed COCs and mitigation measures (MMs), the project would have a less than significant impact related to solid waste management and would conform with applicable LORS.

5.12.5 Proposed Conditions of Certification

The following proposed conditions of certification include measures to ensure conformance with applicable LORS.

WASTE-1 The project owner shall prepare a Construction Waste Management Plan and an Operation Waste Management Plan for all wastes generated during construction and operation of the facility, respectively, and shall submit both plans to the Compliance Project Manager (CPM) for review and approval. The plans shall contain, at a minimum, the following:

- A description of all waste streams, including projections of frequency, amounts generated and hazard classifications; and
- Methods of managing each waste, including treatment methods and companies contracted with for treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/reduction plans.

Verification: No less than 30 days prior to the start of site mobilization, the project owner shall submit the Construction Waste Management Plan to the CPM for approval.

The Operation Waste Management Plan shall be submitted to the CPM no less than 30 days prior to the start of project operation for approval. The project owner shall submit any required revisions within 20 days of notification by the CPM.

In the Annual Compliance Reports, the project owner shall document the actual waste management methods used during the year compared to the planned management methods.

5.12.6 Recommended Mitigation Measures for Project Components Outside the CECs Opt-In Certification

MM WASTE-1 The project owner shall prepare a Construction Waste Management Plan and an Operation Waste Management Plan for all wastes generated during construction and operation of the facility, respectively, and shall submit both plans to the Compliance Project Manager (CPM) for review and approval. The plans shall contain, at a minimum, the following:

- A description of all waste streams, including projections of frequency, amounts generated and hazard classifications; and
- Methods of managing each waste, including treatment methods and companies contracted with for treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/reduction plans.

Verification: No less than 30 days prior to the start of site mobilization, the project owner shall submit the Construction Waste Management Plan to the CPM for approval.

The Operation Waste Management Plan shall be submitted to the CPM no less than 30 days prior to the start of project operation for approval. The project owner shall submit any required revisions within 20 days of notification by the CPM.

In the Annual Compliance Reports, the project owner shall document the actual waste management methods used during the year compared to the planned management methods.

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5.13 Transmission Line Safety and Nuisance

The applicant, Levy Alameda, LLC, and its affiliates have proposed constructing and operating the Potentia-Viridi Battery Energy Storage System (project) on approximately 102 acres in eastern Alameda County. The project facilities include a battery energy storage system (BESS), three operations and maintenance (O&M) buildings, a project substation, a 500 kV overhead intertie line, and interconnection facilities within the existing Pacific Gas and Electric Company (PG&E)- owned and operated Tesla substation. The project's 34.5- 500 kV step-up substation would interconnect PG&E's Tesla 500 kV substation with a 2,884-foot-long overhead generator tie line. The project and the gen-tie from the onsite project substation to the point of change of ownership (POCO), the first transmission tower/structure, will be owned and operated by the applicant. The first transmission tower also establishes the point of interconnect (POI). PG&E will construct and own the gen-tie from the POCO/POI to the fence line of the Tesla substation. See **Section 2, Introduction**, for a complete description of the project components within the California Energy Commission's (CEC's) Opt-In certification and project components outside the CEC's Opt-In certification.

5.13.1 Environmental Setting

Regulatory

The following section outlines the national, federal, state, and local laws and policies that apply to controlling the field and non-field impacts of electric power lines. CEC staff's analysis examines the project's compliance with these requirements. Different versions of the National Electrical Code (NEC) are enforced throughout the United States because the code does not fall under federal law. Instead, it is a "uniform code," a set of guidelines that each state may adopt and apply as applicable.

Federal

Institute of Electrical and Electronics Engineers (IEEE). IEEE is the world's largest technical professional organization dedicated to advancing technology for the benefit of humanity. IEEE and its members inspire a global community through its highly cited publications, conferences, technology standards, and professional and educational activities.

American National Standards Institute (ANSI). ANSI is a private, non-profit organization that administers and coordinates the U.S. voluntary standards and conformity assessment system.

National Electrical Safety Code (NESC). NESC is a United States standard for the safe installation, operation, and maintenance of electric power and communication utility systems, including power substations, overhead power lines, and underground power and communication lines.

Code of Federal Regulations (CFR)

Title 47, CFR, Section 15.205, Federal Communications Commission (FCC). Prohibits the operation of devices that can interfere with radio-frequency communication.

Title 14, CFR Part 77 of the Code of Federal Regulations (CFR), Safe, Efficient Use and Preservation of the Navigable Airspace. It establishes standards and notification requirements for the safe and efficient use of navigable airspace.

FAA Advisory Circular No. 70/7460- 1L (2015), "Proposed Construction and/or Alteration of Objects that May Affect the Navigation Space."

FAA Advisory Circular 70/7460-1L, "Obstruction Marking and Lighting"

State

California Public Utilities Commission (CPUC)

General Order 52. Governs the construction and operation of power and communications lines to prevent or mitigate interference.

General Order-131-E, Rules for Planning and Construction of Electric Generation, Line, and Substation Facilities in California. Specifies application and notice requirements for new line construction, including electric and magnetic field ((EMF)) reduction.

General Order 95, Rules for Overhead Electric Line Construction. Governs clearance requirements to prevent hazardous shocks, grounding techniques to minimize nuisance shocks, and maintenance and inspection requirements.

General Order 128, Rules for Construction of Underground Electric Supply and Communication Systems. The order formulates uniform requirements for the construction of underground electric supply and communication lines in California.

California Code of Regulations (CCR)

Title 8, CCR, Section 2700 et seq., High Voltage Safety Orders. Specifies requirements and minimum standards for safely installing, operating, working around, and maintaining electrical installations and equipment.

Title 14, CCR, Sections 1250-1258, Fire Prevention Standards for Electric Utilities. Provides specific exemptions from electric pole and tower firebreak and conductor clearance standards, specifying when and where these standards apply.

Cumulative

No power-generating cumulative projects are listed in **Appendix A, Table A-1**, that, when combined with the project, would result in significant environmental impacts due to physical or electrical effects associated with transmission lines.

5.13.2 Environmental Impacts

TRANSMISSION LINE SAFETY AND NUISANCE To what extent does the project's transmission line physically or electrically satisfy the following criteria? (Via its electromagnetic field):	**Significant and Unavoidable Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Affect aviation safety?	☐	☒	☐	☐
b. Interfere with radio frequency communication?	☐	☐	☒	☐
c. Be a source of audible noise?	☐	☐	☒	☐
d. Be a fire hazard?	☐	☒	☐	☐
e. Be a source of hazardous shock?	☐	☒	☐	☐
f. Be a source of nuisance shock?	☐	☒	☐	☐
g. Affect public health?	☐	☒	☐	☐

Environmental checklist established by Cal. Code Regs., tit. 20, Div. 2, Ch. 5, Powerplant and Transmission Line Jurisdictional Investigations, Appendix B, Transmission System Safety and Nuisance

Project and Transmission System Components

Battery Energy Storage System, Step-Up Substation, and Generation-Intertie Line

Battery Energy Storage System

The project's primary purpose is to develop, construct, and operate a battery storage facility that enhances grid reliability while significantly reducing environmental impact. It features a 3,200 megawatt-hour (MWh) battery energy storage system (BESS). The BESS will draw electricity from the power grid to charge and store electrical energy, which can be discharged back into the grid when needed. This project offers several benefits, including reducing the reliance on natural gas power plants to balance intermittent renewable energy generation and serving as an additional capacity resource to improve grid reliability. The project's maximum generator output at the generator terminal is 408.8 MW with an auxiliary load of 2.95 MW. The project's maximum net output at the POI is 400MW.

The BESS would also include a battery management system to control battery charging and discharging. The project has been proposed with the use of a commercially available lithium-iron phosphate chemistry battery or similar technology.

The BESS would consist of a Power Conversion System (PCS). A PCS functions to convert between DC and AC and change the voltage level from the Medium Voltage (MV) collection voltage to the voltage output of the BESS enclosures. A PCS is a packaged and integrated system consisting of a bidirectional inverter, MV transformers, protection equipment, circuit breakers, harmonic filter equipment, terminals, and a connection cabling system.

The MV collection system would include multiple components that connect the PCS units to the project substation, including underground conductor circuits, switchboards, switchgear, and 34.5kV voltage transformers. The conductors for the MV collection system would be installed during construction in underground trenches.

Step-Up Substation - The substation would include three main power transformers, two active and a live spare. When the BESS facility charges, power from the electric grid would be stepped down from 500kV to 34.5kV and sent from the project substation through the MV collection system and PCS units into the battery packs within the BESS enclosures. Power from the battery packs within the BESS enclosures would be sent to the PCS units when the BESS facility is discharged. Power would be stepped up to 34.5 kV and transported to the project substation through the MV collection system before being stepped up to 500 kV at the main power transformers. A prefabricated control building would be installed within the project substation area, containing an energy management system, metering, and telecommunication equipment to communicate with PG&E facilities and support remote monitoring of project operations.

All project substation structures are grounded, as shown in the project description, Appendix 2, B. A communication system would also be installed within the same footprint. The communication system comprises fiber optic communication cabling for the Supervisory Control and Data Acquisition (SCADA), which provides communication capabilities between substations, switchyards, and O&M facilities.

Generation-Intertie Line - The proposed generation intertie line (gen-tie) line will be a 2,884-foot-long, 500 kV single-circuit line constructed with bundled 2x2300 Kcmil 61W AAC Pigweed conductors for each phase, offering an approximate ampacity of 2,700 amps. This gen-tie line consists of two segments: one measuring 1,557 feet under the applicant's control and the other measuring 1,327 feet, under PG&E's control. Additionally, two overhead shield wires would be utilized for the neutral conductor and would be mounted on the same structures as the gen-tie line.

The construction will include two 110-foot-tall dead-end transmission structures at the substation bay, three 199-foot-tall angled dead-end transmission structures, and one H-frame tangent transmission structure. A communication line will also be erected on utility poles 40 feet above ground. The applicant will install two fiber optic cables above ground on 16 utility poles from the project substation to the POCO. PG&E will construct the remaining segment, utilizing underground trenches that extend from the POCO to the Tesla substation.

The corridor for the gen-tie line will be approximately 200 feet wide. To facilitate the interconnection of the BESS facility to the electric transmission grid, PG&E would need to install a substation bay dead-end transmission structure and expand the POI's 500kV breaker-and-a-half bay with a new circuit breaker. As the project description indicates, all structures associated with the gen-tie line will be grounded. This gen-tie line will facilitate the interconnection of the project substation with the PG&E Tesla substation. (Project description section 2-2 and Table 2-3, Appendix 2B, Transmission line design)

PG&E Downstream Network Upgrades Improvements to facilitate the interconnection at the POI and extending to the Tesla substation, including a new dead-end transmission structure and expansion of the existing bay with a new circuit breaker will be implemented by PG&E following environmental review as a separate project. In addition, upgrades such as bus bars, relays, and the expansion of existing bays with new circuit breakers within the existing Vaca Dixon, Metcalf, Mesa, and Midway substations have been identified in the California Independent System Operator (California ISO) phase II cluster 13 study. The identified substation upgrades reflect changes to accommodate multiple proposed projects in the region, with a portion of the identified upgrades occurring independently of the proposed project; therefore, there is insufficient evidence to determine if the incremental improvements are linked causally to the proposed project. **Section 4.3, Transmission System Engineering**, provides additional detail about the reliability and deliverability assessment results, mitigation measures, and identified downstream transmission system upgrades

5.13.2.1 Methodology and Thresholds of Significance

The LORS and practices listed in **Table 5.13.1** have been established to maintain impacts below potential environmental significance. Thus, if CEC staff determines that the project would comply with the applicable LORS, CEC staff concludes that any transmission line-related safety and nuisance impacts would be less than significant. The nature of these individual impacts is discussed below, together with the potential for compliance with the applicable LORS.

5.13.2.2 Direct and Indirect Impacts

a. Would the project's transmission line physically or electrically (via its electromagnetic field) affect aviation safety?

Construction and Operation

Less Than Significant Impact. Based on the analysis below, the project's transmission lines' construction-related physical and electrical impacts on aviation safety would result in a less than significant impact by implementing CPUC standards.

Battery Energy Storage System, Step-Up Substation, and Generation-Intertie Line

Federal Aviation Administration (FAA) notification is required in structures over 200 feet above ground level or if the structure is less than 200 feet in height but located within the restricted airspace in the approaches to public or military airports and heliports. Moreover, for airports with runways longer than 3,200 feet, the FAA defines the confined space as an area extending 20,000 feet (3.3 nautical miles) from the runway. For airports with runways of 3,200 feet or less, the restricted airspace is defined as a space that extends 10,000 feet from the runway. For heliports, the restricted space is an area of space that extends 5,000 feet (0.8 nautical miles) from the landing site.

The CEC staff has assessed the potential for an aviation hazard related to the height of the proposed project's transmission lines. The project overhead generator structures and radio tower of the substation would reach a maximum height of 200 feet, equivalent to the 200-foot height of concern to the FAA. Therefore, the gen-tie and radio tower structures would have flashing red lights installed to enhance aviation visibility and comply with FAA standards and Advisory Circular 70/7460-1L (FAA, 2016). COC **TLSN-5** requires the applicant to construct transmission facilities per CPUC and PG&E construction standards, such as G.O. 95, 128, and 131-E. Additionally, the applicant must obtain approval from the FAA if the transmission structures exceed a height of 200 feet. This would include preparing a lighting plan for the project and obtaining FAA approval, which would specify the installation of flashing red lights on designated gen-tie structures to improve visibility for aviation. The nearest municipal airport (Stockton Metropolitan Airport) is 17.1 miles from the project's site. Therefore, CEC staff conclude that with COC **TLSN-5**, the transmission lines would not pose a collision risk to aviation or aircraft. (Project description section 2-2 and Table 2-3, Appendix 2B, Transmission line design)

b. Would the project's physical or electrical transmission line (via its electromagnetic field) interfere with radio-frequency communication?

Construction and Operation

No Impact. Based on the analysis below, the impact on radiofrequency would be less than significant as the transmission lines are not proposed near inhabited areas.

Battery Energy Storage System, Step-Up Substation, and Generation-Intertie Line

Transmission line-related radio-frequency interference is one of the indirect effects of line operation. It is produced by the physical interactions of line electric fields. More specifically, such interference is caused by radio noise generated by the interaction of electric fields with the surface of the energized conductor. The process involved is known as *corona discharge,* but is referred to as *spark gap electric discharge* when it occurs within gaps between the conductor and insulators or metal fittings. Corona from

a transmission line may result in radio and television reception interference, audible noise, light, and ozone production. When generated, such noise manifests as perceivable interference with radio or television signal reception or other radio communication.

Since the level of interference depends on factors such as line voltage, distance from the line to the receiving device, antenna orientation, signal level, line configuration, and weather conditions, maximum interference levels are not specified as design criteria for modern transmission lines. The level of any such interference usually depends on the magnitude of the electric fields involved and the distance from the line. Therefore, the potential for such impacts would be minimized by reducing the line's electric fields and by locating the line away from inhabited areas.

The project transmission lines would be built and maintained according to standard practices that minimize surface irregularities and discontinuities. Due to the unbuilt bare land around the transmission interconnection, the project transmission line would unlikely affect radio or television reception. CEC staff do not expect any corona-related radio-frequency interference or complaints, and do not recommend any related conditions of certification. (Project description section 2-2 and Table 2-3, Appendix 2B, Transmission line design)

c. Would the project's transmission line physically or electrically (via its electromagnetic field) be a source of audible noise?

Construction and Operation

Less Than Significant Impact. Based on the analysis below, the physical or electronic effects of operating the project's transmission lines would not significantly increase current background noise levels. Therefore, the impact of audible noise from the project's transmission lines would be less than significant.

Battery Energy Storage System, Step-Up Substation, and Generation-Intertie Line

Audible noise usually results from the action of the electric field at the surface of the line conductor. It could be perceived as a crackling, frying, or hissing sound or hum, especially in wet weather. Since the noise level depends on the strength of the line's electric field, the potential for perception would be assessed by estimating the field strengths during operation. The electric field increases when the line voltage increases. Research by the Electric Power Research Institute (EPRI 1982) has validated this by showing that the fair-weather audible noise from modern transmission lines is generally indistinguishable from background noise at the edge of a right-of-way of 100 feet or more. A more detailed discussion of the proximity of potentially sensitive receptors is found in **Section 5.9, Noise and Vibration**. The proposed line right-of-way would fall mainly within the project boundary and PG&E service area. Therefore, CEC staff do not expect the proposed line operation to add to the project area's current background noise levels. Also, the audible noise level depends on the online voltage, not the

conductor's power flow level. Because line voltage remains nearly constant for a transmission line during regular operation, the audible noise associated with the 500 kV lines in the area would be of the same magnitude before and after the project (Project description section 2-2 and Table 2-3, Appendix 2B, Transmission line design).

Federal or state regulations do not specifically mandate noise-reducing designs related to electric field intensity in terms of specific noise limits. Instead, such audible noise is limited through design, construction, or maintenance practices established from industry research and experience as effective without impacts on online safety, efficiency, maintainability, and reliability. Since these designs are also aimed at minimizing field strengths, CEC staff do not expect the proposed line operation to add significantly to current background noise levels in the project area. Please refer to the CEC staff's analysis in **Section 5.9, Noise and Vibration**, to assess the proposed project's noise**.** (Project description section 2-2 and Table 2-3, Appendix 2B, Transmission line design)

d. Would the project's transmission line either physically or electrically (via its electromagnetic field) be a fire hazard?

Construction and Operation

Less Than Significant with Mitigation Incorporated. Based on the analysis below, operating the project's transmission line would not be a fire hazard with incorporation of **TLSN-1** and **TLSN-2**. Therefore, impacts would be less than significant with mitigation incorporated.

Battery Energy Storage System, Step-Up Substation, and Generation-Intertie Line

The fire hazards addressed in **Table 5.13-1** are those caused by sparks from overhead line conductors or that could result from direct contact between a line and nearby trees and other combustible objects.

The applicant would comply with California Code of Regulations, Title 14, Article 4 (Section 1250 et seq.) establishing fire prevention standards for electric power generation facilities. Also, CPUC GO-95 establishes rules and guidelines for transmission line construction, including clearances from other manmade and natural structures and tree-trimming requirements to mitigate fire hazards. Therefore, the applicant's intention to ensure compliance with the clearance-related aspects of GO-95 would be an essential part of this mitigation approach. CEC staff concludes that COCs **TLSN-1** and **TLSN-2** should be implemented as mitigation.

e. Would the project's transmission line either physically or electrically (via its electromagnetic field) be a source of hazardous shock?

Construction and Operation

Less Than Significant with Mitigation Incorporated. Based on the analysis below, the project's transmission line operation would not be a source of hazardous shock, with the incorporation of COCs

Battery Energy Storage System, Step-Up Substation, and Generation-Intertie Line

Hazardous shocks could result from direct or indirect contact between an individual and the energized line, whether overhead or underground. Such shocks can cause severe physiological harm or death. Hazardous shocks remain a driving force in the design and operation of transmission and other high-voltage lines.

No design-specific federal regulations have been established to prevent hazardous shocks from overhead power lines. Safety is assured within the industry through compliance with the requirements specifying the minimum national safe operating clearances applicable in areas where the line might be accessible to the public.

Potentially hazardous shocks could result from electrical faults in the new project equipment or the PG&E high-voltage transmission system. The existing PG&E 500-kV transmission system is located within a secured area under PG&E's access control. The New PG&E switchyard is fenced to keep individuals from entering the area where they could be exposed to associated hazardous shocks. The new project's 500 kV gen- tie lines would be designed according to the applicable LORS. Implementing the GO-95-related measures against direct contact with the energized line would minimize the risk of hazardous shocks. Because the lines would be constructed in conformance with the requirements of CPUC GO-95 and California Code of Regulations (CCR), Title 8, section 2700 et seq., hazardous shocks are highly unlikely to occur because of the project's construction and operation. CEC staff's proposed COCs, **TLSN-1** and **TLSN-3,** would adequately implement the necessary mitigation. (Project description section 2-2 and Table 2-3, Appendix 2B, Transmission line design)

f. Would the project's transmission line either physically or electrically (via its electromagnetic field) be a source of nuisance shock?

Operation

Less Than Significant with Mitigation Incorporated. Based on the analysis below, the operation of the project's transmission line would not be a source of nuisance shock, with the incorporation of COCs

Battery Energy Storage System, Step-Up Substation, and Generation-Intertie

Nuisance shocks are caused by current flow at levels generally incapable of causing physiological harm. They result primarily from direct contact with metal objects

electrically charged by fields from the energized line. The line's electric and magnetic fields induce such electric charges in different ways.

No design-specific federal or state regulations limit nuisance shocks in the transmission line environment. For modern overhead high-voltage lines, such shocks are effectively minimized through grounding procedures specified in the National Electrical Safety Code (NESC) and the joint guidelines of the American National Standards Institute (ANSI) and the Institute of Electrical and Electronics Engineers (IEEE). Standard industry grounding practices would minimize the potential for nuisance shocks around the proposed line.

For the proposed transmission line, the project owner would be responsible in all cases for ensuring compliance with these grounding-related practices within the right-of-way. CEC staff proposes COC **TLSN-3** to provide grounding for the project. (Project description section 2-2 and Table 2-3, Appendix 2B, Transmission line design)

g. Would the project's transmission line either physically or electrically (via its electromagnetic field) affect public health?

Construction and Operation

Less Than Significant with Mitigation Incorporated. Based on the analysis below, operating the project's transmission line would not significantly impact public health.

Electric and magnetic fields are created whenever electricity flows; exposure to them is generally called EMF exposure. There is public concern regarding the possibility of health effects from EMF exposure. The electrical transmission interconnection and other electrical devices constructed as part of the project emit EMF when in operation. These fields are typically measured near ground level, where people encounter them. To the extent they occur, EMF fields could impact receptors on the properties adjacent to the project site.

As previously stated, the project's electrical transmission interconnection and other electrical devices would be located mainly within the project site and PG&E's transmission system. There are no receptors adjacent to the project site. Site access is restricted to station workers, incidental construction and maintenance personnel, other company personnel, regulatory inspectors, and approved guests. Because access would not be available to the public, public exposure to EMF is not expected from the project or the transmission facilities to be constructed as part of the project (Project description section 2-2 and Table 2-3, Appendix 2B, Transmission line design).

Industries and Applicant's Approach to Reducing EMF Exposures

The present focus of EMF exposure concerns the magnetic field. Unlike electric fields, magnetic fields penetrate the soil, buildings, and other materials, producing human exposures that cause health concerns. The industry seeks to reduce exposure not by setting specific exposure limits but through design guidelines that minimize exposure in each case.

In comparison to the strong magnetic fields from the more visible high-voltage power lines, CEC staff considers it essential, for perspective, to note that an individual in a home could be exposed to much stronger fields from high-voltage lines while using some common household appliances (National Institute of Environmental Health Sciences 1998). The difference between these field exposures is that the higher-level, appliance-related exposures have a short-term duration. In contrast, the exposures from power lines have a lower level but a long-term duration. Scientists have not established which exposure types would be more biologically meaningful to the individual. CEC staff notes such exposure differences only to show that high-level magnetic field exposures regularly occur in areas other than around high-voltage power lines.

As with project lines, specific field strength-reducing measures would be incorporated into the proposed line design to ensure the field strength minimization currently required by the CPUC, given the concern over EMF exposure and health.

The field reduction measures that could be applied include the following:

1. Increasing the distance between the conductors and the ground to an optimal level;
2. Reducing the spacing between the conductors to an optimal level;
3. Minimizing the current in the line; and
4. Arrange the current flow to maximize the cancellation effects from the interaction of conductor fields.

Long-term residential field exposures would not be a significant concern since the route of the proposed project's transmission line avoids residences. The field strengths of most significance would be encountered within the boundaries of the proposed project and a PG&E-controlled area. These field intensities would depend on the effectiveness of the applied field-reducing measures. The requirements in COC **TLSN-4** for field strength measurements are intended to assess the applicant's assumed field reduction efficiency. The actual contribution to the area's field exposure levels would be documented for the proposed route from the results of the field strength measurements required in **TLSN-4**, as field strength measurements are intended to assess the applicant's assumed field reduction efficiency.

5.13.2.3 Cumulative Impacts

Construction and Operation

No Impact. The cumulative impacts of Transmission Line Safety and Nuisance would be considered if other power-generating facilities were adjacent to the project. Since no other power-generating facilities are adjacent to the project and do not share the same generator tie line, there would be no adverse cumulative impact due to the project combined with other projects.

5.13.3 Project Conformance with Applicable LORS

Table 5.13-1 below details the CEC staff's determination of conformance with applicable local, state, and federal LORS, including any proposed COCs, where applicable, to ensure the project components within the CEC's Opt-In certification would conform with LORS. As shown in this table, CEC staff concludes that with the implementation of specific COCs, the proposed project would conform with all applicable LORS. The subsection below, "5.13.5 Proposed Conditions of Certification," contains the full text of the referenced COCs.

TABLE 5.13-1 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis For Determination
State	
California Public Utilities Commission (CPUC) General Order 52 (GO-52). Governs the construction and operation of power and communications lines to prevent or mitigate interference.	**Yes.** The applicant would not construct or operate transmission or communication lines to prevent or mitigate inductive interference. Applicable COC **TLSN-1, TLSN-2** and **TLSN-3**
California Public Utilities Commission (CPUC) General Order (GO-95 and GO-128), "Rules for Overhead and Underground Electric Line Construction". Governs clearance requirements to prevent hazardous shocks, grounding techniques to minimize nuisance shocks, and maintenance and inspection requirements.	**Yes.** To satisfy the GO-95 requirement, the applicant would construct Gen-tie line structures with a height of less than 120 feet. All gen-tie structures, substation components, and the switchyard would be constructed according to the GO 95 and 128 electrical grounding standards. The project's underground circuits would utilize the duct banks to minimize the EMF effects, thus satisfying the GO- 128 standards. The applicant would utilize the lighting and surge arresters in the substations and switchyard as necessary, dissipating the fault currents and voltages caused by lightning and voltage surges. Applicable COC **TLSN-1, TLSN-3** and **TLSN-5**
California Code of Regulations (CCR), Title 8, section 2700 et seq. "High Voltage Safety Orders". Specifies requirements and minimum standards for safely installing, operating, working around, and maintaining electrical installations and equipment.	**Yes.** Gen-tie structures, circuits overhead/underground, substations, and switchyard components would be constructed according to "High Voltage Safety Orders." Applicable COC **TLSN-1, TLSN-3** and **TLSN-4**
The National Electrical Safety Code (NESC) specifies grounding procedures to limit nuisance shocks and minimum conductor ground clearances.	**Yes.** All Gen-tie structures, substation components, and the switchyard would be constructed according to the NESC standards and GO 95 and 128 grounding standards. Overhead and underground grounding circuits will be designed with proper conductor sizes to dissipate the fault current. The applicant will select proper conductor sizes to satisfy the NESC standards.

TABLE 5.13-1 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
	All the substation or switchyard components would be grounded using the underground grounding grid. The applicant will assess the soil resistivity test for the project's substation, switchyard sites, and transmission line path. Applicable COC **TLSN-1** and **TLSN-4**
GO-131-D, CPUC" Rules for Planning and Construction of Electric Generation, Line, and Substation Facilities in California." Specifies application and notice requirements for new line construction, including EMF reduction.	**Yes.** The project would be built with proper transmission line clearance with the ground and satisfy GO-95 Transmission paths Right-of-way requirements. Underground circuits would utilize duct banks to minimize the EMF and the de-rated ampacity of conductors. Applicable COC **TLSN-1, TLSN-3** and **TLSN-4**
CPUC Decision D.93-11-013. Specifies CPUC requirements for reducing electric and magnetic fields.	**Yes.** The CPUC required the utilities to undertake no-cost EMF mitigation measures and implement low-cost mitigation measures to the extent approved as part of a project's certification process. "Low-cost" was defined as being within 4 percent of the total project cost, but the Commission specified that this 4 percent benchmark is not an absolute cap. Applicable COC **TLSN-4**
CPUC Decision D.06-01-042. Re-affirms CPUC EMF Policy in D.93-11-013.	**Yes.** Re-affirms the above requirement. Applicable COC **TLSN-4**
California Code of Regulations, Title 14sections 1250-1258, "Fire Prevention Standards for Electric Utilities." Provides specific exemptions from electric pole and tower firebreak and conductor clearance standards and specifies when and where standards apply.	**Yes.** The applicant should refer to the Fire Prevention Standards under 1250-1258. (design, construction, and operation phases). Applicable COC **TLSN-1, TLSN-2** and **TLSN-3**
Standards	
Institute of Electrical and Electronics Engineers (IEEE) 1119, "IEEE Guide for Fence Safety Clearances in Electric-Supply Stations". Specifies the guidelines for grounding-related practices within the ROW and substations.	**Yes.** A fence around the substation or switchyard and proper Transmission line clearance would facilitate a safety clearance zone. All the substation, switchyard, and fence components would be grounded using the underground grounding grid. Maintain the proper ROW of the transmission paths and substations to minimize the flashover and EMF effects. Applicable COC **TLSN-1** and **TLSN-3**
American National Standards Institute (ANSI/IEEE) 644-1944 Standard Procedures for Measuring Power Frequency Electric and Magnetic Fields from AC Power Lines. Specifies standard	**Yes.** The applicant would conduct the following tests.

TABLE 5.13-1 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
procedures for measuring electric power frequency and magnetic fields from an operating electric line.	The first test is a Corona performance test. It uses visible techniques to determine the onset of a positive corona. The second test is radio interference voltage (RIV). To minimize the flashover and EMF effects, the RIV voltage must be measured according to ANSI C63.2 or CISPR 16-1-1 and CISPR TR 18-2. Applicable COC **TLSN-4**

5.13.4 Conclusions and Recommendations

As discussed above, with the implementation of COCs, the project would have a less than significant impact related to transmission line safety and nuisance and would conform with applicable LORS for project components within the CEC's Opt-In Certification. CEC staff recommends adopting the COCs as detailed in subsection "5.13.5 Proposed Conditions of Certification" below. The COCs below are enforceable as part of the CEC's certificate for the portions of the project constituting the site and related facilities.

5.13.5 Proposed Conditions of Certification

TLSN-1 The project owner shall construct the proposed 230-kV transmission lines according to the requirements of California PUC's GO- 95, GO-52, GO-131-E, California Code of Regulations, Title 8, sections 2700 through 2974, and Group 2, High Voltage Electrical Safety Orders, , and PG&E's EMF reduction guidelines**.**

Verification: At least 30 days before starting construction of the transmission lines or related structures and facilities, the project owner shall submit to the compliance project manager (CPM) a letter signed by a California-registered electrical engineer affirming that the lines will be constructed according to the requirements stated in the condition.

TLSN-2 The project owner shall ensure that the route of the proposed transmission lines is kept free of combustible material, as required under the provisions of GO-95 and of the California Code of Regulations, Title 14, sections 1250-1258.

Verification: During the first five years of plant operation, the project owner shall provide a summary of inspection results and any fire prevention activities carried out along the proposed route and provide such summaries in the Annual Compliance Report on transmission line safety and nuisance-related requirements.

TLSN-3 The project owner shall ensure that all permanent metallic objects within the proposed route are grounded according to industry standards.

Verification: At least 30 days before the lines are energized, the project owner shall transmit to the CPM a letter confirming compliance with this condition.

TLSN-4 The project owner shall measure the line EMFs' maximum strengths at the ROW's edge to validate the applicant's estimates for these fields. These measurements shall be made: (a) according to the standard procedures of the American National Standards Institute/Institute of Electrical and Electronics Engineers (ANSI/IEEE); and (b) before and after energizing. The measurements shall be completed no later than six months after the start of operations.

Verification: The project owner shall file copies of the pre- and post-energizing measurements with the CPM within 60 days after the measurements are completed.

TLSN-5 Gen-Tie line and other transmission-related structures: Transmission facilities are constructed to satisfy CPUC and PG&E construction standards, such as GO-95, GO-128, and GO-131-E.

Verification: At least 30 days before the construction of structures above 200 feet tall, the project owner shall transmit to the CPM a letter confirming compliance with this condition.

5.13.6 Recommended Mitigation Measures

MM GEN-1 PG&E Transmission facilities including PG&E's gen-tie line segment from the POCO/POI to the fence line at the Tesla substation are constructed to satisfy CPUC and PG&E construction standards such as GO-95, GO-128 and GO-131-E. Additionally, PG&E should get approval from the FAA if the transmission structures reach a height of 200 feet or above.

Mitigation: At least 30 days before constructing structures above 200 feet tall, select generator tie line information, such as conductor sizes. Conductor ratings and current carrying capacity information shall be transmitted to PG&E's CBO, along with a letter confirming compliance with this condition.

5.13.7 References

CPUC 2020 – California Public Utilities Commission. General Order 95 (GO-95), Rules for Overhead Electric Line Construction, revised January 15, 2020, ongoing. https://files.cpuc.ca.gov/gopher-data/go/GO-95.pdf

CPUC 2006 – California Public Utilities Commission. General Order 128 (GO-128), Rules for Construction of Underground Electric Supply and Communications Systems, revised January 2006,
ongoing. https://docs.cpuc.ca.gov/published/GENERAL_ORDER/52591.htm

EPRI 1982 – Electric Power Research Institute 1982. Transmission Line Reference Book: 345 kV and above. Accessed online at:

https://www.academia.edu/41079824/EPRI_Transmission_Line_Reference_Book_345_kV_and_above

NERC 2024 – North American Electric Reliability Council. 2024 Reliability Standards for the Bulk Electric Systems of North America, Updated January 1, 2024, and ongoing

NIEHS 1998 – National Institute of Environmental Health Sciences (NIEHS). 1998. An Assessment of the Health Effects from Exposure to Power-Line Frequency Electric and Magnetic Fields, Working Group Report. Accessed online at: http://www.niehs.nih.gov/health/assets/docs_a_e/emf1.pdf

NIEHS 2002 – National Institute of Environmental Health Sciences (NIEHS). 2002. Electric and Magnetic Fields Associated with the Use of Electric Power. https://www.niehs.nih.gov/sites/default/files/health/materials/electric_and_magnetic_fields_associated_with_the_use_of_electric_power_questions_and_answers_english_508.pdf

WECC 2014 – Western Electricity Coordinating Council. WECC Regional Reliability Standards, updated on December 10, 2014, and is ongoing.

WHO 2002 – World Health Organization (WHO). 2002, Establishing a Dialogue on Risks from Electromagnetic Fields. Accessed online at: Radiation: Electromagnetic fields

WHO 2024 – World Health Organization (WHO). 2024 Electromagnetic fields (EMF). Accessed online at: https://www.who.int/news-room/questions-and-answers/item/radiation-electromagnetic-fields

5.14 Transportation

5.14.1 Environmental Setting

This section describes the affected environmental and regulatory settings for transportation. This section also describes potential transportation impacts to the environment that could result from implementation of the project and mitigation measures that would reduce these impacts, if applicable.

Existing Conditions

The proposed project would construct, operate and maintain, and decommission a battery energy storage system (BESS) facility, including a substation, three operations and maintenance buildings, and 500-kilovolt (kV) overhead generation intertie transmission (gen-tie) line. The project would connect to the Tesla Substation owned and operated by Pacific Gas and Electric Company (PG&E), approximately 570 feet east of the project's eastern boundary. Improvements to the PG&E Tesla Substation would be required as part of the project. See **Section 2, Introduction**, for a description of the project components within the California Energy Commission's (CEC's) Opt-In certification and project components outside the CEC's Opt-In certification.

The 70-acre project site is at 17257 Patterson Pass Road within unincorporated eastern Alameda County southwest of Interstate 580 (I-580) and I-205. The project site boundaries are illustrated in **Figure 5.14-1**. Primary site access would be provided via a new private driveway on the north side of the site, connecting to Patterson Pass Road. A secondary emergency vehicle access-only driveway would be provided on the site's southern side on Patterson Pass Road.

Existing Local and Regional Roadway Network

Regional roadway access to the site would be provided from I-580 to Patterson Pass Road–County Road 2063 to the east of the project. Characteristics of the primary roadways within the study area are described below. Alameda County's Roadway Classification diagram is presented as **Figure 5.14-2**, and major roadways near the project site are described in the following paragraphs.

Interstate 580. I-580 is an east-west, divided, six- to eight-lane freeway that provides regional access to the project site. I-580 is an auxiliary highway of I-80 that begins in San Francisco and extends east to Teaneck, New Jersey, and serves as a critical connection for many other regional roadways, freeways, and highways. Caltrans classifies I-580 as a designated truck route, except for a portion of the route passing through Oakland. The nearest interchange to the site is provided at I-580 and Patterson Pass Road, approximately 1.5 miles east of the site. The posted speed limit is 65 miles per hour (MPH) in the site's vicinity.

Figure 5.14-1 Project Location and Transportation Study Area

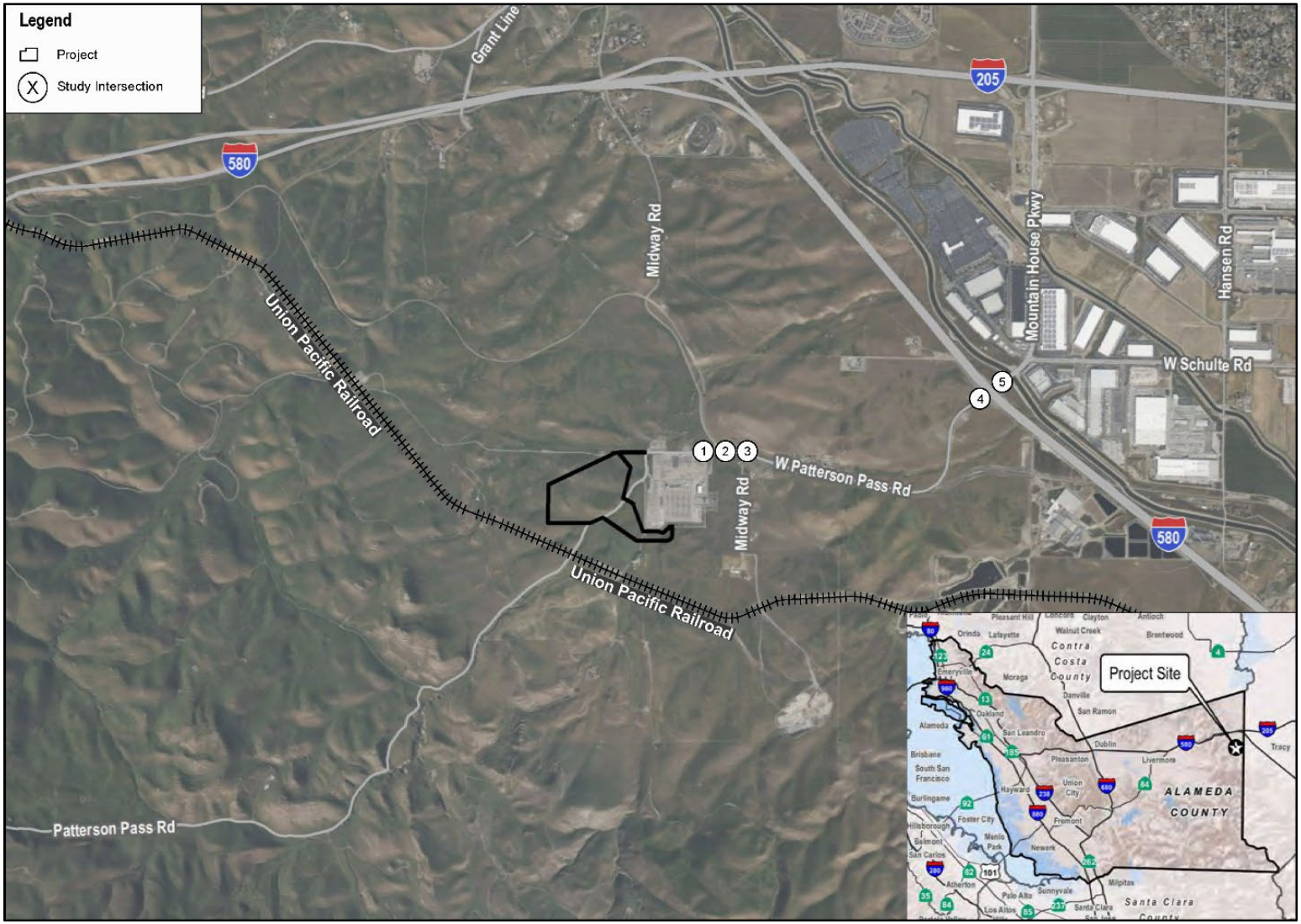
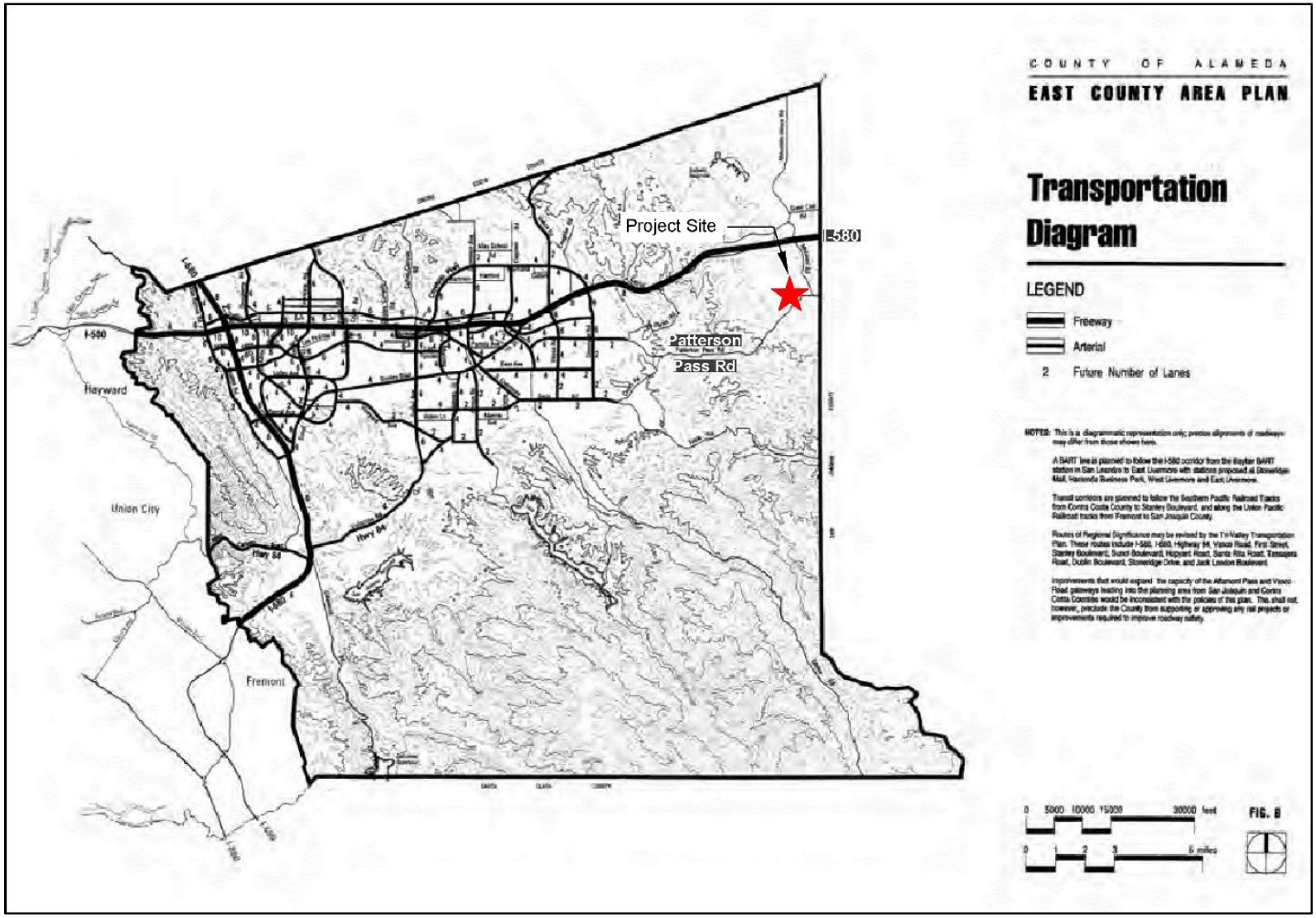


Figure 5.14-2 County Roadway Classifications



Patterson Pass Road–County Road 2063. This roadway is a two-lane, undivided, east-west roadway that provides local access to the site via the interchange with I-580 east of the project site and would be the main roadway to access the project. Patterson Pass Road connects the site to the City of Livermore in the west at its intersection with Vasco Way. Heavy one-directional traffic flows were observed on this roadway due to its use as a commuter corridor, with less than one percent of non-commute direction traffic occurring during either peak hour. South of the site's northern driveway, Patterson Pass Road does not meet Alameda County roadway standards, and is characterized by narrow lanes, no centerline striping, and lack of shoulders and/or paved shoulders. There are no pedestrian or bicycle facilities present. The posted speed limit ranges between 40 and 55 MPH in the vicinity of the project site, with 20 MPH posted warning signs at the sharp curve along Patterson Pass Road approaching the northern project driveway.

Midway Road. Midway Road is a two-lane, north-south, undivided roadway which provides a local connection to the site via its intersection with Patterson Pass Road. There are no pedestrian or bicycle facilities present. The posted speed limit is 40 MPH.

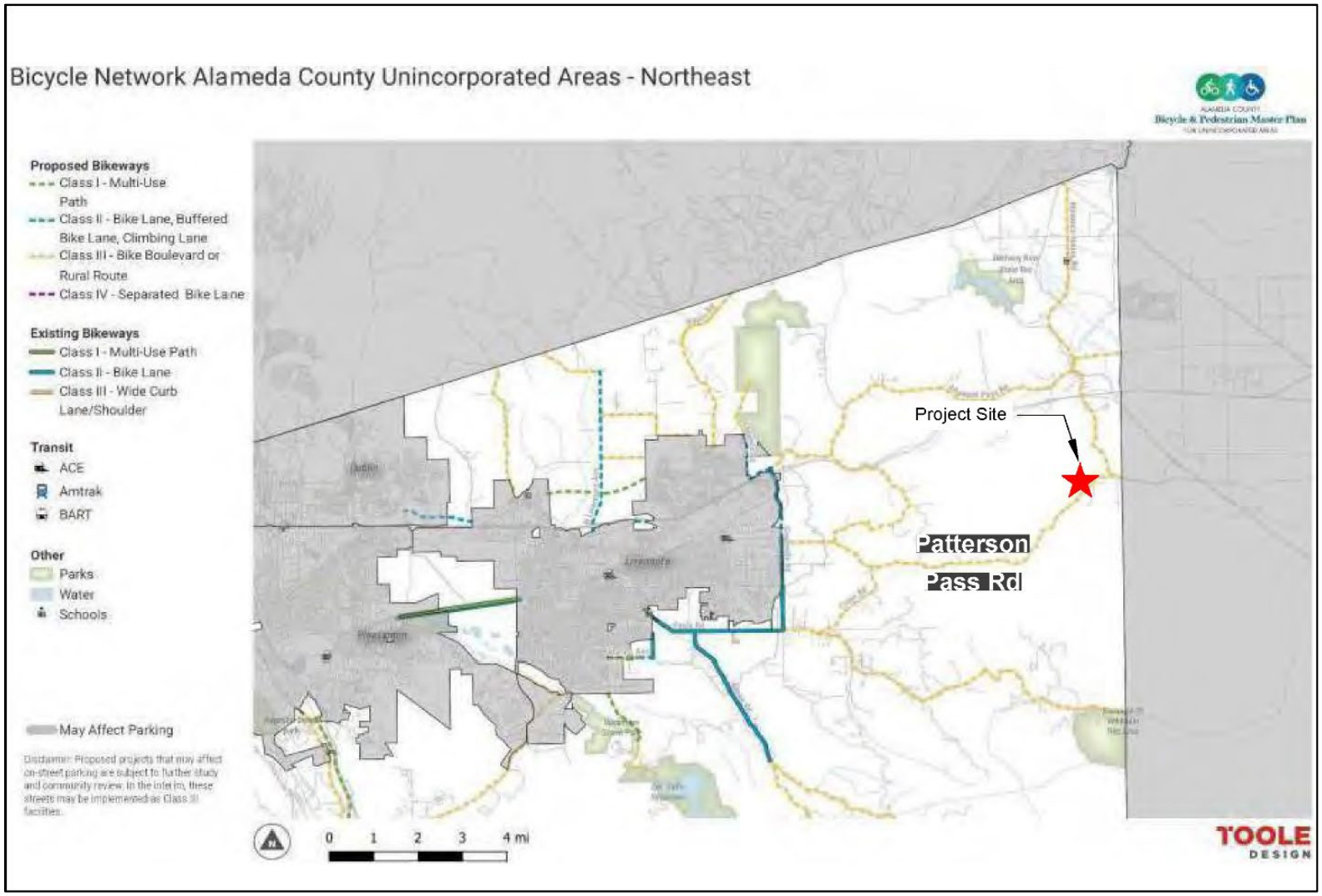
Existing Bicycle, Pedestrian, and Transit Facilities

The project site is surrounded by undeveloped rural land: no pedestrian or bicycle infrastructure is provided. Based on a review of the County's Bicycle and Pedestrian Master Plan (Alameda County 2019), a Class III Rural bike route (signed route only) is proposed along Patterson Pass Road in the project study area. **Figure 5.14-3** presents the proposed bicycle route.

Livermore Amador Valley Transit Authority. The Livermore Amador Valley Transit Authority provides access to various public transportation choices for those who live or work in and visit the Tri-Valley area. These include bus connections to Bay Area Rapid Transit (BART), Altamont Commuter Express (ACE), and Central Contra Costa County Transportation Authority (County Connection). The closest bus stop to the project site is at the Vasco Road Transit Center, approximately 10 miles west of the project site. There are no bus routes or stops within a two-mile radius of the project site.

Altamont Commuter Express. ACE provides heavy-rail train service for communities in Eastern Alameda County and Western San Joaquin County. ACE operates one route, connecting cities between Stockton and San Jose. The route operates on Mondays through Fridays; westbound in the mornings, and eastbound in the evenings. In the westbound direction, there are four trains beginning at 4:10 AM with approximately 70 -minute headways. In the eastbound direction, there are four trains beginning at 3:30 PM with approximately 60-minute headways. The closest ACE station to the project site is the Tracy ACE Station, approximately nine miles east of the project site.

Figure 5.14-3 Unincorporated Alameda County Bike Network



Union Pacific Railroad. An east-west Union Pacific rail line is approximately 900 feet south of the project site, crossing over Patterson Pass Road. A railroad bridge carries the rail line over Patterson Pass Road, however, allowing rail traffic to flow without conflicting with vehicular traffic. There are no at-grade rail crossings near the site.

Union Pacific freight operations in California handle an array of commodities, including import-export automobiles and premium intermodal cargo at the Intermodal Container Transfer Facility. Other common freight hauled throughout the Golden State includes chemicals, manufactured goods, fruits, vegetables, and canned goods (Union Pafic Railroad 2024).

Airports

Livermore Municipal Airport. Livermore Municipal Airport is approximately 19 miles west of the project site. The airport is a General Aviation Reliever Airport which serves private, business, and corporate tenants and customers. The airport primarily serves the Tri-Valley region with a population of over 300,000 residents. Most of the Airport's 460 tenants are Livermore and Pleasanton residents (City of Livermore 2023).

Tracy Municipal Airport. Tracy Municipal Airport is approximately 10 miles east of the project site. The airport is a General Aviation Airport which serves private, business, and corporate tenants and customers. The airport primarily serves the Central Valley and the I-5 Corridor (City of Tracy 2023).

Regulatory

This subsection summarizes the laws, ordinances, regulations, and standards (LORS) related to the transportation analysis of the project. Conflicts with these LORS could result in significant environmental effects.

Federal

Code of Federal Regulations

49 CFR Part 172. This regulation primarily deals with the labeling, marking, and placarding of hazardous materials for transportation. It establishes standards for how hazardous materials must be labeled and marked on packages, containers, and vehicles to effectively communicate their contents and associated risks.

49 CFR Part 173. This regulation focuses on the general requirements for the shipping of hazardous materials. It includes regulations for packaging, including specifications for various types of containers, as well as rules for classifying, describing, and documenting hazardous materials. Section 173 also covers the conditions and exceptions under which certain hazardous materials can be transported and provides guidelines for emergency response information and training.

49 CFR Part 179. Part 179 pertains to the transportation of hazardous materials in the United States. This section outlines design, construction, and testing standards for portable tanks, as well as operational and maintenance procedures to ensure the safe transport of hazardous materials.

49 CFR Part 397.9 (Hazardous Materials Transportation Act of 1974). The Hazardous Materials Transportation Act of 1974 regulates the transportation of hazardous materials in commerce. This act establishes a framework for the safe and secure handling, labeling, packaging, and transportation of hazardous materials. It empowers the United States Department of Transportation to develop and enforce regulations to minimize the risks associated with transporting hazardous materials on highways, railways, waterways, and in the air. The act also sets penalties for violations and provides funding for research, training, and emergency response planning related to hazardous materials transportation.

49 CFR Parts 350-399 (Federal Motor Carrier Safety Regulations). The Federal Motor Carrier Safety Regulations oversee and regulate commercial motor carriers, drivers, and the safe operation of commercial motor vehicles. Parts 350-399 address various aspects of motor carrier safety, including driver qualifications, hours of service, vehicle inspections and maintenance, and commercial driver's license requirements. Additionally, these parts also regulate hazardous materials transportation, including the classification, packaging, and labeling of hazardous materials, as well as safety standards for transporting these materials.

14 CFR Part 77.9 [b][1]. This regulation requires Federal Aviation Administration (FAA) notification for construction or alterations within 20,000 feet of an airport with a runway more than 3,200 feet in length if the height of the construction or alteration exceeds a slope of 100 to 1 extending outward and upward from the nearest point of the nearest runway of the airport (CFR 2020a). The threshold for the FAA notification 100 to 1 surface exceedance height is approximately 7 feet at the project site. If a project's height, including any temporary equipment (such as cranes used during construction) or any ancillary structures (such as transmission poles), exceeds the 100 to 1 surface, the project applicant must submit a copy of FAA Form 7460-1, Notice of Proposed Construction or Alteration, to the FAA. In addition, within five days after construction reaches its greatest height, the project applicant must submit a copy of FAA Form 7460-2, Notice of Actual Construction or Alteration, to the FAA.

State

California Environmental Quality Act (CEQA). CEQA requires state and local government agencies to inform decision-makers and the public about the potential environmental impacts of the project and to reduce environmental impacts to the extent feasible. Appendix G of the CEQA Guidelines includes recommended criteria for evaluating potential impacts related to transportation.

California Vehicle Code (CVC). The California Vehicle Code consists of a comprehensive set of laws and regulations that govern the operation and use of vehicles on the roadways within the state of California. Specifically, the California Vehicle Code addresses traffic regulations, driver's licensing, vehicle registration, vehicle equipment, safety regulations, parking and towing, commercial vehicle standards, environmental regulations, and penalties and enforcement.

California Streets and Highways Code. The California Streets and Highways Code specifically pertains to the planning, construction, maintenance, and regulation of streets and highways within the state of California. Specifically, the California Streets and Highways Code includes highway designation, highway construction, highway maintenance, eminent domain, public transportation, bicycle and pedestrian infrastructure, emergency services, and traffic control.

California Senate Bill 743. Codified in Public Resources Code Section 21099, SB 743 required changes to the CEQA Guidelines (Cal. Code Regs., Title 14, Div. 6, Ch. 3, § 15000 et seq.) regarding the analysis of transportation impacts. SB 743 required the Governor's Office of Planning and Research (OPR) to amend the CEQA Guidelines to provide an alternative to level of service (LOS) as the metric for evaluating transportation/traffic impacts. Under the new transportation guidelines, LOS (or vehicle delay) is no longer considered an environmental impact under CEQA. Amendments to the CEQA Guidelines required under SB 743 were approved on December 28, 2018, and the new Section 15064.3 identifies VMT as the most appropriate measure of transportation impacts under CEQA, effective July 1, 2020. Related legislation such as SB 32 (2016) requires California to reduce greenhouse gas emissions 40 percent below 1990 levels by 2030. The California Air Resources Board has determined it is not possible to achieve this goal without reducing VMT growth; specifically, California needs to reduce per capita VMT across all economic sectors. SB 743 is primarily focused on passenger-cars and the reduction in per capita VMT as it relates to individual trips.

The OPR Technical Advisory (OPR 2018) provides guidance and tools to properly carry out SB 743 principles and evaluate transportation impacts under CEQA. The County of Alameda has not yet adopted transportation guidelines for evaluating potential project-related impacts to VMT. Therefore, in the interim, the OPR's Technical Advisory has been used to evaluate the proposed project.

Caltrans. As the owner and operator of the State Highway System, Caltrans implements established state planning priorities in all functional plans, programs, and activities. Caltrans is responsible for coordinating and consulting with local jurisdictions when proposed local land use planning and development may impact state highway facilities. To comply with SB 743 implementation, the Caltrans Transportation Impact Study Guide (Caltrans 2020a), replaced the Guide for the Preparation of Traffic Impact Studies (Caltrans 2002). Per the 2020 Transportation Impact Study Guide, Caltrans' primary review focus is VMT, replacing LOS as the metric used in CEQA transportation analyses. Caltrans recommends use of OPR's recommended thresholds and guidance on methods of VMT assessment found in OPR's Technical Advisory (OPR 2018). In addition

to VMT, Caltrans has developed an interim Local Development and Intergovernmental Review Safety Review Practitioners Guidance (Caltrans 2020b) which may request a targeted operational and safety analysis to address a specific geometric or operational issue related to the State Highway System and connections with the State Highway System (Caltrans 2020b).

Manual on Uniform Traffic Control Devices (MUTCD). The MUTCD provides standards and guidelines for the design and usage of traffic control devices, such as signs, signals, and pavement markings, to ensure uniformity and consistency on roads and highways across the United States. It regulates construction-related signage and striping, offering guidelines for temporary traffic control in work zones. It ensures consistent and safe practices on roads during construction activities.

Local

Alameda County Transportation Commission. The Alameda County Transportation Commission (Alameda CTC) is a joint powers authority that plans, funds, and delivers transportation programs and projects that expand access and improve mobility to foster a vibrant and livable Alameda County. Alameda CTC was formed in 2010 from the merger of the Alameda County Transportation Improvement Authority and the Alameda County Congestion Management Agency.

As required by state law, Alameda CTC updates its Congestion Management Program (CMP) every two years by monitoring the operational performance of the designated County CMP road network. The current CMP was adopted in October 2023 (Alameda County Transportation Commission 2023). The Alameda CTC is currently in the process of transitioning to VMT as the primary metric for traffic impacts. Until this transition is complete and resolved through amended CMP legislation, the Alameda CMP LOS E minimum standard for monitored roads and freeways in the CMP network remains the agency's transportation metric, and as such is applied to this study. I-580 is part of the CMP Road System.

The Alameda CTC CMP standards and travel demand measures are focused on traffic impacts associated with future development, and as such do not apply to construction activities associated with this project, in which there are temporary, short-term traffic increases that are eliminated once construction is completed.

Alameda County East County Area Plan. The East County Area Plan is a subplan of the Alameda County General Plan and contains goals and policies to maintain an efficient circulation network in the eastern portion of Alameda County. The East County (formerly called the Livermore-Amador Valley Planning Unit) encompasses 418 square miles of eastern Alameda County and includes the cities of Dublin, Livermore, Pleasanton, and a portion of Hayward as well as surrounding unincorporated areas. The planning area extends from the Pleasanton/Dublin ridgeline on the west to the San Joaquin County line on the east and from the Contra Costa County line on the north to the Santa Clara County line on the south. The East County is part of the Tri-Valley

subregion which includes incorporated and unincorporated areas of Contra Costa County including Danville, San Ramon, Blackhawk/Alamo, and Dougherty and Tassajara valleys.

The following goals and policies applicable to the project are summarized below.

Goal: To create and maintain a balanced, multimodal transportation system that provides for the efficient and safe movement of people, goods, and services.

- *Policy 180:* The County shall require that all new development in areas that are unincorporated as of the adoption of the East County Area Plan shall contribute their fair share toward the costs of transportation improvements shown on the Transportation Diagram, subject to confirmation in subsequent traffic studies, as a condition of Project approval.

Goal: To reduce East County traffic congestion.

- *Policy 183:* The County shall seek to minimize traffic congestion levels throughout the East County street and highway system.
- *Policy 184:* The County shall seek to minimize the total number of Average Daily Traffic (ADT) trips throughout East County.
- *Policy 185:* The County shall seek to minimize peak hour trips by exploring new methods that would discourage peak hour commuting and single vehicle occupancy trips.
- *Policy 190:* The County shall require new non-residential developments in unincorporated areas to incorporate Transportation Demand Management (TDM) measures and shall require new residential developments to include site plan features that reduce traffic trips such as mixed-use development and transit-oriented development Projects.

Goal: To complete County-planned street and highway improvements which are attractively designed to integrate pedestrian and vehicle use.

- *Policy 193:* The County shall ensure that new development pays for roadway improvements necessary to mitigate the exceedance of traffic Level of Service standards (as described below) caused directly by the development. The County shall further ensure that new development is phased to coincide with roadway improvements so that (1) traffic volumes on intercity arterials significantly affected by the Project do not exceed Level of Service D on major arterial segments within unincorporated areas, and (2) that traffic volumes on Congestion Management Program (CMP) designated roadways (e.g., Interstate Highways 580 and 680 and State Highway 84) significantly affected by the Project do not exceed Level of Service E within unincorporated areas. If LOS E is exceeded, Deficiency Plans for affected roadways shall be prepared in conjunction with the Congestion Management Agency. LOS shall be determined according to Congestion Management Agency adopted methodology. The County shall encourage cities to

ensure that these Levels of Service standards are also met within unincorporated areas.

- *Policy 194:* The County shall require traffic impact studies for all detailed development plans (e.g., specific plans) and major Projects (see definition in Table 1) to determine compliance with Level of Service standards.

Goal: To increase investment in and use of transit.

- *Policy 207:* The County shall require all new development to pay its fair share of the costs of meeting East County transit needs.

Goal: To include a comprehensive network of bicycle and pedestrian paths in the local and subregional transportation network.

- *Policy 213:* The County shall support construction of multiple use trails (e.g., pedestrian and bicycle uses) along the "Iron Horse" (see definition in Table 1) and the Altamont Pass Southern Pacific rights-of-way only with assurances that public transit use will also be provided within the corridor.
- *Policy 214:* The County shall require that circulation and site plans for individual developments minimize barriers to access by pedestrians, the disabled, and bicycles (e.g., collectors or arterials separating schools or parks from residential neighborhoods)

Goal: To ensure the efficient, safe, and economically beneficial operation of the Livermore Municipal Airport.

- *Policy 216:* The County shall recognize the Livermore Municipal Airport as an important regional facility and shall promote its continued use as a general aviation facility for local-serving and business use.
- *Policy 217:* The County shall require that, where conflicts between a new use and the airport that could interfere with the airport's operations are anticipated, the burden of mitigating the conflicts will be the responsibility of the new use.

Alameda County Bicycle and Pedestrian Master Plan Bike Plan. The County's Bicycle and Pedestrian Master Plan (BPMP) (Alameda County 2019) builds on the vision and projects from the 2012 Alameda County Bicycle and Pedestrian Master Plan for Unincorporated Areas. The 2019 BPMP updates goals, an implementable bicycle network, pedestrian network recommendations to improve safety and connectivity, and support programs for both the populated communities of West County and the rural communities of East County. Opportunities for walking and bicycling vary widely depending on the area of the county and the area's development pattern. This BPMP provides contextual recommendations to serve the topography and land uses of these areas. The following goals and policies applicable to the project are summarized below.

Goal 1: Connectivity. Develop and maintain a connected and continuous bicycle and pedestrian network.

- *Policy 1.1.* Create and maintain safe, convenient, and effective bicycle and pedestrian networks that maximize bicycle use and walking for commuting, recreation, and local transportation.
- *Policy 1.2.* Eliminate gaps in the existing network and improve bicycle and pedestrian connections to transit, schools, parks/trails, retail and employment centers, community/senior centers, and libraries.
- *Policy 1.4.* Construct and/or promote shared use paths and trails in rural and open space areas.

Goal 2: Access. Provide access for all users.

- *Policy 2.1.* Create and maintain a safe, comfortable, and continuous pedestrian network that provides access to all users, particularly disabled users, seniors, and children.

Goal 4: Comfort. Consider the whole walking and biking experience through the provision of support amenities.

- *Policy 4.1.* Promote the installation of secure bicycle parking at public buildings, retail areas, employment centers, transit centers, recreational facilities, and other bicycle destinations.
- *Policy 4.2.* Provide lighting where needed, including on bicycle facilities, and pedestrian walkways, trails, etc.

Goal 6: Supportive Land Uses. Ensure that land uses support and promote walking and biking.

- *Policy 6.1.* Require that development projects include bicycle and pedestrian considerations for safety, access/circulation, and amenities such as bicycle parking/lockers and showers, as appropriate.
- *Policy 6.2.* Through traffic impact studies/analyses of proposed street changes, address impacts on bicycling and pedestrian transportation, specifically: Consistency with General Plan and the Bicycle and Pedestrian Master Plan policies; impact on the existing and future Bicycle and Pedestrian Master Plan Bikeway System; permanent travel pattern or access changes including the degree to which bicycle and pedestrian travel patterns are altered or restricted due to any change to the roadway network; and conformity to accepted bicycle and pedestrian facility design standards and guidelines.

Cumulative

Cumulative projects are identified as past projects, current projects, or reasonably foreseeable future projects that, when viewed in connection with the proposed project, cause its effect(s) on traffic and transportation to be potentially significant. A master list of cumulative projects is provided in **Appendix A, Table A-1**. An analysis of cumulative traffic conditions anticipated to occur in the year 2027 when peak project

construction traffic is expected to occur was performed. That analysis reflects forecast traffic volumes with the development of the projects summarized in Table A-1 (those expected to be complete by 2027). The cumulative analysis reviews the geographic area that project construction traffic would utilize, which is primarily Patterson Pass Road and its interchange with I-580.

Additionally, a review of current California Department of Transportation (Caltrans) District 10 projects indicated that extensive improvements are planned under the I-580/International Parkway/Patterson Pass Interchange project, which modifies the existing compact diamond interchange into a Diverging Diamond Interchange (DDI). The current schedule indicates an interchange project completion date of August 2026. Since the proposed project is expected to start construction in 2027, the new DDI interchange would be in place prior to construction, and the interchange deficiencies noted above would be improved.

5.14.2 Environmental Impacts

TRANSPORTATION Would the Project:	**Significant and Unavoidable Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☒	☐	☐
b. Conflict or be inconsistent with CEQA Guidelines, section 15064.3, subdivision (b)?	☐	☐	☒	☐
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☒	☐	☐
d. Result in inadequate emergency access?	☐	☐	☒	☐

Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, Transportation.

5.14.2.1 Methodology and Thresholds of Significance

Methodology

In addition to the environmental checklist, CEC staff used the following methodology and thresholds of significance to evaluate the project.

The proposed project's potential impacts to transportation have been evaluated using a variety of resources, including the transportation section of the application (Dudek 2024c) and the Revised Traffic Analysis of the application that was prepared by Dudek

(Dudek 2024d). The transportation analysis includes an assessment of the project's trip generation during both the construction and (permanent) operations and maintenance (O&M) phases; a level of service analysis; a vehicle miles traveled analysis; and project access evaluation.

The assessment is based on the East County Area Plan and applicable CEQA guidelines, including adherence to Senate Bill 743 and guidelines from the Governor's Office of Planning and Research. The LOS analysis includes five study intersections and two roadway segments where the project could cause a traffic impact due to construction activities. The LOS analysis evaluates existing (Year 2024) and cumulative (Year 2027) conditions with and without the project traffic. Daily, AM, and PM peak hour turning movement counts were collected at the study intersections and roadways on February 8, 2024. Traffic counts were adjusted to passenger car equivalents (PCE) to reflect truck traffic according to the following industry standards.

An evaluation of VMT related to project construction and operation was conducted based on the CEQA Guidelines Section 15064.3(b).

Level of Service Analysis. The operations of roadway facilities are described with the term "level of service" (LOS). LOS is a qualitative description of traffic flow from a vehicle driver's perspective based on factors such as speed, travel time, delay, and freedom to maneuver. Six levels of service are defined, ranging from LOS A (free-flow conditions) to LOS F (over-capacity conditions). LOS E corresponds to operations "at capacity." When volumes exceed capacity, stop-and-go conditions result, and the results are designated as LOS F. The *Highway Capacity Manual*, 7th Edition (HCM 7) methodology (Transportation Research Board 2022) was used to analyze the operation of signalized and unsignalized study intersections.

Vehicles Miles Traveled Analysis. Vehicle miles of travel is a measure used to describe automobile use on a daily basis. VMT is the product of the total number of vehicles traveling and the number of miles traveled per vehicle. In December 2018, the Governor's Office of Planning and Research finalized new CEQA guidelines (CEQA Guidelines section 15064.3) that identify VMT as the most appropriate criterion to evaluate a project's transportation impacts. The implementation of Senate Bill 743 eliminated the use of criteria such as auto delay, level of service, and similar measures of traffic congestion vehicle capacity as the basis for determining significant impacts as part of CEQA compliance. The SB 743 VMT criteria promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses. In compliance with SB 743 mandates, VMT was employed to assess the impact of the project on the transportation network.

The CEQA guidelines are not specific on whether to include or exclude construction traffic and the issue has not been specifically cited in any legal opinions. There is only one reference to "construction" in the State's April 2018 VMT Guidelines: "GHGs can be further reduced at the Project level through implementing energy-efficient construction and travel demand management approaches." This suggests that construction-related

VMT is of interest to the State. Given that the traffic generation from the project would be mostly during the construction phase, then it seems relevant to examine the VMT during construction.

Section 15064.3, subdivision (a), states, "For the purposes of this section, 'vehicle miles traveled' refers to the amount and distance of automobile travel attributable to a project. Here, the term 'automobile' refers to on-road passenger vehicles, specifically cars and light trucks." Based upon the above considerations, the analysis in Section 5.14.2.2 evaluates the worker, not trucks, trips to/from the site during the construction phase.

Thresholds of Significance

Alameda County East County Area Plan. The East County Area Plan is a subplan of the Alameda County General Plan and contains goals and policies to maintain an efficient circulation network in the eastern portion of Alameda County. The following goals and policies applicable to the project include the following:

Goal: To create and maintain a balanced, multimodal transportation system that provides for the efficient and safe movement of people, goods, and services.

- *Policy 180:* The County shall require that all new development in areas that are unincorporated as of the adoption of the East County Area Plan shall contribute their fair share toward the costs of transportation improvements shown on the Transportation Diagram, subject to confirmation in subsequent traffic studies, as a condition of Project approval.

Goal: To reduce East County traffic congestion.

- *Policy 183:* The County shall seek to minimize traffic congestion levels throughout the East County street and highway system.
- *Policy 184:* The County shall seek to minimize the total number of Average Daily Traffic (ADT) trips throughout East County.
- *Policy 185:* The County shall seek to minimize peak hour trips by exploring new methods that would discourage peak hour commuting and single vehicle occupancy trips.

Alameda County VMT Threshold. The County of Alameda has not yet adopted transportation guidelines for evaluating potential project-related impacts to VMT. In the interim, the OPR's Technical Advisory and CEQA Guidelines Section 15064.3(b) Criteria for Analyzing Transportation Impacts have been used to evaluate the proposed project.

For employment projects, OPR's Technical Advisory states the following – "A proposed project exceeding a level of 15 percent below existing regional VMT per employee may indicate a significant transportation impact". Accordingly, for the purposes of this study, a significant adverse impact will be identified if the project's VMT per worker is more

than 15 percent below the existing baseline VMT/employee for Alameda County (as determined by the Alameda CTC travel demand model).

Alameda County Level of Service Analysis Thresholds. Although automobile delay, as measured by level of service, no longer constitutes a significant environmental effect under CEQA, Alameda County has vehicle LOS policies to ensure that proposed developments are consistent with the County's General Plan. Therefore, an LOS analysis for the peak period of construction activities was prepared to evaluate the project's consistency with the County's policies.

The East County Area Plan (ECAP) is a subplan of the Alameda County General Plan and contains goals and policies to maintain an efficient circulation network in the eastern portion of Alameda County. These goals include creating and maintaining a balanced multimodal transportation system, reducing East County traffic congestion, completing County-planned street and highway improvements which are attractively designed to integrate pedestrian and vehicle use, increase investment in and use of transit, and include a comprehensive network of bicycle and pedestrian paths in the local and subregional transportation network.

The ECAP standard for major intercity arterials is LOS D or better and LOS E on Congestion Management Program (CMP) designated roadways (e.g., I-580). Alameda County has not established designated local truck routes nor adopted specific policies regarding management of construction activities. The thresholds were used to identify the project's potential impacts on intersections and roadway LOS.

Caltrans LOS Standards. Caltrans has identified a target LOS at the transition between LOS C and LOS D on state highway facilities; however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. For the purposes of this assessment, Caltrans intersections may be considered deficient when the addition of project-generated traffic causes roadway or intersection LOS to degrade to LOS D or worse on state highway facilities.

Impact discussions below for construction and operation pertain to project components both within the CEC's Opt-In Certification and project components outside the CEC's Opt-In Certification.

5.14.2.2 Direct and Indirect Impacts

a. Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Construction

Less Than Significant with Mitigation Incorporated. Based on the assessment, the addition of project-generated traffic during construction would create recurring impacts to level of service (per Alameda County's standard) during the weekday PM peak hour. Condition of Certification (COC) **TRANS-1** addresses this issue through the implementation of a Construction Traffic Management Plan to manage the flows of construction traffic at the impacted intersections during peak periods.

The project site's circulation system does not contain pedestrian, bicycle, public transportation, or airport facilities. Thus, the project would be consistent with the Alameda County Bicycle and Pedestrian Master Plan (Alameda County 2019) because no public transportation service or dedicated pedestrian or bicycle facilities exist on roadways that would be used to access the project site. An east-west Union Pacific rail line is approximately 900 feet south of the project site. A railroad bridge carries the rail line over Patterson Pass Road, however, allowing rail traffic to flow without conflicting with vehicular traffic. There would be no impact to rail traffic.

Construction Trip Generation, Distribution and Assignment

Construction would occur over an approximately 18-month period with initial mobilization and site preparation. The peak construction period of the project—when the highest volumes of construction-related traffic would be generated—is planned to occur over a three-month period, when multiple phases of project construction would occur concurrently. Generally, construction work schedules are expected to be at least 8 hours per day Monday through Friday, excluding federal holidays. Typically, the workday would consist of one shift beginning as early as 6 AM and ending as late as 7 PM. The work schedule may be modified throughout the year to account for changing weather conditions. To provide a conservative analysis, all construction workers were assumed to arrive inbound to the site during the AM peak period (7 AM to 9 AM) and all workers were assumed to depart the site during the PM peak period (4 PM to 6 PM). Truck deliveries are typically sporadic throughout the workday; therefore, truck arrivals and departures were assumed to be distributed evenly over the course of an 8-hour workday. The typical construction workday would be expected to be longer than 8-hours, therefore the analysis is conservative.

Based on information provided by the applicant, the project is estimated to generate approximately 916 daily trips, 305 AM peak hour trips, and 305 PM peak hour trips during the peak construction period. Utilizing PCE factors, the project would generate approximately 1,626 daily PCE trips, 394 AM peak hour PCE trips, and 394 PM peak hour PCE trips. For all other phases of construction, the amount of vehicular traffic is estimated to be less than the peak period. **Table 5.14-1** presents a summary of the anticipated peak construction period trip generation.

TABLE 5.14-1 CONSTRUCTION TRIP GENERATION

Trip Type	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Construction Workers[1]	508	254	0	254	0	254	254
Vendor Trucks[2]	106	13	0	13	0	13	13
Haul Trucks[3]	302	38	0	38	0	38	38
Total Construction Trips	**916**	**305**	**0**	**305**	**0**	**305**	**305**
Total Construction Trips in PCE	**1,626**	**394**	**0**	**394**	**0**	**394**	**394**

Notes: PCE = passenger car equivalent
1 Conservatively assumes all construction workers arrive in the AM peak hour and depart in the PM peak hour.
2 Vendor and haul trucks are assumed to arrive and depart the site evenly throughout the workday.
3 Vendor trucks were estimated to have an approximately 2.0 PCE adjusted value, while haul trucks were estimated to have an approximately 3.0 PCE adjusted value.

Regional project trip distribution percentages are based on logical travel paths to and from the project site. Project trip distribution percentages are shown in **Figure 5.14-4**. Project trips were assigned to the study area intersections by applying the above-referenced project trip generation estimates to the trip distribution percentages at each study area intersection.

Intersection LOS with Construction Traffic

Table 5.14-2 summarizes the results of the intersection analysis for the weekday AM and PM peak hours for existing conditions, with and without the project. As shown in the table, except for the Midway Road West and Patterson Pass Road intersection (#1), all study intersections currently operate at satisfactory levels of service (LOS D or better and LOS E at the I-580 ramps) under existing conditions and will continue to operate at satisfactory LOS with the addition of peak period construction traffic. The Midway Road West and Patterson Pass Road intersection (#1) would degrade to LOS E during the PM peak hour. However, the construction activities would be temporary and would be managed through implementation of COC **TRANS-1**. The Construction Traffic Management Plan would reduce the impact of increased traffic on study intersections to a less-than-significant level.

Freeway Ramp Terminal Intersection Queuing. Excessive queueing at the freeway ramp terminal intersections at the I-580/Patterson Pass Road/International Parkway interchange create the potential for spillback onto freeway mainline lanes. Queues extending into the freeway mainline would be considered a potentially significant impact on vehicular safety. The intersection analysis found the potential for queues on the westbound off-ramp to spill back into the I-580 mainline during the AM peak hour in both the existing scenarios with and without project construction traffic. Caltrans and the City of Tracy are in the process of reconstructing this interchange to provide additional capacity. The interchange improvement project is fully funded and expected to be complete by August 2026, prior to project construction. If project construction occurs prior to the interchange's upgrade, the Construction Traffic Management Plan outlined in COC **TRANS-1** shall be amended to prohibit all construction traffic from occurring during the weekday morning and evening peak hours.

Roadway Segment Operations with Construction Traffic

Table 5.14-3 presents the existing and project-added average daily traffic (ADT) on the regional roadways near the site, including the percentage of truck trips. The percent increase in both total daily ADT and truck ADT with the project-added traffic would be minimal on I-580 and on Patterson Road, south of the Union Pacific railroad tracks. Under existing conditions, the project-related increase in traffic would range from 0.46 percent to 1.8 percent on these road segments.

Construction traffic could cause a substantial traffic increase on Patterson Pass Road, west of Midway Road. The increase in construction trips would range from 11.1 percent of total ADT to a 668.9 percent increase in truck traffic on this segment of Patterson Pass Road. The substantial increase in construction traffic, especially during the AM and PM peak commute hours, could potentially cause degradation of traffic operation on this local road segment. However, the construction activities would be temporary and would be managed through implementation of COC **TRANS-1**. The Construction Traffic Management Plan would reduce the impact of increased traffic on Patterson Pass Road to a less-than-significant level. Furthermore, all construction-related traffic would be temporary and short term.

Figure 5.14-4 Project Construction Traffic Trip Distribution

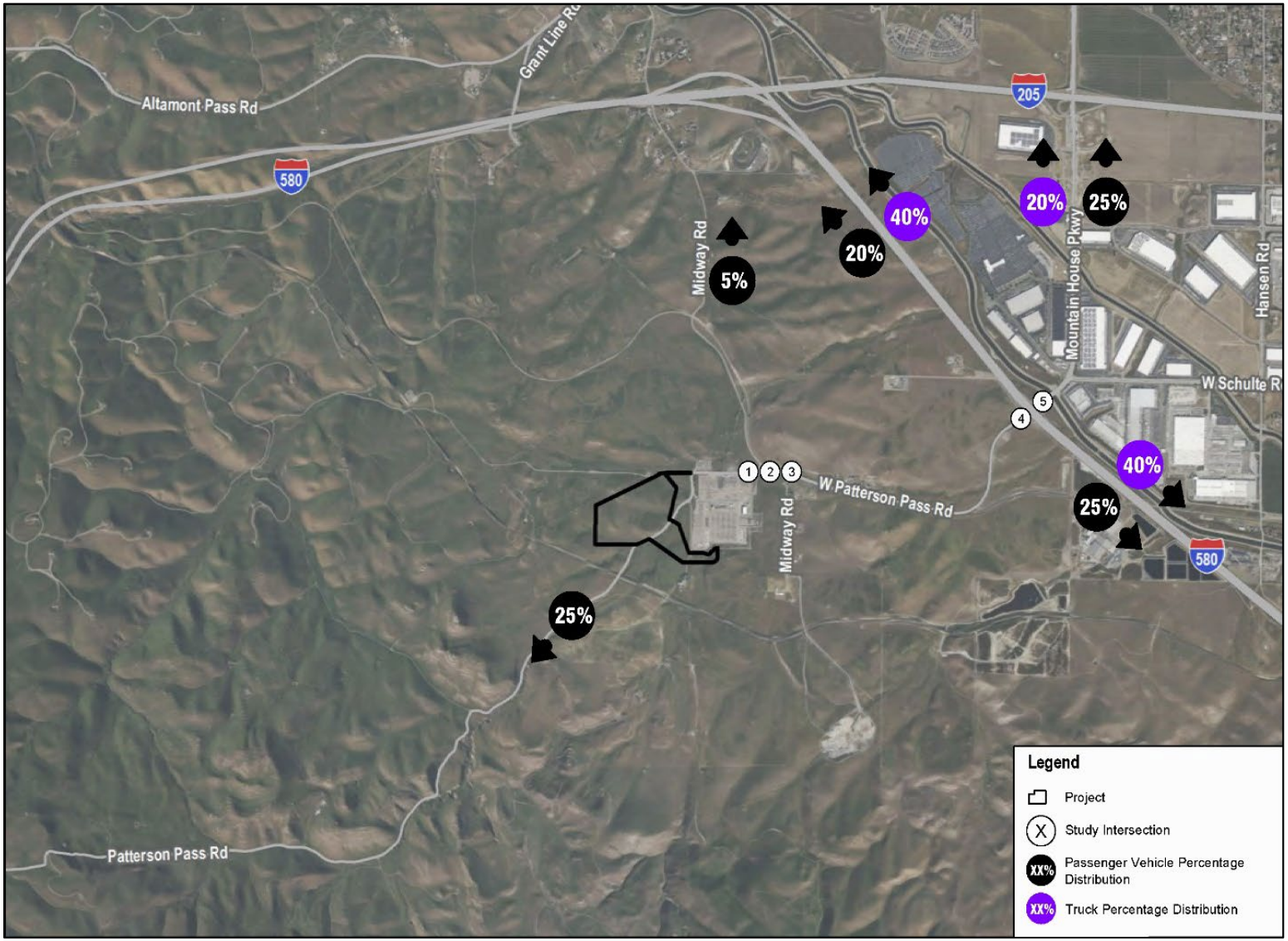


TABLE 5.14-2 EXISTING WEEKDAY PEAK HOUR INTERSECTION LOS (WITH AND WITHOUT PROJECT CONSTRUCION TRAFFIC)

No.	Intersection	Traffic Control[1]	Existing				Existing plus Peak period Construction				Change in Delay (Sec)		Threshold Exceeded?	
			AM Peak		PM Peak		AM Peak		PM Peak					
			Delay[2]	LOS[3]	Delay[2]	LOS[3]	Delay[2]	LOS[3]	Delay[2]	LOS[3]	AM	PM	AM	PM
1	Midway Rd. West /Patterson Pass Rd.	OWSC	15.8	C	23.3	C	23.6	C	**37.9**	E	7.8	14.6	No	Yes
2	N. Midway Rd./ Patterson Pass Rd.	OWSC	16.3	C	21.0	C	24.1	C	33.7	D	7.8	12.7	No	No
3	Midway Rd. East /Patterson Pass Rd.	OWSC	8.3	A	10.3	B	8.3	A	12.3	B	2.0	2.0	No	No
4	I-580 EB Ramps/ Patterson Pass Rd.	Signal	16.8	B	18.4	B	40.0	C	22.6	C	4.2	4.2	No	No
5	I-580 WB Ramps/ Patterson Pass Rd.	Signal	53.5	D	17.3	B	79.0	E	21.9	B	4.6	4.6	No	No

Notes:
1. OWSC = one-way stop control
2. Delay in seconds per vehicle; highest movement delay is reported for OWSC intersections
3. LOS = Level of Service

BOLD: Exceeds County's threshold

TABLE 5.14-3 ESTIMATED EXISTING CONSTRUCTION TRIPS ON REGIONAL ROADWAYS (PEAK CONSTRUCTION PERIOD)

Roadway	Existing AADT	Total Project AADT/Percentage Change	Existing Truck AADT	Project Truck AADT/Percentage Change
I-580, west of Patterson Pass Road	40,500[1]	285/0.7%	8,222	164/2.0%
I-580, east of Patterson Pass Road	47,000[1]	290/0.6%	8,319	164/2.0%
Patterson Pass Road, south of Union Pacific Railroad tracks	7,052[2]	127/1.8%	44	0/0.0%
Patterson Pass Road, west of Midway Road	7,107[2]	790/11.1%	61	408/668.9%

Notes: AADT = Annual Average Daily Traffic
1. Volume obtained from Caltrans Traffic Census Program, 2021
2. Volume provided from average daily traffic (ADT) counts conducted on February 15, 2024

Operation

Less Than Significant Impact. During ongoing operations, the project is expected to generate approximately 36 vehicle trips per day. This level of traffic increase is not considered substantial and roadway conditions in the project's vicinity with the addition of operational traffic would not substantially differ from existing conditions.

As previously described, the project site's existing circulation system does not contain pedestrian, bicycle, public transportation, or airport facilities. The existing railroad bridge carries rail traffic over Patterson Pass Road, allowing rail traffic to flow without conflicting with vehicular traffic. There would be no impact on these facilities. A bicycle route is proposed on Patterson Pass Road near the site; however, the permanent operation of the project is expected to have nominal operational vehicular trips associated with routine maintenance and upkeep of facilities. Therefore, the project would not conflict with applicable programs, plans, ordinances, or policies addressing the circulation system and impacts would be less than significant.

b. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

CEQA Guidelines Section 15064.3(b) focuses on VMT for determining the significance of transportation impacts. It is divided into four subdivisions: (1) land use projects, (2) transportation projects, (3) qualitative analysis, and (4) methodology. The updated CEQA Guidelines state that "generally, vehicle miles traveled (VMT) is the most appropriate measure of transportation impacts," and define VMT as "the amount and distance of automobile travel attributable to a project." "Automobile" refers to on-road passenger vehicles, specifically cars and light trucks. The OPR has clarified in its Technical Advisory (OPR 2018) that heavy-duty truck VMT is not required in the estimation of a project's VMT. The County of Alameda has not yet adopted transportation guidelines for evaluating potential project-related impacts to VMT. In the interim, the OPR's Technical Advisory and CEQA Guidelines Section 15064.3(b) Criteria for Analyzing Transportation Impacts have been used to evaluate the proposed project.

Construction

Less Than Significant Impact. During project construction, daily trips made by workers and delivery/haul trucks to and from the project would result in an increase in VMT. However, this increase in VMT would be temporary in nature, only lasting the duration of the construction phase. The CEQA guidelines are not specific on whether to include or exclude construction traffic, and the issue has not been specifically cited in any legal opinions. There is only one reference to "construction" in the State's April 2018 VMT Guidelines: "GHGs can be further reduced at the Project level through implementing energy-efficient construction and travel demand management approaches." This suggests that construction-related VMT is of interest to the State. Given that the traffic generation from the project is almost entirely (99.9%) during the construction phase, then it seems relevant to examine the VMT during construction.

CEQA Guidelines Section 15064.3, subdivision (a), states, "For the purposes of this section, 'vehicle miles traveled' refers to the amount and distance of automobile travel attributable to a Project. Here, the term 'automobile' refers to on-road passenger vehicles, specifically cars and light trucks." Based upon the above considerations, the following analysis looks at the worker (not trucks) trips to/from the site during the construction phase.

Vehicle-trip generation (for workers) as a result of project construction is summarized in **Table 5.14-4**. The project workforce is expected to be within a 26-mile radius of the project site. To estimate the worker VMT for the construction phase of the project, daily worker trips and trip lengths were multiplied for each phase of the project to estimate worker VMT for the duration of each phase. The total worker VMT (**Table 5.14-4**) was then normalized over the 25-year project life, which was estimated as 9,100 days. The daily VMT per worker was estimated by dividing the daily worker VMT by the average number of daily workers. As shown in **Table 5.14-5**, the project's daily VMT per worker is estimated to be 4.6. According to the Alameda CTC model the existing regional VMT per employee for Alameda County is 15.0. The significance threshold is 85 percent of the existing regional VMT or 15 percent below the existing regional VMT, hence 12.8 VMT per employee. Therefore, the normalized daily VMT per worker of 5.4 VMT per worker estimated for the project's construction is below the regional threshold of VMT per employee (12.8). Therefore, the construction phase of the project would result in a less than significant VMT impact.

Therefore, the construction of the proposed project would not conflict or be inconsistent with CEQA Guidelines Sections 15064.3(b)(1), and transportation impacts would be less than significant.

TABLE 5.14-4 TOTAL WORKER VMT DURING CONSTRUCTION PHASE

Phase	Worker Trips per Day (2 trips/worker)	Average Miles per Trip	Duration (days)	VMT per Phase
Site Preparation	50	26	40	52,000
Civil Work and Grading	110	26	120	343,200

TABLE 5.14-4 TOTAL WORKER VMT DURING CONSTRUCTION PHASE

Phase	Worker Trips per Day (2 trips/worker)	Average Miles per Trip	Duration (days)	VMT per Phase
Foundations and Underground Equipment	100	26	80	208,000
BESS Equipment Installation	160	26	100	416,000
Project Substation Installation	40	26	160	166,400
Gen-Tie Foundations and Structure Erection	28	26	40	29,120
Gen-Tie Line Stringing and Pulling	24	26	10	6,240
Testing and Commissioning	52	26	110	148,720
PG&E Interconnection Facility Upgrades with Tesla Substation	40	26	130	135,200
Decommissioning	40	26	150	156,000
TOTAL				1,660,880

TABLE 5.14-5 DAILY AVERAGE WORKER VMT DURING CONSTRUCTION

Item	Amount
Worker VMT during Construction (from Table 5.14-5)	1,660,880
Project Life (35 years, expressed in days)	9,100
Daily Worker VMT (total divided by number of days)	183
Average Daily Number of Workers over Life of Construction	34
Average VMT per Worker (daily VMT divided by number of workers)	5.4
Alameda County average VMT/Employee (from ACTC travel model)	15.0
Threshold of Significance (15% below County average)	12.8

Operation

Less Than Significant Impact. During on-going operations, the project is expected to require a maximum of three full-time on-site employees. Therefore, the project-generated VMT during operations would be negligible.

c. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Construction

Less Than Significant with Mitigation Incorporated. The project would not include any new off-site roadway design features, nor would it alter any existing geometric design features along any County roads. There would be no changes to the existing off-site circulation on County roads.

Two private road access points would be provided into the project site. The primary access point would be via an existing private driveway on the north side of the site linking to Patterson Pass Road. A secondary new private emergency vehicle access-only driveway would be provided on Patterson Pass Road on the southern side of the project

site. All internal roadways and private driveways would be constructed to meet access requirements for operations and maintenance activities and in accordance with Alameda County Fire Department Standards (Dudek 24c, page 3.12-10). It is expected that construction workers would park on-site and would not be staged or transported from any off-site location.

The northern project site access roadway would be such that slow trucks exiting the site would be visible to oncoming traffic and would allow for traffic to slow down and be aware of trucks.

Due to roadway conditions on Patterson Pass Road and sight constraints at the southern driveway, this driveway is designated for use by emergency vehicles only. If construction equipment must utilize the southern driveway, flaggers shall be used when construction traffic is entering or exiting the site, and/or the project should obtain temporary road closure permits from the County, depending on the volume and type of construction equipment needing to utilize the southern driveway. COC **TRANS-1** outlines a Construction Traffic Management plan required during project construction to mitigate potential hazards during construction. With the implementation of the Construction Traffic Management Plan, potential impacts due to slow-moving over-sized vehicles and/or sight-distance constraints would be mitigated. Therefore, impacts associated with hazardous design features or incompatible land uses would be less than significant.

Operation

Less Than Significant Impact. As described above, the project would not include any new off-site roadway design features, nor would it alter any existing geometric design features along any County roads. The project's operations would generate approximately 36 daily trips and roadway conditions in the project vicinity would not substantially differ from existing conditions with the project. Therefore, no sharp curves, dangerous intersections, or incompatible uses would be introduced by the project. The project's impact during normal operations would be less than significant.

d. Would the project result in inadequate emergency access?

Construction and Operation

Less Than Significant Impact. Construction activities and normal operation of the project would not adversely impact emergency vehicles. The addition of project-generated traffic during construction and operations along study roadways and at study intersections would have a negligible effect on emergency vehicles, as all vehicles are required to yield to emergency response vehicles. As detailed above, two emergency vehicle access points would be provided to the project site, and internal roadways would be constructed to Alameda County Fire Department Standards. The project would have a less-than-significant impact related to emergency access.

5.14.2.3 Cumulative Impacts

The geographic scope for cumulative transportation impacts includes the same roadways and intersections analyzed for existing conditions. The Cumulative (2027) condition represents a short-term horizon period when the project is under construction, and where the peak construction period would occur. Peak hour traffic forecasts for the Year 2027 were determined by increasing traffic volumes at an annual growth rate of two percent. After corresponding with the County's Planning Department, it was determined that there were a limited number of applicable cumulative projects due to the rural nature of the area, and because the analysis is focused on a specific period during peak construction traffic. No cumulative projects were identified with a peak construction period that overlaps with the project construction; therefore, no additional cumulative projects were added in the analysis. The Kola Battery Energy Storage System Project (Phase 2) is proposed to be constructed adjacent to the project site; however, that project's construction is anticipated to occur after construction of the proposed project is complete.

Construction

Less Than Significant with Mitigation Incorporated. Based on the cumulative assessment, the addition of project-generated traffic during construction would create recurring impacts to level of service (per Alameda County's standard) during the weekday PM peak hour. COC **TRANS-1** addresses this issue through the implementation of a Construction Traffic Management Plan to manage the flows of construction traffic at the impacted intersection during peak periods.

Cumulative Intersection LOS with Construction Traffic

Table 5.14-6 summarizes the results of the intersection analysis for the AM and PM peak hours for the Cumulative (2027) condition, with and without project traffic. As shown in the table, three of the study intersections are forecast to operate below acceptable levels of service under Cumulative (2027) conditions with the peak period of construction traffic added. The Midway Road and Patterson Pass Road intersection (#1) would degrade to LOS E during the PM peak hour, the North Midway Road and Patterson Pass Road intersection (#2) would degrade to LOS E during the PM peak hour, and the I-580 westbound ramps at Patterson Pass Road (#5) would degrade to LOS F during the AM peak hour. However, the construction activities would be temporary and managed through implementation of COC **TRANS-1**. The Construction Traffic Management Plan would reduce the impact of increased traffic on study intersections to a less-than-significant level.

A review of current California Department of Transportation (Caltrans) District 10 Projects found that extensive improvements are planned under the I-580/International Parkway/Patterson Pass Interchange Project, which will modify the existing compact diamond interchange into a Diverging Diamond Interchange (DDI). The current

schedule identifies an interchange project completion date of August 2026.[1] The project is approved and fully funded; the City of Tracy has awarded a contract for the construction of the interchange to a contractor. As the proposed Potentia-Viridi project is expected to start construction in 2027, the new DDI interchange would be in place prior to construction, and the interchange deficiencies noted above would be improved. The cumulative intersection analysis presented in **Table 5.14-6** does not assume the construction of this interchange to present a conservative worst-case condition.

Freeway Ramp Terminal Intersection Queuing. Excessive queueing at the freeway ramp terminal intersections at the I-580/Patterson Pass Road/International Parkway interchange create the potential for spillback onto the freeway mainline lanes. Queues extending into the freeway mainline would be considered a potentially significant impact on vehicular safety. The cumulative intersection analysis found the potential for queues on the westbound off-ramp to spill back into the I-580 mainline during the AM peak hour in both the Cumulative scenarios with and without project construction traffic. As noted above, Caltrans and the City of Tracy are in the process of reconstructing this interchange to provide additional capacity. The interchange improvement project is fully funded and expected to be complete by August 2026, prior to project construction. If project construction occurs prior to the interchange's upgrade, the Construction Traffic Management Plan outlined in COC **TRANS-1** shall be amended to prohibit all construction traffic from occurring during the weekday morning and evening peak hours.

Cumulative Roadway Segment Operations with Construction Traffic

Table 5.14-7 presents the Cumulative and project-added ADT on the regional roadways near the site, including the percentage of truck trips. The percent increase in both total daily ADT and truck ADT with the addition of project traffic would be minimal on I-580 and on Patterson Road, south of the Union Pacific Railroad. Under Cumulative conditions, the project-related increase in traffic would range from 0.6 percent to 1.7 percent on these road segments.

1 The current schedule is posted on Caltrans District 10 Current Project website, which identifies a project completion date of April 2025. An email was sent to District 10 Public Affairs on November 5, 2024, to confirm the posted schedule, and after additional coordination, email communication with City of Tracy Public Works on November 22, 2024, provided an updated project completion date of August 2026. https://dot.ca.gov/caltrans-near-me/district-10/district-10-current-projects/I-580-international-pkwy-patterson-pass-interchange

TABLE 5.14-6 CUMULATIVE (2027) WEEKDAY PEAK HOUR INTERSECTION LOS (WITH AND WITHOUT PROJECT)

No.	Intersection	Traffic Control[1]	Existing				Existing plus Peak period Construction				Change in Delay (Sec)		Threshold Exceeded?	
			AM Peak		PM Peak		AM Peak		PM Peak					
			Delay[2]	LOS[3]	Delay[2]	LOS[3]	Delay[2]	LOS[3]	Delay[2]	LOS[3]	AM	PM	AM	PM
1	Midway Rd. West/Patterson Pass Rd.	OWSC	16.6	C	25.3	D	25.2	D	**36.4**	**E**	8.6	16.3	No	**Yes**
2	N. Midway Rd./ Patterson Pass Rd.	OWSC	17.1	C	22.7	C	25.6	D	**37.3**	**E**	8.5	14.6	No	**Yes**
3	Midway Rd. East/Patterson Pass Rd.	OWSC	8.3	A	10.6	B	8.3	A	12.7	B	0.0	2.1	No	No
4	I-580 EB Ramps/ Patterson Pass Rd.	Signal	21.3	C	20.4	C	55.9	E	26.6	C	34.6	6.2	No	No
5	I-580 WB Ramps/ Patterson Pass Rd.	Signal	71.8	E	18.3	B	**98.2**	**F**	24.4	C	26.4	6.1	**Yes**	No

Notes:
1. OWSC = one-way stop control
2. Delay in seconds per vehicle; highest movement delay is reported for OWSC intersections
3. LOS = Level of Service

BOLD: Exceeds County's threshold

Construction traffic could cause a substantial traffic increase on Patterson Pass Road, west of Midway Road. The increase in construction trips would range from 10.5 percent of total ADT to a 637.5 percent increase in truck traffic on this segment of Patterson Pass Road. The substantial increase in construction traffic, especially during the AM and PM peak commute hours, could potentially degrade traffic operations on this local road segment. However, the construction activities would be temporary and would be managed through implementation of COC **TRANS-1**. The Construction Traffic Management Plan would reduce the impact of increased traffic on Patterson Pass Road to a less-than-significant level. Furthermore, all construction-related traffic would be temporary and short term (peak construction is anticipated to last approximately one month) and would be removed from the study area roadway network upon completion of the project.

TABLE 5.14-7 ESTIMATED CUMULATIVE (2027) CONSTRUCTION TRIPS ON REGIONAL ROADWAYS (PEAK CONSTRUCTION PERIOD)

Roadway	Existing AADT	Total Project AADT/Percentage Change	Existing Truck AADT	Project Truck AADT/Percentage Change
I-580, west of Patterson Pass Road	43,054[1]	165/0.4%	8,764	64/0.7%
I-580, east of Patterson Pass Road	49,948[1]	170/0.3%	8,867	64/0.7%
Patterson Pass Road, south of Union Pacific Railroad tracks	7,555[2]	105/1.4%	47	0/0.0%
Patterson Pass Road, west of Midway Road	7,614[2]	480/6.3%	65	159/244.6%

Notes: AADT = Annual Average Daily Traffic
1. Volume obtained from Caltrans Traffic Census Program, 2021
2. Volume provided from average daily traffic (ADT) counts conducted on February 15, 2024

Operation

Less Than Significant Impact. Based on the assessment, the addition of project-generated traffic to the cumulative scenario during project operations would not cause a substantial increase in traffic volumes within the transportation system affecting the efficiency of the transportation system, including transit, roadway, bicycle, and pedestrian facilities.

5.14.3 Project Conformance with Applicable LORS

Table 5.14-8 below details CEC staff's determination of conformance with applicable local, state, and federal LORS, including any proposed COCs, where applicable, to ensure the project components within the CEC's Opt-In certification would comply with LORS. As shown in this table, CEC staff concludes that with implementation of specific COCs, the proposed project would conform with all applicable LORS. The subsection below, "Proposed Conditions of Certification," contains the full text of the referenced COCs.

TABLE 5.14-8 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
Federal	
Code of Federal Regulations	
Title 49 CFR, Subtitle B, Sections 171-177 and 350-399 Requires proper handling and storage of hazardous materials during transportation.	**Yes.** The project transportation would align with all established standards for the transportation of hazardous materials. COC **TRANS-2** would verify compliance.
Title 14 CFR, Part 77, Section 77.9 Requires notification of the Federal Aviation Administration (FAA) of any construction or alterations exceeding 200 feet above ground level. Also requires FAA notification of any construction or alteration of greater height than an imaginary surface extending outward and upward at a slope of 100 to 1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of an airport with at least one runway more than 3,200 feet in length.	**Yes.** Construction would not exceed 200 feet above ground level and no airports are situated within 20,000 feet of the project; consequently, this requirement does not apply.
State	
California Vehicle Code (CVC)	
CVC Sections 13369, 15275, and 15278 Addresses the licensing of drivers and classifications of licenses required for the operation of particular types of vehicles. In addition, certificates permitting the operation of vehicles transporting hazardous materials are required.	**Yes.** The project would follow the guidelines specified in these sections of the CVC. COC **TRANS-3** would verify compliance.
CVC Section 25160 et seq. Addresses the safe transport of hazardous materials.	**Yes.** The project would follow the guidelines specified in these sections of the CVC.
CVC Sections 2500-2505 Authorizes the issuance of licenses by the Commissioner of the CHP for the transportation of hazardous materials including explosives.	**Yes.** The project would follow the guidelines specified in these sections of the CVC.
CVC Section 31300 et seq. Requires transporters to meet proper storage and handling standards for transporting hazardous materials on public roads.	**Yes.** Transporters would comply with standards for the transportation of hazardous materials on state highways throughout construction and operations. The State Emergency Response Commission (SERC) would ensure adherence to CVC Section 31303, mandating that shippers of hazardous materials opt for the shortest route possible to and from the site.
CVC Sections 31600 - 31620 Regulates the transportation of explosive materials.	**Yes.** The project would conform to CVC §31600 – 31620.
CVC Sections 32000 - 32053 Regulates the licensing of carriers of hazardous materials and includes noticing requirements.	**Yes.** The project would conform to CVC §31600 – 31620.
CVC Sections 32100 - 32109 and 32105 Establishes special requirements for the transportation of substances presenting inhalation hazard and poisonous gases, and require that shippers of inhalation or explosive	**Yes.** The project would comply by mandating shippers of inhalation or explosive materials to reach out to the CHP and secure a Hazardous Materials Transportation License.

TABLE 5.14-8 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
materials contact the CHP and apply for a Hazardous Material Transportation License.	
CVC Sections 34000 - 34121 Establishes special requirements for the transportation of flammable and combustible fluids over public roads and highways.	**Yes.** The project would conform to CVC §§34000 – 34121.
CVC Sections 34500, 34501, 34501.2, 34501.3, 34501.4, 34501.10, 34505.5–7, 34506, 34507.5 and 34510–11 Regulates the safe operation of vehicles, including those used to transport hazardous materials.	**Yes.** The project would follow the guidelines specified in these sections of the CVC.
CVC Sections 35780 Requires permits for any load that exceeds Caltrans weight, length, or width standards for public roadways.	**Yes.** Transporters would secure transportation permits for all overloads, as mandated.
CVC Sections 35550 - 35559 Regulates weight and load limitations.	**Yes.** The project would follow the guidelines specified in these sections of the CVC.
California Streets and Highways Code (S&HC)	
S&HC Sections 660, 670, 1450, 1460 et seq., 1470, and 1480 Regulates right-of-way encroachment and the granting of permits for encroachments on State and County roads.	**Yes.** The project would follow the guidelines specified in these sections of the S&HC.
S&HC Sections 117, 660 - 711 Requires permits from Caltrans for any roadway encroachment during truck transportation and delivery.	**Yes.** Encroachment permits would be obtained by transporters, as required.
S&HC Sections 660 - 711 Requires permits for any load that exceeds Caltrans weight, length, or width standards for public roadways.	**Yes.** Transportation permits would be obtained by transporters for all overloads, as required.
California State Planning Law	
Government Code, Section 65302 Requires that the project must conform to the General Plan.	**Yes.** The project would align with the provisions of the Alameda County General Plan.
Caltrans Transportation Impact Study Guide	
Caltrans Transportation Impact Study Guide	**Yes.** The project would have a less-than-significant impact on VMT due to the temporary nature of construction-related VMT and the minimal number of permanent operations-related trips.
Local	
Alameda County Transportation Commission (CTC) Congestion Management Program (CMP)	
CMP	**Yes.** The Alameda CTC CMP standards are focused on traffic impacts associated with future development, and do not apply to construction activities such as the project, in which there are temporary, short-term traffic increases that are eliminated once construction is completed.
Alameda County East Area Plan	
East Area Plan Policies 180, 183-185, 190, 193, 194	**Yes.** During construction, the project would maintain acceptable LOS for nearby intersections and roadways under existing conditions and with the implementation of COC **TRANS-1**:

TABLE 5.14-8 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
	Construction Traffic Management Plan. Thus, the project would conform with this requirement. There would be no impact during operations. The project site's circulation system does not contain pedestrian, bicycle, or public transportation. Thus, the project would be consistent with the Alameda County East Area Plan.
East Area Plan Policies 216-217	**Yes.** The Livermore Municipal Airport is approximately 19 miles west of the project site and therefore the project would not conflict with these policies.
Alameda County Bicycle and Pedestrian Master Plan	
Bicycle and Pedestrian Master Plan	**Yes.** The project site's circulation system does not contain pedestrian, bicycle, or public transportation. The project proposes no features that would be inconsistent with the Alameda County Bicycle and Pedestrian Master Plan.
Alameda County	
Alameda County Municipal Code Title 12, Chapter 12.08 Roadway Use Regulations	**Yes.** The project would obtain encroachment permits for all work within the County's right-of-way. This includes project roadway connections, construction traffic handling and roadway crossings made by project utility connections including the generation tie-in line. COC **TRANS-4** would verify compliance.

5.14.4 Conclusions and Recommendations

As discussed above, with implementation of the COCs, the project would have a less than significant impact related to transportation and would conform with applicable LORS. CEC staff recommends adopting the COCs as detailed in subsection "5.14.5 Proposed Conditions of Certification." No mitigation measures are needed for components of the project outside the CEC's Opt-In certification.

5.14.5 Proposed Conditions of Certification

The following proposed COCs include measures to both mitigate environmental impacts and ensure conformance with applicable LORS.

TRANS-1 The project owner shall prepare and implement a Construction Traffic Management Plan (CMP). The CMP shall address the movement of workers, vehicles, equipment, and materials, including arrival and departure schedules, carpooling, a parking/staging plan, and designated workforce and delivery routes. The CMP shall address means of access for emergency vehicles to the project, as well as means of maintaining access to any adjacent residential and commercial property during the construction of the project. In addition, the CMP shall include strategies to reduce the number of construction trips (trucks and passenger cars) that would be generated during the weekday AM and PM peak hours. This shall include the staggering of work shifts to reduce peak periods of

congestion and/or restrict worker arrivals and departures during peak hours during the peak construction phase. Time limits should be included on heavy truck deliveries to ensure the majority occur outside of the AM and PM peak hours.

Traffic control plans shall be prepared as necessary to address construction staging, as well as any roadway or lane closures, and shall include any signage or roadway lighting improvements deemed necessary during construction. These plans should call for the provision of flaggers or other mechanisms to allow for the entry and exit of construction traffic at the Midway Road West and Patterson Pass Road during peak hours.

The CMP shall include procedures to repair damage to existing roadways caused by project construction traffic. The construction contractor shall work with Alameda County to prepare a schedule and mitigation plan for the roadways along construction routes, in accordance with the procedures established by the CMP.

If project construction occurs prior to the completion of improvements to the I--580/International Parkway/Patterson Pass Interchange Project, the CMP shall be amended to include measures prohibiting all construction traffic (worker, vendor, and trucks) from occurring during the weekday AM (7 to 9 AM) and PM (4 to 6 PM) peak hours.

Verification: At least 60 calendar days prior to the start of construction, the project owner shall submit the CMP to Alameda County for review and comment and to the compliance project manager (CPM) for review and approval. The project owner shall also provide the CPM with a copy of the transmittal letter to Alameda County requesting review and comment.

At least 30 calendar days prior to the start of construction, the project owner shall provide copies of any comment letters received from Alameda County, or any other interested agencies, along with any changes to the CMP, for CPM review and approval. After CPM review and approval, the project owner shall provide completed copies of the final CMP to Alameda and any other interested agencies, sending copies of the correspondence to the CPM.

TRANS-2 The project owner shall comply with limitations imposed by Caltrans and other relevant jurisdictions, including the County of Alameda, on vehicle sizes, weights, driver licensing, and truck routes as part of **HAZ-1**, which requires preparation of a Hazard Mitigation Business Plan for submission to Alameda County.

Verification: The project owner shall retain copies of permits and supporting documents on-site for CPM inspection if requested.

TRANS-3 The project owner shall ensure that permits and/or licenses are secured from the relevant administering agency, including California Highway Patrol and Caltrans for the transport of hazardous materials.

Verification: The project owner shall include in its Monthly Compliance Reports (MCRs) copies of all permits/licenses acquired by the project owner and/or subcontractors concerning the transport of hazardous materials.

TRANS-4 The project owner shall comply with limitations for encroachment into public rights-of-way established by Alameda County Municipal Code Title 12, Chapter 12.08 Roadway Use Regulations, and shall obtain necessary encroachment permits from Alameda County prior to any work within the County's rights-of-way.

Verification: The project owner shall include in its Monthly Compliance Reports (MCRs) copies of all encroachment permits acquired by the project owner and/or subcontractors for any work within Alameda County's rights-of-way.

5.14.6 Recommended Mitigation Measures

There are no recommended mitigation measures for transportation.

5.14.7 References

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5.15 Visual Resources

5.15.1 Environmental Setting

The proposed project would be constructed on an approximately 58.8-acre portion of an approximately 70-acre lease area (proposed project site) in unincorporated eastern Alameda County, California. An additional 1.9 acres of additional, adjacent land are expected to be disturbed for installation of the transmission and interconnecting facilities. The proposed project site consists of fallow, annual grasslands suitable for grazing. The grassland vegetation is typical of the Diablo Mountain Range around Altamont Pass and is dominated by non-native species. There are no trees, significant geologic features, or other distinguishing features present on the proposed project site and very few trees in the vicinity of the proposed project site. Brown shrubs line the proposed project site's post-and-wire fencing adjacent to Patterson Pass Road.

The proposed project site lies on the east-facing slopes of the range that extends from the Altamont Pass area at the ridgeline down to the San Joaquin Valley to the east. Generally, the terrain increases in elevation from east to west, climbing from the valley bottom near the City of Tracy (approximately 20 feet Above Mean Sea Level [AMSL]) to the ridgeline near Altamont Pass at an elevation of approximately 800 feet AMSL. See **Section 2, Introduction**, for a description of the project components within the California Energy Commission's (CEC's) Opt-In certification and project components outside the CEC's Opt-In certification.

The proposed project site and gen-tie route area are adjacent to Pacific Gas and Electric Company's (PG&E's) Tesla Substation. In addition to the Tesla Substation, the proposed project site and gen-tie route are surrounded by multiple high-voltage transmission lines (connecting to the Tesla Substation and a nearby wind farm), undeveloped grasslands, pasture, rural roads, a Southern Pacific railroad line (near the proposed project site's southern border), and scattered, low-density residential uses. The nearest residence is approximately 0.28 mile southeast of the proposed project site and 560 feet south of the proposed gen-tie line. A large wind farm occupies the ridgelines and upper slopes approximately three miles west of the proposed project site. The Alameda County/San Joaquin County line is approximately 0.6 mile east of the proposed project site. The City of Tracy is approximately 2.5 miles to the east of the proposed project site in neighboring San Joaquin County.

The landscape immediately surrounding the proposed project site is primarily agricultural and, therefore, has limited sources of nighttime artificial light. The nighttime viewing conditions are influenced by existing lighting from the Tesla Substation, Federal Aviation Administration (FAA) hazard lights on the wind turbines visible along the horizon to the west, and rural residences. No street lighting exists along nearby highways or local roadways. However, intermittent/temporary lighting from cars and trucks is present along nearby highways (i.e., Interstate 580 [I-580] and Interstate 205 [I-205]) and

local roadways including the adjacent (to the proposed project site) Patterson Pass Road.

CEC staff reviewed the applicant-prepared inventory of scenic resources within 5 miles of the proposed project site (**Visual Resources Figure 5.15-1** Scenic Resources).

Regulatory

Federal, state, and local government laws, ordinances, regulations, and standards (LORS) relating to aesthetics and visual resources applicable to the proposed project and proposed project site are set forth below.

Federal

CEC staff found no applicable federal regulations related to aesthetics/visual resources for the proposed project and proposed project site.

State

California Building Code, Title 24, Part 1; and California Electrical Code, Title 24, Part 3. The California Building Code and Electrical Code stipulate minimum light intensities for pedestrian pathways, circulation ways, parking lots, and paths of egress.

California Energy Code, Title 24, Part 6. The California Energy Code stipulates allowances for lighting power and provides lighting control requirements for various lighting systems, with the aim of reducing energy consumption through efficient and effective use of lighting equipment.

California Scenic Highway Program. The California Scenic Highway Program was established by the Legislature as Article 2.5 (commencing with section 260) of the Streets and Highways Code. The purpose of the program is to protect and enhance the natural scenic beauty of California highways and adjacent corridors through special conservation treatment.

Section 263 of the Streets and Highways Code, the "State Scenic Highway System List," provides a list of highways that have been either officially designated or are eligible for designation as a state scenic highway (Caltrans 2024).

Local

Alameda County General Plan Scenic Route Element. The Alameda County General Plan Scenic Route Element includes principles and development standards designed to protect and enhance scenic values along scenic routes and other areas, which are visible from, and have an effect on, the quality of the view from the scenic route.

Principles That Apply to Scenic Route Corridors

- **Provide for Normal Uses of Land and Protect Against Unsightly Features:** In both urban and rural areas, normally permitted uses of land should be allowed in scenic corridors, except that panoramic views and vistas should be preserved and enhanced through supplementing normal zoning regulations with special height, area, and side-yard regulations; through providing architectural and site design review; through prohibition and removal of billboards, signs not relevant to the main use of the property, obtrusive signs, automobile wrecking and junk yards, and similar unsightly development or use of land. Design and location of all signs should be regulated to prevent conglomerations of unsightly signs along roadsides.
- **Locate Transmission Towers and Lines Outside of Scenic Route Corridors When Feasible:** New overhead transmission towers and lines should not be located within scenic corridors when it is feasible to locate them elsewhere.
- **Underground Utility Distribution Lines When Feasible; Make Overhead Lines Inconspicuous:** New, relocated or existing utility distribution lines should be placed underground whenever feasible. When it is not feasible to place lines underground, they should be located so as to be inconspicuous from the scenic route. Poles of an improved design should be used wherever possible. Combined or adjacent rights-of-way and common poles should be used wherever feasible.
- **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.

Principles That Apply to Areas Beyond the Scenic Route Corridors

- **Preserve and Enhance Natural Scenic Qualities in Areas Beyond the Scenic Corridor:** Views from scenic routes will comprise essentially all of the remainder of the county beyond the limits of the scenic corridor. The corridor is intended to establish a framework for the observation of the views beyond. Therefore, in all areas in the county extending beyond the scenic route corridors, scenic qualities should be preserved through retaining the general character of natural slopes and natural formations, and through preservation and enhancement of water areas, water courses, vegetation and wildlife habitats. Development of lands adjacent to scenic route corridors should not obstruct views of scenic areas and development should be visually compatible with the natural scenic qualities.
- **Provide for Normal Uses of Land but Limit Overhead Utilities and Outdoor Advertising Structures:** In both developed and undeveloped areas, outdoor advertising structures, utility and communication towers, poles, and wires should be located only where they will not detract from significant scenic views. All other structures and use of land should be permitted as specified in the local zoning ordinance as supplemented by special height regulations.

Scenic Route Corridor Development Standards

- In corridors along scenic routes with outstanding distant views above the roadbed, no building structure of more than one-story in height should be permitted where it would obstruct views, excepting within and immediately adjacent to central business district locations. On lots where the building structure is higher than the roadbed in corridors along routes with outstanding distant views, the combined width of side yards should equal or exceed the width of the building structure as measured parallel to the roadbed.
- In all zoning districts where the allowable height limit exceeds 35 feet, each proposed structure over 35 feet except utility poles and lines, should be reviewed by the local jurisdiction for approval to ensure that such structure will not conflict with any view from any scenic route.
- Alteration to natural or artificial land contours should not be permitted without a grading permit issued by the local jurisdiction as a means of preserving and enhancing the natural topography and vegetation in developable areas. Mass grading should not be permitted. The following criteria should be applied in the review of grading permits in developable areas:
    - As a means of preserving natural "ridge skylines" within the county, no major ridgeline construction of individual dwellings should be permitted as approved on the site development review.
    - Access roads should be located and designed to keep grading to a minimum.
    - Natural ground contours in slope areas over 10 percent should not be altered more than 5 percent overall, except in such slope areas where large stands of mature vegetation, scenic natural formations or natural watercourses exist, where grading should be limited so as to preserve the natural features.
    - Any contour altered by grading should be restored by means of land sculpturing in such a manner as to minimize run-off and erosion problems, and should be planted with low maintenance, fire-resistant plant materials that are compatible with the existing environment.

Alameda County General Plan Open Space Element. The Alameda County General Plan Open Space Element includes principles designed to protect and enhance open space within the County through the establishment of a series of open space principles.

Principles

- **Natural Ridgelines and Slope Areas:** Natural ridgelines and slopes in excess of 25 percent in grade should be left as open space to eliminate mass grading.
- **Limit Development Within Open Space Areas:** Development within open space areas should be permitted in selected areas and should be limited to facilities needed in conjunction with low density recreation areas or to selected public facilities.

- **Consolidate and Locate Utility Lines to Avoid Scenic Areas:** Wherever feasible, power and pipe utility lines should be consolidated to prevent further severance of open space lands. Utility lines and aqueducts in open space areas should be located so as to avoid areas of outstanding beauty.

Alameda County East County Area Plan (ECAP), Land Use, Sensitive Viewsheds

Goal: To preserve unique visual resources and protect sensitive viewsheds.

- **Policy 106:** Structures may not be located on ridgelines or hilltops or where they will project above a ridgeline or hilltop as viewed from public roads, trails, parks and other public viewpoints unless there is no other site on the parcel for the structure or on a contiguous parcel in common ownership on or subsequent to the date this ordinance becomes effective. New parcels may not be created that have no building site other than a ridgeline or hilltop, or that would cause a structure to protrude above a ridgeline or hilltop, unless there is no other possible configuration.
- **Policy 108:** To the extent possible, including by clustering, if necessary, structures shall be located on that part of a parcel or on contiguous parcels in common ownership on or subsequent to the date this ordinance becomes effective, where the development is least visible to persons on public roads, trails, parks and other public viewpoints. This policy does not apply to agricultural structures to the extent it is necessary for agricultural purposes that they be located in more visible areas.
- **Policy 114:** The County shall require the use of landscaping in both rural and urban areas to enhance the scenic quality of the area and to screen undesirable views. Choice of plants should be based on compatibility with surrounding vegetation, drought-tolerance, and suitability to site conditions; and in rural areas, habitat value and fire retardance.
- **Policy 115:** In all cases appropriate building materials, landscaping and screening shall be required to minimize the visual impact of development. Development shall blend with and be subordinate to the environment and character of the area where located, so as to be as unobtrusive as possible and not detract from the natural, open space or visual qualities of the area. To the maximum extent practicable, all exterior lighting must be located, designed, and shielded so as to confine direct rays to the parcel where the lighting is located.
- **Policy 116:** To the maximum extent possible, development shall be located and designed to conform with rather than change natural landforms. The alteration of natural topography, vegetation, and other characteristics by grading, excavating, filling or other development activity shall be minimized. To the extent feasible, access roads shall be consolidated and located where they are least visible from public view points.

- **Policy 117:** The County shall require that where grading is necessary, the off-site visibility of cut and fill slopes and drainage improvements is minimized. Graded slopes shall be designed to simulate natural contours and support vegetation to blend with surrounding undisturbed slopes.
- **Policy 118:** The County shall require that grading avoid areas containing large stands of mature healthy vegetation, scenic natural formations, or natural watercourses.
- **Policy 119:** The County shall require that access roads be sited and designed to minimize grading.
- **Policy 120:** The County shall require that utility lines be placed underground whenever feasible. When located above ground, utility lines and supporting structures shall be sited to minimize their visual impact.

Alameda County East County Area Plan (ECAP), Transportation, Scenic Highways

Goal: To preserve and enhance views within scenic corridors.

- **Policy 215:** The County shall manage development and conservation of land within East County scenic highway corridors to maintain and enhance scenic values.

CEC staff discusses the project's conformance with applicable LORS in subsection 5.15.3 Project Conformance with Applicable LORS.

Cumulative Projects

The landscape in the area surrounding the proposed project demonstrates evidence of past and present visible disturbances related to electric energy transmission, wind energy production, transportation infrastructure, residential and commercial development, and agriculture. These past projects may be relevant for a cumulative analysis of the proposed project and the effects pertaining to aesthetics/visual resources from these projects, in particular, Project No. 1 (Mulqueeney Ranch Wind Repowering Project) and Project No. 2 (Griffith Energy Storage Project (KOLA), which are close to the proposed project. **Appendix A**, **Table A-1** and **Figure A-1** identify the known planned or proposed future projects in the proposed project area. Cumulative impacts of the proposed project are addressed in Section 5.15.2.3 Cumulative Impacts.

5.15.2 Environmental Impacts

AESTHETICS Except as provided in Public Resources Code Section 21099,[1] would the project:	**Significant and Unavoidable Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings (public views are those that are experienced from 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?	☒	☐	☐	☐
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☒	☐	☐

California Code of Regulations, Title 14, Division 6, Chapter 3, Article 20 Appendix G Environmental Checklist Form, I. Aesthetics as amended December 28, 2018.

5.15.2.1 Methodology and Thresholds of Significance

The CEC evaluates a proposed project in accordance with the California Environmental Quality Act (CEQA) codified in California Public Resources Code (Pub. Resources Code) section (§) 21000 et seq., and the Guidelines for the Implementation of the California Environmental Quality Act (CEQA Guidelines) codified in the California Code of Regulations (Cal. Code Regs.), Title 14 § 15000 et seq.

CEQA states "'Environment' means the physical conditions which exist within the area which will be affected by a proposed project, including land, air, water, minerals, flora, fauna, noise, objects of historic or aesthetic significance [emphasis added]." (Pub. Resources Code § 21060.5)

The CEQA Guidelines state "Effects analyzed under CEQA must be related to a physical change." (Cal. Code Regs., tit. 14, § 15358[b])

1 Public Resources Code section 21099 asks is the proposed project an "employment center project" on an "infill site" within a "transit priority area" as defined in this section? A transit priority area is an area within a half mile (2,640 feet) of a major transit stop existing or planned. Public Resources Code section 21099(d)(1) states "Aesthetic and parking impacts of a residential, mixed-use residential, or employment center project on an infill site within a transit priority area shall not be considered significant impacts on the environment."

The CEQA Guidelines also state a "'Significant effect on the environment' means 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 or aesthetic significance [emphasis added]." (Cal. Code Regs., tit. 14, § 15382)[2]

"The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data. An ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting. For example, an activity which may not be significant in an urban area may be significant in a rural area." (Cal. Code Regs., tit. 14, § 15064[b][1])

The CEC must assess "...the physical environmental conditions in the vicinity of the project. This environmental setting will normally constitute the baseline physical conditions by which a lead agency[3] determines whether an impact is significant." (Cal. Code Regs., tit. 14, § 15125[a])

Object of Aesthetic Significance

An exact definition of an "object of aesthetic significance" is not provided in CEQA or the CEQA Guidelines. For these analyses, an object of aesthetic significance can be explained as an object subjectively designated by the federal, state, or local government and unique to it. Also, an undesignated but popularly used or appreciated area or object of aesthetic claim of significance is considered within this definition. A tour book guide and road atlas of the area (e.g., AAA, Rand McNally) are helpful. A lead agency may look to local planning thresholds when defining the aesthetic impact standard for the purpose of CEQA[4] (e.g., general plan, specific plan, zoning). A few often-designated objects of aesthetic significance at the federal, state, or local government levels have included:

- A geographic feature, geologic distinguishing characteristic or structure, or geomorphologic feature.
- A structure that embodies elements of architecture or engineering design, detail, materials, or craftsmanship that represent a significant innovation or is unique.
- A structure of unusual historical and usually aesthetic interest.
- A tree or group of trees recognized for their aesthetic, botanical, and ecological value, and/or age, rarity, and size.

2 In addition to Cal. Code Regs., tit. 14, § 15382 also stated in Cal. Code Regs., tit. 14, § 15360 and Public Resources Code § 21060.5.
3 "'Lead agency' means the public agency which has the principal responsibility for carrying out or approving a project." (Cal. Code Regs., tit. 14, § 15367)
4 *Mira Mar Mobile Community v. City of Oceanside* (2004) 119 Cal. App. 4th 477.

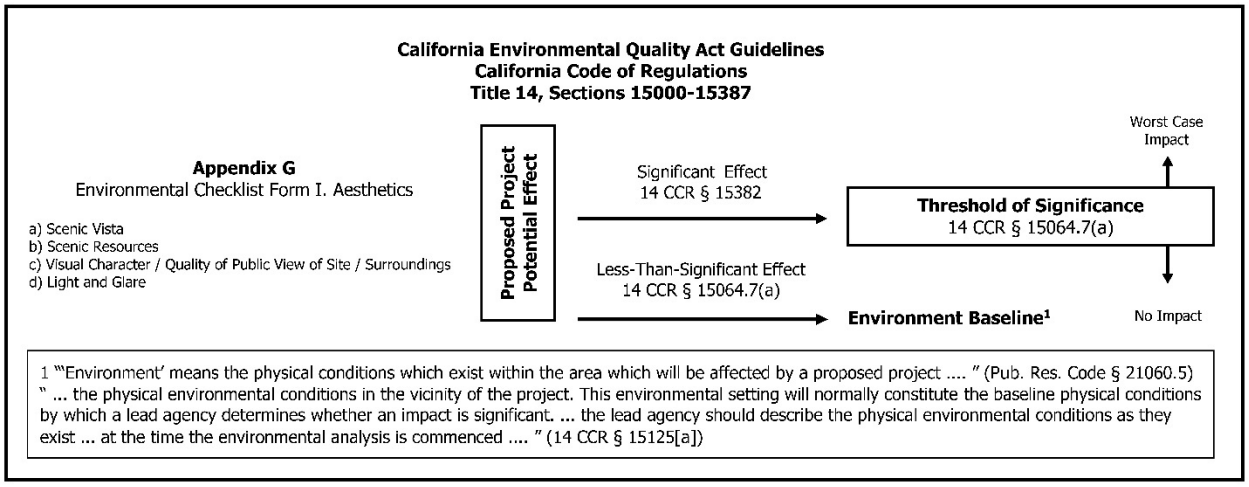
- A designed landscape.

The potential physical change by the proposed project to an existing object of aesthetic significance in the area and the existing physical environment is what is analyzed.

Environmental Factor – Aesthetics

The CEQA Guidelines *Appendix G Environmental Checklist Form, I. Aesthetics* supplies questions (criteria) to answer when evaluating if a proposed project has a significant effect on the environment involving the environmental factor "Aesthetics" (shown above). CEC staff uses these questions in this analysis. Explanations and responses to them are presented under the subheadings Scenic Vista, Scenic Resources Within a State Scenic Highway, Visual Character or Quality of Public View of a Site and its Surroundings, and Light and Glare.

"An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency...is to be reviewed in the light of what is reasonably feasible.... The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure." (Cal. Code Regs., tit. 14, § 15151)



"An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency...is to be reviewed in the light of what is reasonably feasible.... The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure." (Cal. Code Regs., tit. 14, § 15151)

Threshold of Significance

The CEQA Guidelines define a *threshold of significance* as "an identifiable quantitative, qualitative or performance level of a particular environmental effect, noncompliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant." (Cal. Code Regs., tit, 14, § 15064.7[a]) See CEQA Guidelines Level Of Effect On The Environment below.

"Thresholds of significance...may assist lead agencies in determining whether a proposed project may cause a significant impact. When using a threshold, the lead agency should briefly explain how compliance with the threshold means that the proposed project's impacts are less than significant. Compliance with the threshold does not relieve a lead agency of the obligation to consider substantial evidence indicating that the project's environmental effects may still be significant." (Cal. Code Regs., tit, 14, § 15064[b][2])

"When adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence." (Cal. Code Regs., tit, 14, § 15064.7[c])

Staff Method

CEC staff evaluates: (1) the alteration to the existing *landscape* [5] by a proposed *project* [6] using the CEQA Guidelines, Appendix G, I. Aesthetics[7] and (2) the conformance of the proposed project with any LORS related to aesthetics and visual resources.

Completing an evaluation typically entails: examining aerial and street view imagery; reviewing Geographic Information System (GIS) information; analyzing site and vicinity photographs including any photographs from a key observation point (KOP) (see **Visual Resources Figures 5.15-3A, -4A, -5A**, and **-6A**) and analyzing photo-realistic simulation(s) of the proposed project in the existing landscape (see **Visual Resources Figures 5.15-3B, -4B, -5B**, and **-6B**). It also entails assessing elevations, architectural and site development plans, drawings, and renderings; reviewing applicable federal, state, and local government codes and regulations, maps, and plans; consulting tour book guides and road atlases; and visiting the proposed project site, KOPs, and surrounding area.

5 Landscape is defined as "The outdoor environment, natural or built, which can be directly perceived by a person visiting and using that environment. A scene is the subset of a landscape which is viewed from one location (vantage point) looking in one direction." (Hull and Revell 1989) "The term landscape clearly focuses upon the visual properties or characteristics of the environment, these include natural and man-made elements and physical and biological resources which could be identified visually; thus, non-visual biological functions, cultural/historical values, wildlife and endangered species, wilderness value, opportunities for recreation activities and a large array of tastes, smells and feelings are not included." (Daniel and Vining 1983; Amir and Gidalizon 1990)

6 A thermal or nonthermal generating facility with a capacity of 50-megawatts or more. An energy storage facility with a capacity of 200-megawatt hours or more. (See Pub. Res. Code § 25120 and 25545-25545.2)

7 California Code of Regulations, Title 14, Division 6, Chapter 3, Article 20 Appendix G Environmental Checklist Form, I. Aesthetics as amended December 28, 2018.

CEQA GUIDELINES LEVEL OF EFFECT ON THE ENVIRONMENT
Significant Effect on the Environment "means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance." (Cal. Code Regs., tit. 14, § 15382) (Pub. Resources Code § 21060.5, Cal. Code Regs., tit. 14, § 15360) The physical change by the proposed project to the existing physical environment reaches the threshold of significance, "an identifiable, quantitative, qualitative or performance level of a particular environmental effect, noncompliance with which means the effect will normally be determined to be significant by the [lead] agency...." (Cal. Code Regs., tit. 14, § 15064.7[a])
Less-Than-Significant Effect with Mitigation Incorporated. The physical change by the proposed project to the existing physical environment reaches the threshold of significance, "... but (1) revisions in the project plans or proposals made by, or agreed to by, the applicant before the proposed [CEQA environmental document (e.g., Negative Declaration) is] released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effect on the environment would occur, and (2) there is no substantial evidence in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment." (Pub. Resources Code § 21064.5, Cal. Code Regs., tit. 14, § 15369.5) (Pub. Resources Code § 21002)
Less-Than-Significant Effect. The physical change by the proposed project to the existing physical environment does not reach the threshold of significance "an identifiable, quantitative, qualitative or performance level of a particular environmental effect, ... compliance with which means the effect normally will be determined to be less than significant." (Cal. Code Regs., tit. 14, § 15064.7[a])

5.15.2.2 Direct and Indirect Impacts

Scenic Vista

a. Would the project "have a substantial adverse effect on a scenic vista?"

Project Components Within CECs Opt-In Certification and Components Outside CEC's Opt-In Certification

Neither CEQA nor the CEQA Guidelines provide a definition of what constitutes a scenic vista. As already noted, lead agencies may look to local planning thresholds for guidance when defining the visual impact standard for the purposes of CEQA.[8] A general plan, specific plan, zoning, or other planning document can provide guidance.

The CEC in its certification (approval) for a number of thermal power plant projects has used as the definition for a scenic vista as, "a distant view of high pictorial quality perceived through and along a corridor or opening."[9]

8 *Mira Mar Mobile Community v. City of Oceanside* (2004) 119 Cal. App. 4th 477.
9 California Energy Commission Final Decision for GWF Tracy Combined Cycle Power Plant Project Docket Number 08-AFC-7, Visual Resources, p. 321; California Energy Commission Decision for Mariposa Energy Project Docket Number 09-AFC-3, Visual Resources, p. 5; California Energy Commission Decision for Blythe Solar Power Project Docket Number 09-AFC-6, Visual Resources, p. 514; California Energy Commission Decision for Genesis Solar Energy Project Docket Number 09-AFC-8, Visual Resources, p. 7-8; California Energy Commission Decision for Pio Pico Energy Center Docket Number 11-AFC-01, Visual Resources, p. 8.5-4.

In this definition, "... perceived through and along a corridor or opening" refers to the potential movement into or through a portion of landscape limited by either elevated landforms bounding the observer's field of view in a rural landscape, or dominant man-made horizontal and/or vertical massed components[10] positioned at regular intervals that bound the observer's field of view in an urban landscape. No specific observer locations form the basis for defining the visual unit boundary. Instead, a distinct change in the extent and direction of views from the ground typically determines the boundary. The space within this area is inherently variable in appearance, possessing its own distinct visual character. The scenic distinction created by the combination of components within and surrounding it enables the viewer to form a unified impression (e.g., breathtaking, stunning, unsettling, repulsive).An example of a scenic vista in a rural landscape would be the view through and along the Yosemite Valley as seen from the Wawona Tunnel overlook in Yosemite National Park, California. In an urban landscape, two examples include the view through and along the National Mall from the Washington Monument in Washington, D.C. and the view through and along Capitol Mall from the Tower Bridge to the California State Capitol building in Sacramento, California.

Once a scenic vista is identified, an adverse effect is presumed when a sizable component(s) of the proposed project physically changes the scenic vista (e.g., obstructs).

Permanent Facility

No Impact. The proposed project would be constructed on an approximately 58.8-acre portion of an approximately 70-acre lease area in unincorporated eastern Alameda County, California. An additional 1.9 acres of adjacent land are expected to be disturbed for installation of the transmission and interconnecting facilities. The site consists of fallow, annual grasslands suitable for grazing. The proposed project site and gen-tie route area are adjacent to the Tesla Substation.

The most publicly visible proposed project structures would include numerous battery energy storage system (BESS) enclosures (20-feet-long, 10-feet-tall, 8-feet-wide); power conversion systems (PCS) enclosures (22-feet-long, 8-feet-tall, 7-feet-wide); proposed project substation (switch gear, power transformers, lightning arresters; tallest component being 50-feet-tall); three operations and maintenance buildings (100-feet-long, 24-feet-tall, 48-feet-wide); 10,000-gallon fresh water cistern (11.75-feet-diameter, 11.75-feet-tall); 30,000-gallon fire water storage tank (24-feet-diameter, 18-feet-tall); gen-tie transmission line with tubular steel poles (up to 199-feet-tall) and spanning a distance of approximately 2,884 feet to the southeast to connect with the Tesla Substation; and security fencing (9-feet-tall). **Table 5.15-1** provides a list of key Project Site Components.

10 A "component" is an individual object that makes up the landscape, physical and visible, natural and man-made which can be described, quantified, and measured (e.g., a puzzle piece in the overall picture).

Refer to **Section 3 Project Description** for greater detail about the proposed project. See **Visual Resources Figures 5.15-3B, -4b, -5b**, and **-6b** for simulations of the proposed project as viewed from KOPs 1 through 4, respectively.

TABLE 5.15-1 CHARACTERISTICS OF PRIMARY PROJECT COMPONENTS

Project Component	Dimensions/Size	Materials	Finishes
BESS Yard	**13.3 acres**		
BESS Enclosures	20-feet-long, 8-feet-wide, 10-feet-tall	Steel	Light to dark grey
Power Conversion Systems (PCS) Enclosures	22-feet-long, 7-feet-wide, 8-feet-tall	Steel	Light to dark grey
Project Substation	**5.5 acres**		
Transformers and Lightening Arresters	50-feet-tall (40-foot transformers and 10-foot lightning arresters)	Steel	Light to dark grey
Gen-Tie Line	**2,884 feet long**		
Tubular Steel Poles	110 to 199 feet tall	Steel	Light to dark grey
500 kV Gen-Tie Circuit	2 x 1590 Kcmil ACSR "Falcon" conductor, approximately 0.5 mile	Aluminum, steel, no coating	Light to dark grey
Laydown Areas/O&M Building	**15.2 acres**		
Laydown Yard 1	75,935 square feet	Gravel	Exposed gravel
Laydown Yard 2	10,890 square feet	Gravel	Exposed gravel
Operations and Maintenance Buildings (to be sited within the laydown yard)	3 x 100-feet-long, 48-feet-wide, 24-feet-tall	Steel frame construc-tion with insulated metal wall panels on a concrete slab	Steel frame construction with insulated metal wall panels on a concrete slab
Fresh Water Cistern (10,000 gallon)	11.75 feet diameter, 11.75 feet tall	Fiberglass or plastic on a concrete slab	Light to dark grey
Fire Water Storage Tank (30,000 gallon)	24-feet-diameter, 10-feet-tall	Fiberglass or steel on a concrete slab	Light to dark grey
Stormwater Areas	**9.3 acres**		
Stormwater Detention/Retention Basin 1	34,215 square feet	Shallow earth and rock basin	Exposed soil and rock
Stormwater Detention/Retention Basin 2	46,413 square feet	Shallow earth and rock basin	Exposed soil and rock
Stormwater Outfall	26,136 square feet	36-inch corrugated metal pipe or bioswale/ ditch and clean riprap	Light to dark grey
Other Above-Ground Components			
Security Fencing	Up to 9 feet tall; 8-foot-tall chain link topped with 1 foot of barbed wire	Metal chain link topped with barbed wire	Light to dark grey
Security Camera	10-feet-tall	Wood or metal pole	Grey or brown

CEC staff reviewed current aerial and street view imagery (Google Earth, Google Maps), United States Geological Survey (USGS) map information, and area maps and concluded

the proposed project would be on a low level (valley floor and gentle slopes) relative to the surrounding terrain (hills and ridges) and not within a scenic vista.

The East County Area Plan (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 (Alameda County 2000). The proposed project and proposed gen-tie line would be located southeast of the Altamont Pass towards the San Joaquin County border and would, therefore, be outside of the viewshed of these ridgelines. The proposed project and proposed gen-tie line are not located on a designated visually sensitive ridgeline, nor in the vicinity of any designated visually sensitive ridgelines.

The ECAP also designates viewsheds, which include the aforementioned major ridgelines, as well as Brushy Peak, Donlan Peak, Mount Diablo, and Cresta Blanca near Arroyo Road south of Livermore (Alameda County 2000). The proposed project and proposed gen-tie line would not be located in or near these viewsheds. Furthermore, the ECAP does not identify any scenic vistas within the proposed project area that would potentially be affected by the proposed project. Therefore, the proposed project would result in no impact on the environment with respect to scenic vistas (see above table CEQA Guidelines Levels of Effect on the Environment).

Scenic Resources Within a State Scenic Highway

b. Would the project "substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?"

Project Components Within CECs Opt-In Certification and Components Outside CEC's Opt-In Certification

Neither CEQA nor the CEQA Guidelines provide a definition of what constitutes a scenic resource. A *scenic resource* in addition to being designated in an adopted federal, state, or local government planning document, plan, or regulation as suggested in the above aesthetics question, may be explained as a widely recognized, natural or man-made feature tangible in the landscape. Hence, a scenic resource includes but is not limited to:

- A natural feature or object that is part of the land such as a geologic distinguishing characteristic or structure (e.g., batholith, laccolith, mesa); a geomorphologic feature produced from deposition or erosion (e.g., gorge, inselberg, moraine); a water body (e.g., lake, waterway, estuary); or a tree recognized for its aesthetic, botanical, and ecological value, or age, rarity, and size.

- A man-made feature or object that embodies elements of architecture or engineering design, detail, materials, or craftsmanship that represents a significant innovation or is unique such as the California State Capitol, Golden Gate Bridge, or Hollywood sign.
- A cultural resource,[11] historic property, or landmark. It should be recognized that cultural and historic values differ from aesthetic or scenic values (e.g., elegance, harmonious, imposing, sublime).

This analysis evaluated if the proposed project would substantially damage—eliminate or obstruct—public view[12] of a scenic resource within the viewshed of a state scenic highway and whether the proposed project would be situated so that it changes the visual appearance of a scenic resource by being in sharp contrast with the existing environment. CEC staff generally uses a three-mile[13] distance zone surrounding the proposed project site for this analysis.

An adverse effect exists if the proposed project would eliminate or obstruct a public view of a scenic resource and/or change its visual appearance when viewed from a State Scenic Highway.

Permanent Facility

No Impact. The proposed project would be constructed on an approximately 58.8-acre portion of an approximately 70-acre leased area in unincorporated eastern Alameda County, California. An additional 1.9 acres of adjacent land are expected to be disturbed for installation of the transmission and interconnecting facilities. The proposed project site consists of fallow, annual grasslands suitable for grazing. The proposed project site and gen-tie route area are adjacent to the Tesla Substation.

California Streets and Highways Code Section 263, the "State Scenic Highway System List," provides a list of highways that have been either officially designated or are eligible for designation as a state scenic highway. The proposed project site is not shown along a designated or eligible state scenic highway. The closest eligible scenic highway is that portion of I-580 extending west from its intersection with I-205. This segment of I-580 is approximately 1.9 miles north of the proposed project site. The closest designated scenic highway is that portion of Interstate 580 extending south

11 Cultural resources encompass all the physical evidence of past human activity. These could include buildings, structures, engineering features; prehistoric sites; historic or prehistoric artifacts or objects. These nonrenewable resources often yield unique information about past societies and environments and provide answers for modern day social and conservation problems. (NRCS 2024)
12 A public view can be defined as the area visible from a location where the public has a legal and physical right of access to real property (e.g., city sidewalk, public park, town square, state highway). California Code of Regulations, Title 14, Division 6, Chapter 3, Article 20 Appendix G Environmental Checklist Form, I. Aesthetics c. states "Public views are those that are experienced from publicly accessible vantage point." The California Courts of Appeal, Fourth District wrote "Under CEQA, the question is whether a project will affect the environment of persons in general, not whether a project will affect particular persons." (*Mira Mar Mobile Community v. City of Oceanside* (2004) 119 Cal. App. 4th 477.)
13 "Based on the curve of the Earth: Standing on a flat surface with your eyes about 5 feet off the ground, the farthest edge that you can see is about 3 miles away." (Roland 2019)

from its intersection with I-205. This segment of I-580 is approximately 1.7 miles east of the proposed project site. The proposed project features would not noticeably impact views from either segment of I-580 because of distance and intervening hilly terrain.

Additionally, CEC staff review of the Alameda County General Plan concluded there is no designated and protected scenic resource on the proposed project site or in the vicinity that would be visible from a state scenic highway. A county ordinance identifying a specific scenic resource on the proposed project site or in the vicinity was not found.

Also, CEC staff reviewed an inventory of scenic resources within five miles of the proposed project site prepared by the applicant and presented here as **Visual Resources Figure 5.15-1**. CEC staff also reviewed current aerial and street view imagery (Google Earth, Google Maps), area maps, and a tour book guide, and did not find a scenic resource on the proposed project site or in the vicinity or a state scenic highway in the proposed project vicinity.

Therefore, the proposed project would not eliminate or obstruct a public view of a scenic resource nor change the visual appearance of it when viewed from a state scenic highway. Therefore, the proposed project would result in *no impact on the environment* with respect to scenic resources within a state scenic highway.

Visual Character or Quality of Public View of Site and its Surroundings

c. Would the project "in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from 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?"

Project Components Within CECs Opt-In Certification and Components Outside CEC's Opt-In Certification

An adverse effect exists if the project in a non-urbanized area significantly degrades the existing visual character or quality of public views of the site and its surroundings, or if in an urbanized area conflicts with zoning and other regulations governing scenic quality. Based on the definition of "urbanized area" set forth in Public Resources Code section 21071,[14] CEC staff determined the proposed project site to be in a non-urbanized area.

14 An "urbanized area" means either "(a) An incorporated city that meets either of the following criteria: (1) Has a population of at least 100,000 persons. (2) Has a population of less than 100,000 persons if the population of that city and not more than two contiguous incorporated cities combined equals at least 100,000 persons." (Public Resources Code section 21071[a]) An urbanized area also includes unincorporated area that satisfies the criteria in Public Resources Code section 21071(b).

Key Observation Point Evaluation

"Visual landscape assessments involve the inventory and evaluation of diverse visible attributes of the landscape for purposes of planning, design and management.… As currently practiced, visual assessments are firmly grounded in a tradition of knowing that requires the collection of empirical (often quantitative) data for analysis through systematic means. That is...the landscape has a physical reality independent of people that can be characterized through various measurements. The landscape also has a reality that depends on our individual perceptions. These perceptions can be characterized or measured by various means."[15] CEC staff evaluates a proposed project in the landscape using an adapted descriptive inventory methodology.[16] See the evaluation flowchart below.

"Because it is difficult to describe visual appearance in words, visual assessments of the existing environment and the consequences of project alternatives should be based on 'illustrations of actual views'....Because resources and time are always limited, it is also necessary to limit the number of views analyzed: it is essential that these be 'representative views,' neither understating nor overstating the visual effects of the project." (Smardon, 1986, p. 255)

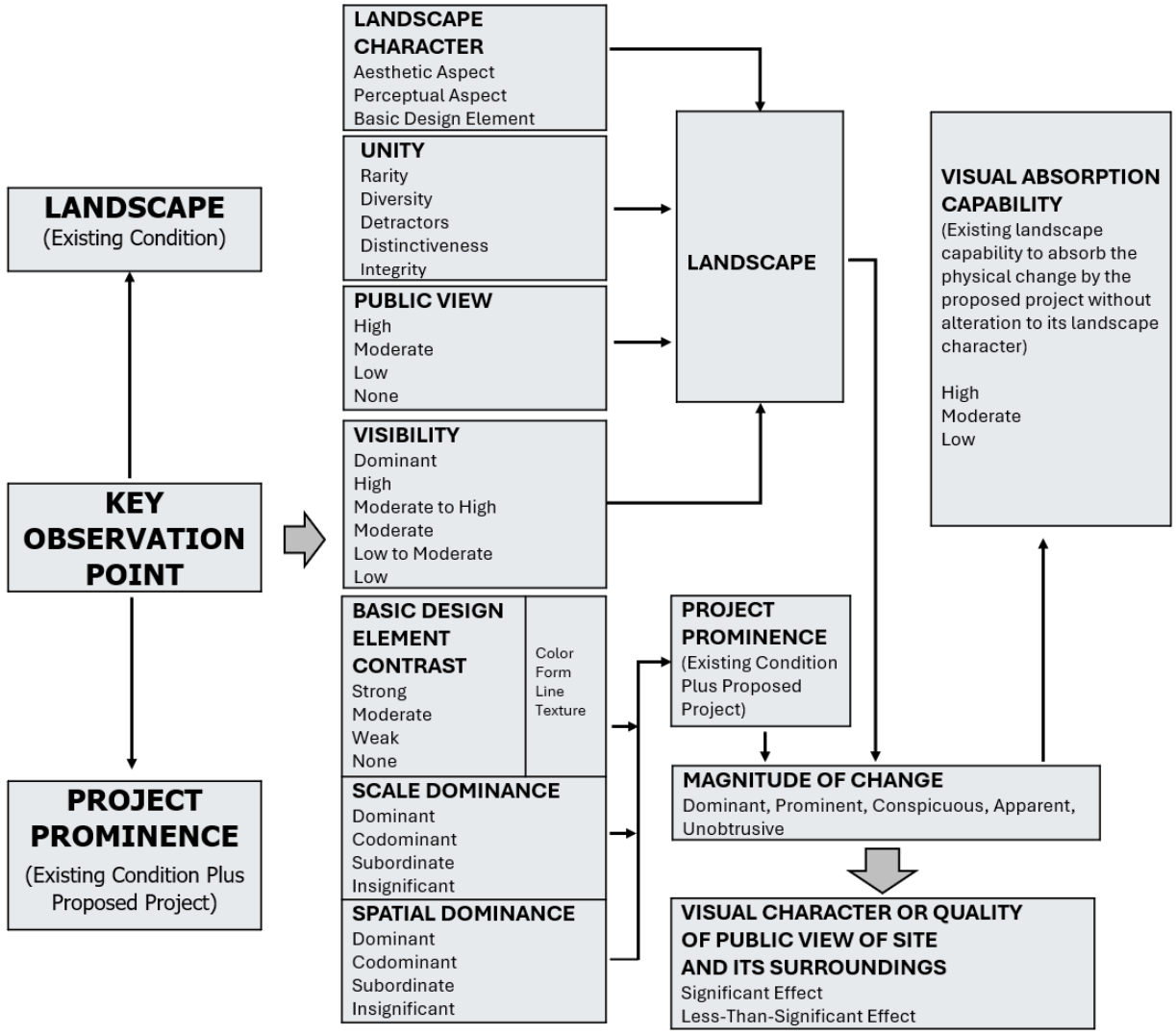
The primary purpose of a visual simulation is to accurately portray in a realistic manner and context a proposed activity, modification, or change in the existing physical landscape (e.g., proposed project). It is a photographic image that has been computer-modified to show a not-yet existing feature. A visual simulation is not a "real life view." It illustrates a two-dimensional view of a proposed activity from a particular viewpoint as depicted in a photograph and not as it would appear as a three-dimensional image as seen in the field with the human eye. That being said, a visual simulation is a useful tool to assist in the assessment and decision-making process, whereby better informed and more transparent judgments on visual-related effects can be made.

In accordance with CEQA and the CEQA Guidelines, CEC staff assessed the physical change to the existing physical environment caused by the proposed project (project effect) in terms of aesthetics, not the sensitivity of the viewer to the physical change (viewer sensitivity), which often mistakenly happens.

15 Palmer and Robin 2001, p. 149.

16 A visual landscape assessment is a process that evaluates the quality and characteristics of a landscape. Numerous techniques of landscape evaluation have been devised. These techniques can be divided into broad categories, descriptive inventories, public preference models, and quantitative holistic methods. These methods can be further subdivided into non-quantitative and quantitative approaches including ecological, formal aesthetic, phenomenological, psychological, psychophysical models. There are also direct/indirect, quantitative/non-quantitative, and subjective/objective methods. It should be noted that not all landscape evaluation techniques comply with CEQA and/or the CEQA Guidelines.

Evaluation Flowchart



In this analysis, a KOP is used. A KOP is a fixed position in a publicly accessible location where a public view of the proposed project is analyzed and evaluated in the landscape. The applicant provided four photographs showing the existing physical environment including the proposed project site prior to alteration from four different KOPs (existing condition) and four photo-realistic simulations of the proposed project in the existing environment from the same KOPs (existing condition plus proposed project). **Visual Resources Figure 5.15.-2** displays the applicant-selected KOP locations. CEC staff analyzed all four existing condition photographs along with their corresponding photo-realistic simulations. See **Visual Resources Figure 5.15-3a** through **Visual Resources Figure 5.15-6b**.

CEC staff completed a Key Observation Point Evaluation Worksheet (worksheet) for each KOP. The completed worksheets have been attached to this section. See **Key**

Observation Point Evaluation Worksheets 1 through **4**. A synopsis of each worksheet is presented below.

Permanent Facility

Significant Effect. CEC staff concludes given the existing landscape, the proposed project would substantially degrade the existing visual character or quality of public views of the site and its surroundings from KOPs 2, 3, and 4 (though it should be noted that the public can only get close to KOP 4 using a private, gravel, access road beyond a locked gate).

The proposed project would be constructed on an approximately 58.8-acre portion of an approximately 70-acre lease area in unincorporated eastern Alameda County, California. An additional 1.9 acres of adjacent land are expected to be disturbed for installation of the transmission and interconnecting facilities. The proposed project site consists of fallow, annual grasslands suitable for grazing. The proposed project site and gen-tie route area are adjacent to the Tesla Substation. The proposed project site is only accessible from Patterson Pass Road.

As previously described, the most publicly visible proposed project structures would include numerous BESS enclosures (20-feet-long, 10-feet-tall, 8-feet-wide); PCS enclosures (22-feet-long, 8-feet-tall, 7-feet-wide); proposed project substation (switch gear, power transformers, lightning arresters [tallest component being 50-feet-tall]); three operations and maintenance buildings (100-feet-long, 24-feet-tall, 48-feet-wide); 10,000-gallon fresh water cistern (11.75-feet-diameter, 11.75-feet-tall); 30,000-gallon fire water storage tank (24-feet-diameter, 18-feet-tall); gen-tie transmission line with tubular steel poles (up to 199-feet-tall) and spanning a distance of approximately 2,884 feet to the southeast to connect with the PG&E Tesla Substation; and security fencing (9-feet-tall). **Table 5.15-1** provides a list of key Project Site Components. Refer to **Section 3 Project Description** for greater detail about the proposed project.

KOP 1 – Westbound Patterson Pass Road – Looking Southwest. KOP 1 is from the westbound lane of Patterson Pass Road where the road turns south to parallel the east side of the proposed project site and the west side of the Tesla Substation. From KOP 1, the proposed project site is approximately 590 feet to the southwest. See **Visual Resources Figure 5.15-3a** - existing conditions of proposed project site from westbound Patterson Pass Road and **Visual Resources Figure 5.15-3b** - existing conditions plus proposed project.

Patterson Pass Road is a 2-lane, local roadway that extends from the Livermore Valley east to I-580 in the Central Valley. The foreground of the view from KOP 1 encompasses the paved roadway; post-and-wire fencing; yellow, white, black, and blue signage; overhead transmission line structures and conductors, and a metal-gated gravel roadway leading west along the north border of the proposed project site. Views from Patterson Pass Road also encompass relatively level grasslands (non-native grasses) and low, rolling hills that primarily support agricultural operations. Also

prevalent are numerous electric transmission facilities (extending from the foreground to the background) that interconnect with the Tesla Substation. More distant views capture numerous wind turbines that populate the hill tops and ridgelines in and around the Altamont Pass area. CEC staff did not identify an "object of aesthetic significance" at or visible from this KOP. CEC staff conducted an evaluation of the physical change to the existing physical environment by the proposed project.

As shown in the simulation for KOP 1, under the proposed project conditions (**Visual Resources Figure 5.15-3b**), the immediate foreground of the roadway and post-and-wire fencing would remain unchanged. The undeveloped, graded slopes would be reseeded to mimic existing grassland conditions. The approximately 9.5-foot-tall BESS enclosures and 7.2-foot-tall PCS enclosures within the southeastern BESS yard would be visible in the middleground, along with the centralized, open-air proposed project sub-station consisting of approximately 32-foot-tall transformers with 10-foot-tall lightning arresters. Also visible would be the upper portions of the approximately 24-foot-tall O&M buildings and approximately 18-foot-tall fire water tank. BESS enclosures would appear as light grey, rectangular structures running horizontally across the midpoint of the landscape. BESS enclosures in the southern portion would extend above the horizon, and BESS enclosures in the northern portion of the proposed project site would appear slightly below the golden hills in the background. Transformers and lightning arresters would appear as grey tubular columns, some of which would extend above the horizon established by distant ridgelines. The approximately 90-foot-tall to 185-foot-tall, proposed gen-tie line and associated tubular support poles would be visible running toward the Tesla Substation.

From KOP 1, given the existing physical landscape (existing physical environment), the proposed project prominence (basic design element contrast, scale dominance, spatial dominance) in the existing physical landscape rated strong. The visual absorption capability of the landscape rated moderate (primarily due to the prevalence of existing energy infrastructure visible from KOP 1). The magnitude of change (dominant, prominent, conspicuous, apparent, unobtrusive) in the landscape rated prominent, meaning the proposed project stands out or is striking in the view in the landscape. See the **Key Observation Point Evaluation Worksheet - Key Observation Point No. 1**.

For the purpose of the CEQA Guidelines, and as set forth in Table 15 in the worksheet, this combination of ratings yields a conclusion that the proposed project would have a *less-than-significant effect on the environment* in the degrading of the existing visual character or quality of the public view of the site and its surroundings. This conclusion is substantially affected by the prevalence of existing energy infrastructure (transmission lines and wind turbines) extending from the foreground to the background in views from KOP 1.

KOP 2 – Eastbound Patterson Pass Road – Looking North. KOP 2 is just south of the proposed project site on Patterson Pass Road. From KOP 2, the proposed project site is approximately 470 feet to the north. See **Visual Resources Figure 5.15-4a** –

existing conditions of proposed project site from eastbound Patterson Pass Road, and **Visual Resources Figure 5.15-4b** – existing conditions plus proposed project.

The foreground view from KOP 2 encompasses the asphalt roadway lined with brown shrubs; post-and-wire fencing; a roadway sign; and the gently sloping, grass-covered topography of the proposed project site. Along the horizon are several electric transmission lines with lattice structures and curvilinear conductors. CEC staff did not identify an "object of aesthetic significance" at or visible from this KOP. CEC staff conducted an evaluation of the physical change to the existing physical environment by the proposed project.

As viewed from KOP 2 (see **Visual Resources Figure 5.15-4b**), the approximately 9.5-foot-tall BESS enclosures and 7.2-foot tall PCS enclosures within the southeastern BESS yard would be visible in the middleground, along with the centralized, open-air proposed project substation consisting of approximately 32-foot-tall transformers with 10-foot-tall lightning arresters. BESS enclosures would appear as light grey, rectangular structures running horizontally across the midpoint of the landscape. BESS enclosures in the southern portion would extend above the horizon, and BESS enclosures in the northern portion of the proposed project site would appear below the horizon established by the golden hills.

From KOP 2, given the existing physical landscape (existing physical environment), the project prominence (basic design element contrast, scale dominance, spatial dominance) in the existing physical landscape rated severe. The visual absorption capability of the landscape rated low. The magnitude of change (dominant, prominent, conspicuous, apparent, unobtrusive) in the landscape rated dominant, meaning the proposed project commands or controls the view in the landscape. See the **Key Observation Point Evaluation Worksheet - Key Observation Point No. 2**.

For the purpose of the CEQA Guidelines, and as set forth in Table 15 in the worksheet, this combination of ratings yields a conclusion that the proposed project would have a *significant effect on the environment* in the degrading of the existing visual character or quality of the public view of the site and its surroundings.

KOP 3 – Eastbound Patterson Pass Road – Looking Northeast. KOP 3 is also just south of the proposed project (but farther east) on eastbound Patterson Pass Road. From KOP 3, the proposed project site is approximately 50 feet to the north and the gen-tie route is approximately 560 feet to the northeast. See **Visual Resources Figure 5.15-5a** – existing conditions of proposed project site from eastbound Patterson Pass Road, and **Visual Resources Figure 5.15-5b** – existing conditions plus proposed project (gen-tie line).

The foreground of views from KOP 3 includes the paved roadway, post-and-wire fencing, and grass-covered slopes. A communications tower; overhead transmission lines and the associated grey, lattice, steel towers; and Tesla Substation are visible in

the middleground and appear as a cluster of metal projections extending above the horizon. CEC staff did not identify an "object of aesthetic significance" at or visible from this KOP. CEC staff conducted an evaluation of the physical change to the existing physical environment by the proposed project.

As shown in the visual simulation presented in Visual Resources Figure 5.15-6b, the immediate foreground of the asphalt roadway and post-and-wire fencing would remain unchanged. However, the 90-foot-tall to 185-foot-tall gen-tie line would be visible spanning Patterson Pass Road, then turning east to connect with Tesla Substation in the middleground.

From KOP 3, given the existing physical landscape (existing physical environment), the project prominence (basic design element contrast, scale dominance, spatial dominance) in the existing physical landscape rated strong. The visual absorption capability of the landscape rated low. The magnitude of change (dominant, prominent, conspicuous, apparent, unobtrusive) in the landscape rated dominant, meaning the proposed project commands or controls the view in the landscape. See the **Key Observation Point Evaluation Worksheet - Key Observation Point No. 3**.

For the purpose of the CEQA Guidelines, and as set forth in Table 15 in the worksheet, this combination of ratings yields a conclusion that the proposed project would have a *significant effect on the environment* in the degrading of the existing visual character or quality of the public view of the site and its surroundings.

KOP 4 – Private Gravel Road – Looking Southwest. KOP 4 KOP 4, Patterson Pass Road – Looking Southwest) is from a private, gravel road northeast of the proposed project site, approximately 160 feet west of the access gate on Patterson Pass Road. From KOP 4, the proposed project site is approximately 415 feet to the southwest, see **Visual Resources Figure 5.15-6a** – existing conditions of proposed project site from Private Gravel Access Road, and **Visual Resources Figure 5.15-6b** – existing conditions plus proposed project.

Foreground views from KOP 4 include the gravel access roadway with tan, non-native grasses and shrubs on the relatively flat terrain of the proposed project site. Overhead transmission lines with the associated grey lattice, steel towers are visible in the foreground, middleground, and distance. CEC staff did not identify an "object of aesthetic significance" at or visible from this KOP. CEC staff conducted an evaluation of the physical change to the existing physical environment by the proposed project.

As shown in the simulation presented in **Visual Resources Figure 5.15-6b**, the immediate foreground of the gravel roadway and grass and shrubs would remain unchanged. The top 1/3 of the approximately 9.5-foot-tall BESS enclosures within the northwestern BESS yard would be visible in the middleground, along with the approximately 32-foot-tall transformers and 10-foot-tall lightning arresters within the centralized proposed project substation, and the upper portions of the approximately

24-foot-tall O&M buildings and approximately 18-foot-tall fire water tank. BESS enclosures would appear as light grey, rectangular structures running horizontally across the midpoint of the landscape and sitting below the horizon of the distant ridgeline. The approximately 90-foot-tall to 185-foot-tall gen-tie line and associated tubular steel support poles would be visible crossing from the center of the viewshed to the east towards Tesla Substation.

From KOP 4, given the existing physical landscape (existing physical environment), the project prominence (basic design element contrast, scale dominance, spatial dominance) in the existing physical landscape rated strong. The visual absorption capability of the landscape rated low. The magnitude of change (dominant, prominent, conspicuous, apparent, unobtrusive) in the landscape rated prominent, meaning the proposed project stands out or is striking in the view in the landscape. See the **Key Observation Point Evaluation Worksheet - Key Observation Point No. 4**.

For the purpose of the CEQA Guidelines, and as set forth in Table 15 in the worksheet, this combination of ratings yields a conclusion that the proposed project would have a *significant effect on the environment* in the degrading of the existing visual character or quality of the private and public view of the site and its surroundings.

It is worth noting that although KOPs 1 and 4 are located in close proximity to each other, the existing view from KOP 4 is less influenced by the existing transmission lines and wind turbines (that are more visible from KOP 1) because of the KOP 4 location and angle of view. As a result, the visible proposed project impact is greater when viewed from KOP 4.

New Buildings/Structures and Site Development

A few purposes for a height requirement include to preserve a scenic vista, protect the public view of a scenic resource (e.g., an architectural structure, a landmark, natural feature), and to maintain the existing observable land use character of the surrounding area (e.g., agricultural, commercial, historical, residential).

CEC staff reviewed the General Plan and zoning, aerial and street imagery, area maps, site and vicinity photographs; building elevations, drawings, renderings, and similar and concluded proposed project buildings and structures would not be within a scenic vista and not eliminate or obstruct a public view of a scenic resource. However, while they would be consistent with other nearby industrial facilities (the Tesla Substation and the numerous connecting transmission lines), they would not be concordant with the observable land use character of the site and some (though not all) of the surrounding grasslands and hills.

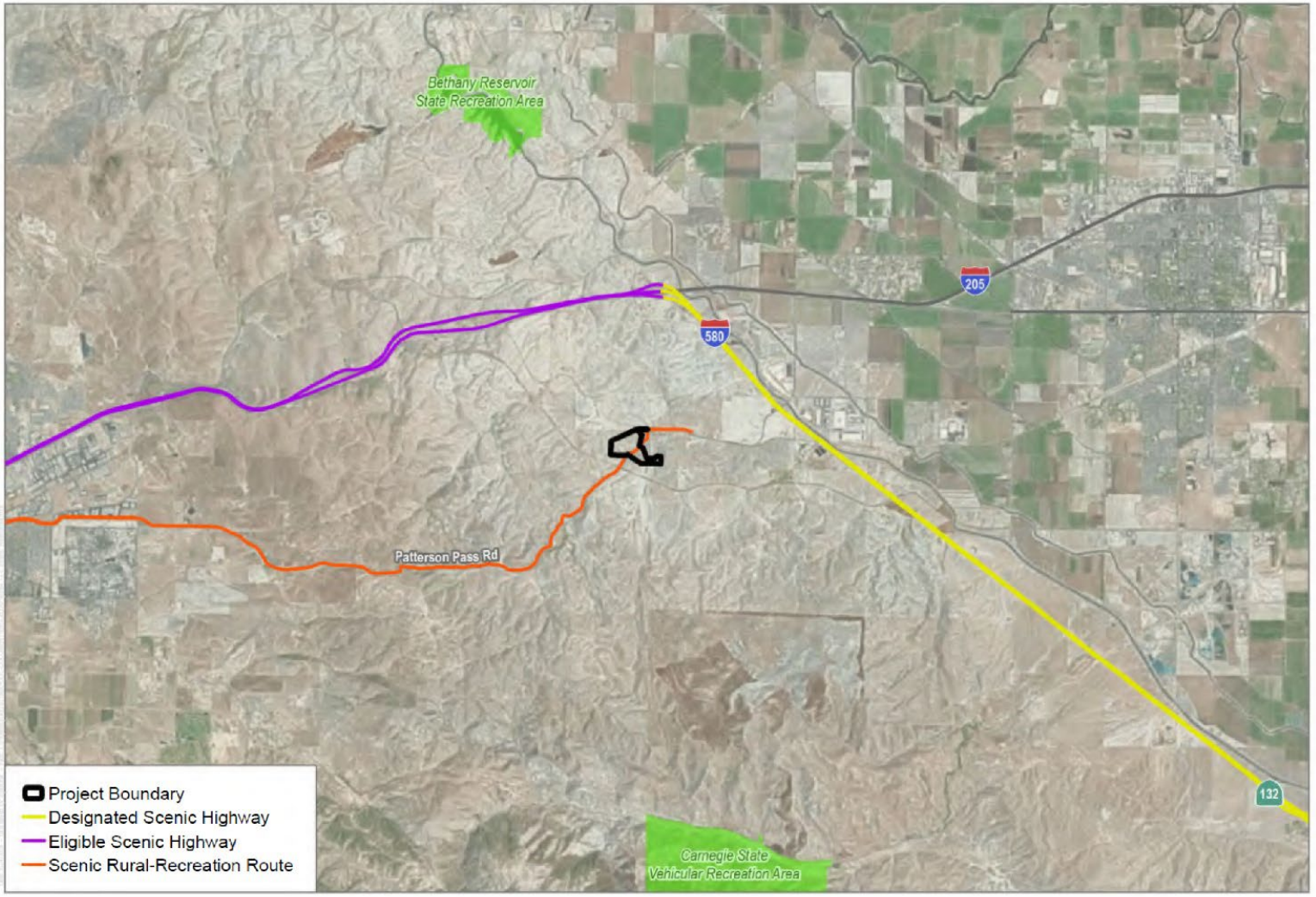
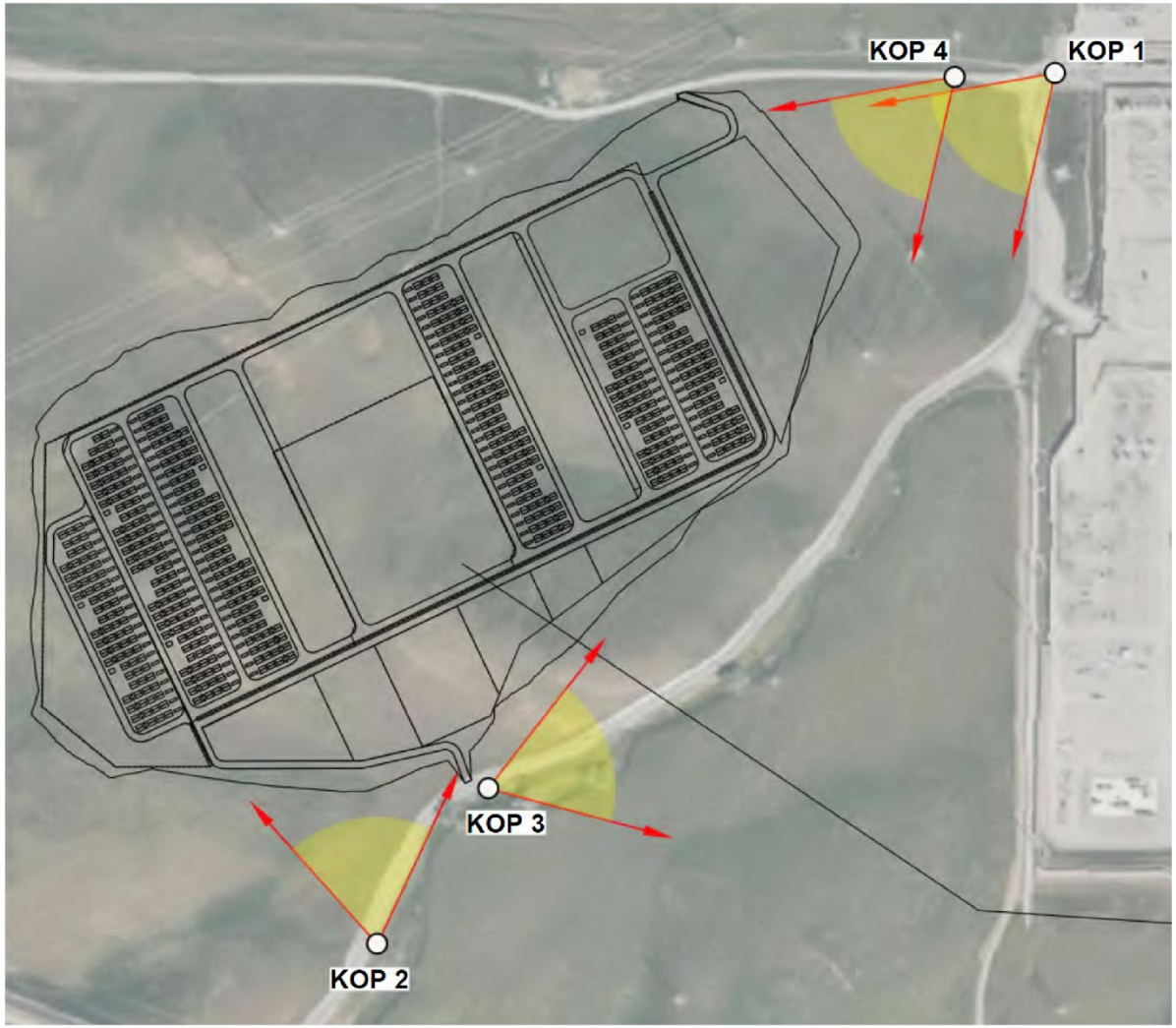


Figure 5.15-1
Scenic Resources

Sources: Potentia-Viridi Energy Storage Project, Data Request Response 2, Attachment 6, Revised Section 3-13, Visual Resources, Figure 3.13-1; docketed January 29, 2025 (TN #261409)



5.15-2
Key Observation Point (KOP) Locations

Sources: Data Request Response 2, Attachment 6, Revised Visual Resources Section 3-13, Figure 3.13-2: KOP Locations, docketed January 29, 2025 (TN #261409)



5.15-3A
KOP 1 View of the Existing Physical Condition

Sources: Data Response 2, Attachment 6, Revised Visual Resources Section 3-13, Figure 4.13-3A: KOP 1, Existing Conditions, Patterson Pass Road-Looking Southwest. (docketed January 29, 2025 (TN #261409)



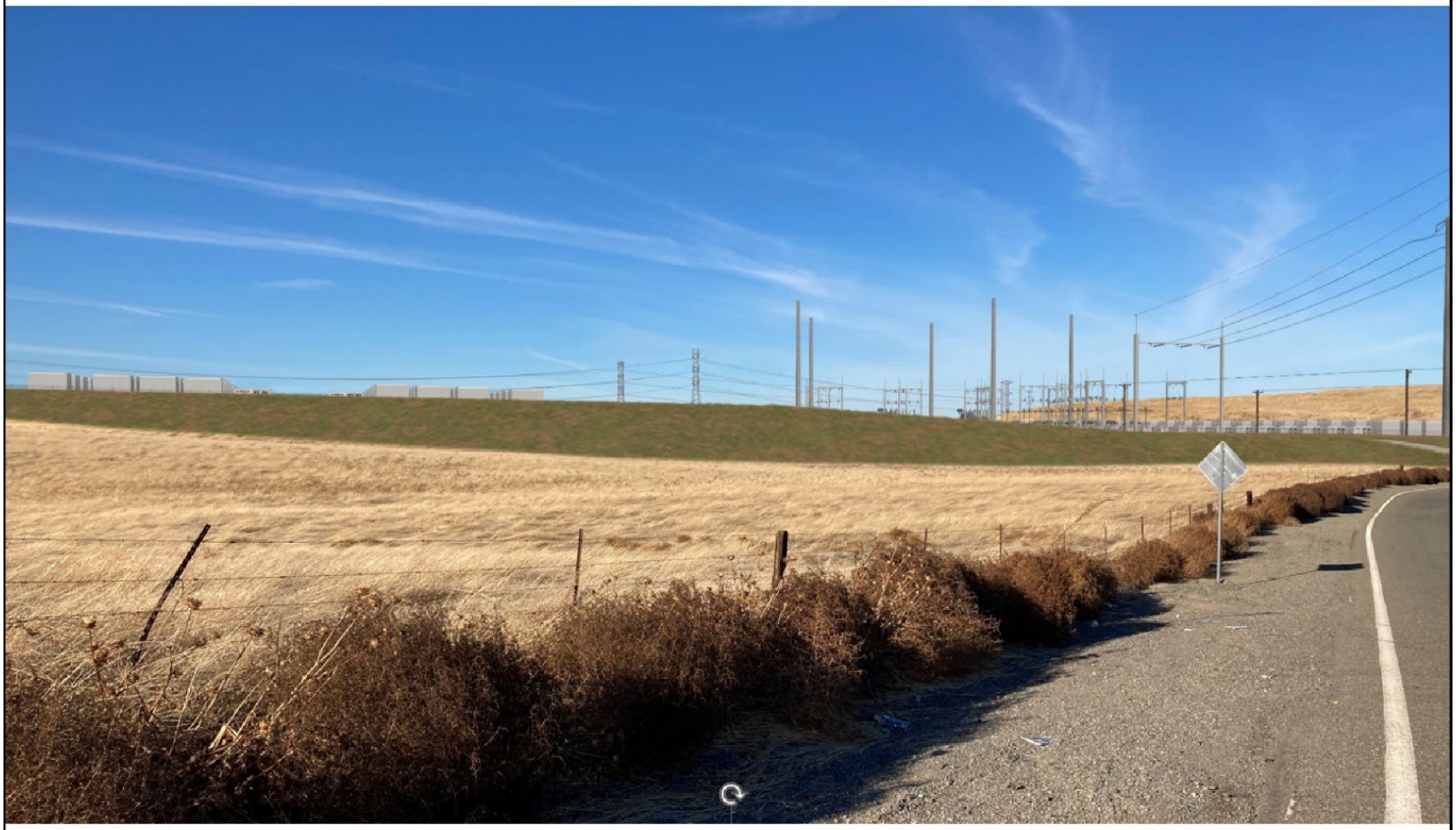
5.15-3B
KOP 1 View of the Existing Physical Condition Plus Proposed Project

Sources: Data Response 2, Attachment 6, Revised Visual Resources Section 3-13, Figure 4.13-4A: KOP 1, Photographic Simulation, Patterson Pass Road-Looking Southwest. (docketed January 29, 2025 (TN #261409)



5.15-4A
KOP 2 View of the Existing Physical Condition

Sources: Data Response 2, Attachment 6, Revised Visual Resources Section 3-13, Figure 4.13-3B: KOP 2, Existing Conditions, Patterson Pass Road-Looking North. (docketed January 29, 2025 (TN #261409)



5.15-4B
KOP 2 View of the Existing Physical Condition Plus Proposed Project

Sources: Data Response 2, Attachment 6, Revised Visual Resources Section 3-13, Figure 4.13-4B: KOP 2, Photographic Simulation, Patterson Pass Road-Looking North. (docketed January 29, 2025 (TN #261409)



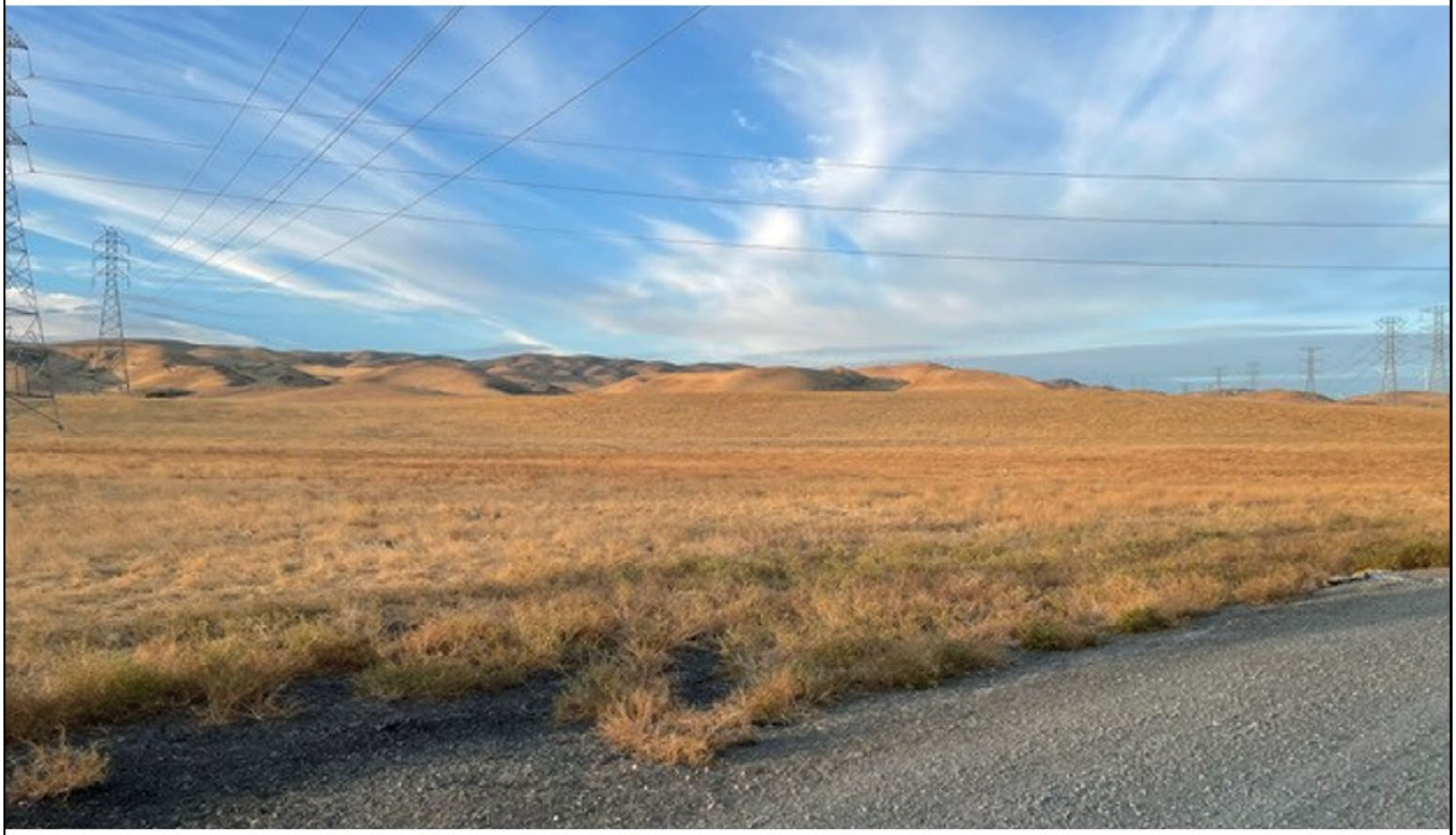
5.15-5A
KOP 3 View of the Existing Physical Condition

Sources: Data Response 2, Attachment 6, Revised Visual Resources Section 3-13, Figure 4.13-3C: KOP 3, Existing Conditions, Patterson Pass Road-Looking Northeast. (docketed January 29, 2025 (TN #261409)



5.15-5B
KOP 3 View of the Existing Physical Condition Plus Proposed Project

Sources: Data Response 2, Attachment 6, Revised Visual Resources Section 3-13, Figure 4.13-4C: KOP 3, Photographic Simulation, Patterson Pass Road-Looking Northeast. (docketed January 29, 2025 (TN #261409)



5.15-6A
KOP 4 View of the Existing Physical Condition

Sources: Data Response 2, Attachment 6, Revised Visual Resources Section 3-13, Figure 4.13-3D: KOP 4, Existing Conditions, Patterson Pass Road-Looking North. (docketed January 29, 2025 (TN #261409)



5.15-6B
KOP 4 View of the Existing Physical Condition Plus Proposed Project

Sources: Data Response 2, Attachment 6, Revised Visual Resources Section 3-13, Figure 4.13-4D: KOP 4, Photographic Simulation, Patterson Pass Road-Looking North. (docketed January 29, 2025 (TN #261409)

Light and Glare

d. Would the project "create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?"

Project Components Within CEC's Opt-In Certification and Components Outside CEC's Opt-In Certification

The proposed project would be constructed on an approximately 58.8-acre portion of an approximately 70-acre lease area in unincorporated eastern Alameda County, California. An additional 1.9 acres of adjacent land are expected to be disturbed for installation of the transmission and interconnecting facilities. The site consists of fallow, annual grasslands suitable for grazing. The proposed project site and gen-tie route area are adjacent to Tesla Substation.

Construction of the proposed project would generally occur during daytime hours. However, at limited times, some construction activities may be required at night while electrical demand is low, and these activities would require lighting for safety. Temporary, portable lighting would be used to illuminate work areas if nighttime construction activities are required. The laydown yard may also be lit for security during construction.

Permanent, operational lighting would only be in areas where it is required for safety, security, or operations. As described in the attached Conceptual Outdoor Lighting Control and Management Plan (**Appendix 5.15A**), low-elevation (less than 14 feet), controlled security lighting would be installed at the proposed project substation and around the BESS yard. Permanent, motion-sensitive, directional security lights would be installed to provide adequate illumination around the substation area and points of ingress/egress. Portable lighting may be used occasionally and temporarily for maintenance activities during operations, such as emergency work that must occur at night. It is not anticipated that any new structure lighting would be installed as part of the proposed gen-tie line, with the exception of FAA hazard lighting that may be required for some structures. FAA hazard lighting, if required, would consist of either red flashing lights; medium-intensity white flashing lights; high-intensity white flashing lights; or dual lighting consisting of red lights for nighttime and medium-intensity, white lights for daytime.

All lighting would be shielded and directed downward and inward (toward the work or laydown area), away from potentially sensitive receptors (travelers on Patterson Pass Road and nearby residents) to minimize the potential for glare, spillover onto adjacent properties, and skyglow. However, reflectance can still occur from exterior surfaces of buildings, structures, and equipment as all surfaces reflect light.

Therefore, light, glare, and reflectance emitted from the proposed project were assessed to determine if each would create an adverse effect to the existing physical environment off site and skyward (light pollution and reflectance).

Light Pollution

"Light pollution is the human-made alteration of outdoor light levels from those occurring naturally." (DarkSky, 2024) Light pollution "occurs when outdoor lighting is misdirected, misplaced, unshielded, excessive or unnecessary. As a result, light spills unnecessarily upward and outward, causing glare, light trespass, and a nighttime urban 'sky glow' overhead, indicating wasted energy and obscuring the stars overhead," and clutter.[17] (Dark Sky Society, 2024)

DarkSky International (formerly the International Dark-Sky Association) is a recognized worldwide authority in combating light pollution. DarkSky International recognizes to minimize the harmful effects of light pollution. Lighting should: only be on when needed; only light the area that needs it; be no brighter than necessary; minimize blue light emissions;[18] and be fully shielded.[19]

The DarkSky International "DarkSky Approved" program offers luminaires that significantly reduce light pollution and minimize nocturnal habitat disruption. The DarkSky Approved program provides an objective, third-party certification for lighting-related products that minimize glare, reduce light trespass, and preserve the natural night sky.[20] Outdoor luminaires certified by the program incorporate features such as shielding, no uplight allowance (BUG Rating U0[21]), dimming capabilities to one percent of their full rating, and emission control that limits visible light in the 380 to 520 nanometers (nm)[22] range to no more than seven percent.[23]

Artificial Light and Nocturnal Creatures. "Scientific evidence suggests that artificial light at night has negative and deadly effects on many creatures, including amphibians,

17 Clutter is the bright, confusing, and excessive grouping of light sources.
18 Studies show exposure to blue light can cause eye strain, fatigue, headaches, and sleeplessness.
19 "Fully shielded" means a luminaire constructed in a manner that all light emitted from the fixture, either directly from the lamp or a defusing element, or indirectly by reflection or refraction from any part of the luminaire is projected below the horizontal plane, as determined by a photometric test or certified by the manufacturer.
20 To see a list of DarkSky Approved products, manufacturers, and retailers visit the DarkSky International website <www.darksky.org>.
21 "A BUG Rating stands for backlight, uplight, and glare. Backlight (B) is the light directed behind the fixture, uplight (U) is any light directed upward above the horizontal plane of the luminaire, and glare (G) is the amount of light emitted from the luminaire at high angles. The backlight, uplight, and glare ratings are assigned a value between 0 and 5 (with lower on the scale being more desirable) depending on the maximum amount of light in these zones based on thresholds defined by the Illuminating Engineering Society (IES) and enforced by the International Dark-Sky Association (IDA)" [now named DarkSky International].
22 The human eye can view the segment of the electromagnetic radiation spectrum wavelengths between 380 to 700 nanometers. This segment is known as "visible light."
23 The human eye can view the segment of the electromagnetic radiation spectrum wavelengths between 380 to 700 nanometers. This segment is known as "visible light."

birds, mammals, insects, and plants.… Predators use light to hunt, and prey species use darkness as cover."[24]

"Keeping the light LOW (mounting the fixture as low as possible) and SHIELDED (fully shielding the light so bulbs and/or glowing lenses are not visible) cuts down on the amount of glare and light visible to the animals, so that there is less opportunity for them to get trapped, repelled, or have their day/night patterns altered. Keeping the light LONG wavelength (ambers and reds) actually makes the light that is visible seem dimmer to nocturnal animals that primarily use rod vision. The rod system's peak sensitivity is at 496 nm [nanometers], so a low-pressure sodium light, with its emitted light at 589 nm, should seem 1/10th as bright to an animal using purely rod vision vs. an animal that uses rods and cones to see." (FFWCC, 2024)

"Some Institutes and even cities have adopted a "Lights Out" program in which exterior lighting as well as interior lights in tall buildings are dimmed or turned off during periods of bird migration. Bare bulbs or upward pointing lights are replaced with hooded fixtures that only shine downward. If lights can't be turned off, then use flat lens, and reduce the number of lights and intensity. Both the height of the pole and the intensity of the lamp should be adjusted to only direct light where needed...." (NIEHS 2015)

Safety and Security Lighting. "Each organization should ensure a minimum level of light for their respective property areas that complies with all applicable regulations and industry guidelines. Security lighting requirements should be specified by a lighting engineer. Ideally, lighting requirements will be identified as part of a security survey. The lighting program should consider the following:

- Lighting should not illuminate security/protection officers or patrols. Where security patrols cannot be kept out of the zones of illumination, a judgment must be made between the advantages of the lighting and the reduction in patrol effectiveness.
- Lighting must be combined with surveillance. The deterrent effect of lighting depends on the fear of detection. This may also require video surveillance or security/protection officers on static posts and mobile patrols.
- Lighting must not cause nuisances or hazards to neighbors, such as light pollution or light trespass. Lighting may adversely affect adjoining or adjacent properties such as residential properties, roadways, airports, harbors, neighboring commercial buildings, or properties.
- Lighting must be cost-effective and compatible with site conditions. It may not be economical to illuminate very large areas. Take into account both the existing lighting outside the perimeter and the lighting installed within the site for operational or safety purposes." (Fenelly and Perry, 2017)

24 DarkSky International maintains an Artificial Light at Night (ALAN) Database. It provides the latest scientific literature on how light pollution affects wildlife. (DarkSky 2024)

Reflectance

Reflectance is the proportion of perpendicular incident light reflected from the surface or body of a material. All surfaces reflect light. Light reflects off the surface in a very predictable manner.

"Reflectivity is defined as the property of a material to reflect the light or radiation. It is a measurement of reflectance irrespective of the thickness of a material." (Electrical4U, 2020)

Exterior surface coatings and materials that diffuse illumination or collection, reflectance, and scattering are of utmost importance. "An ideal coating is non-specular (to decrease geometrical effects) durable, high in reflectance and spectrally flat over a wide wavelength range to give a flat spectral response in input or output." (Labsphere, Inc., 2024) Materials with a non-shiny, textured or matt/powder finish are preferable to glossy or shiny finishes. A few examples of materials and surface treatments that should be avoided if possible: any material with a reflectance greater than 35 percent; any shiny, highly reflective materials even for small surfaces; large smooth surfaces; and large expanses of glass.

The Master Painters Institute (MPI) provides guidelines and standards for the architectural paint and coatings sector in the United States and Canada. "In order to provide Coatings Specifiers with a common language to describe Paint Finishes, MPI includes GLOSS and SHEEN measurements as part of the criteria for many of its MPI category specifications. MPI specifies the following seven GLOSS levels" (Rodda Paint Company, 2024):

- Gloss Level 1 – Flat (traditional matte finish)
- Gloss Level 2 – Satin/Pearl (high side sheen Flat, "Velvet-like" finish)
- Gloss Level 3 – Eggshell (traditional "Eggshell-like" finish)
- Gloss Level 4 – Low Gloss ("Satin-like" finish)
- Gloss Level 5 – Semi Gloss (traditional Semi-Gloss)
- Gloss Level 6 – Gloss (traditional Gloss)
- Gloss Level 7 – High Gloss (High Gloss)

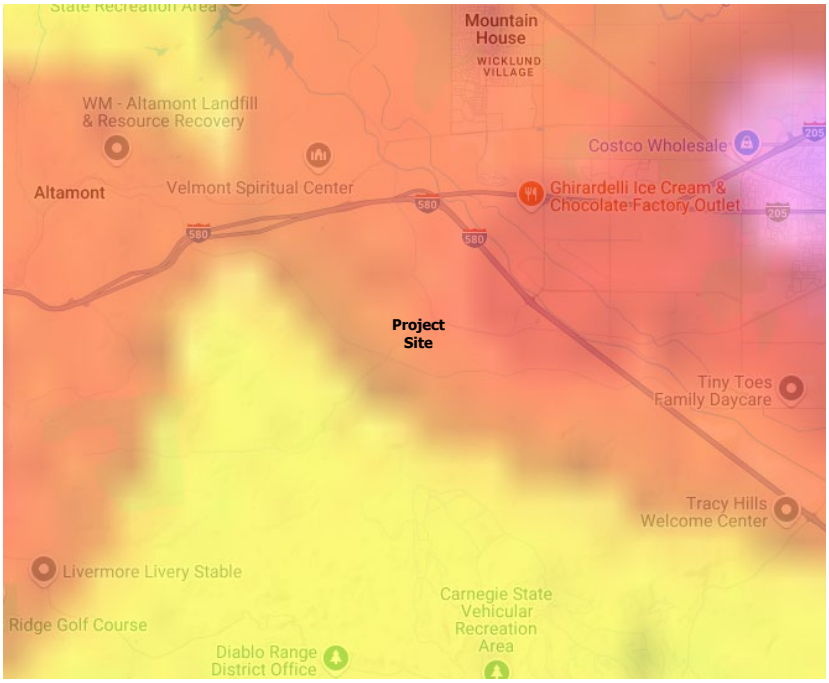
Construction and Operation of Permanent Facility

Less-Than-Significant Effect With Mitigation (Conditions of Certification) Incorporated. The proposed project would be constructed on an approximately 58.8-acre portion of an approximately 70-acre lease area in unincorporated eastern Alameda County, California. An additional 1.9 acres of adjacent land are expected to be disturbed for installation of the transmission and interconnecting facilities. The site consists of fallow,

annual grasslands suitable for grazing. The proposed project site and gen-tie route area are adjacent to Tesla Substation.

Given the existing physical environment, there is very little nighttime emission of artificial light, and during daytime very little reflectance. Specifically, as previously noted, except for the adjacent Tesla Substation, the landscape surrounding the proposed project is primarily agricultural land use and, therefore, has limited sources of artificial light at nighttime. However, the nighttime viewing conditions are influenced by existing lighting from the adjacent Tesla Substation, FAA hazard lights on the wind turbines visible along the horizon to the west, and the few rural residences. No street lighting exists along nearby highways or local roadways. However, intermittent/ temporary lighting from cars and trucks is present along highways and local roadways including the adjacent (to the proposed project site) Patterson Pass Road and more distant I-580 and I-205.

CEC staff reviewed the "World Atlas Night Sky Brightness" interactive map given the location of the proposed project. The map delineates physical radiance (brightness) homogeneously over an area from a relative location by color levels (a light pollution map).[25] See **Visual Resources Figure 5.15-7**. It shows brightness in the general area to be relatively high (C7 Suburban/urban transition on the Bortle Scale).



Visual Resources Figure 5.15-7 Night Sky Brightness

The map shows night sky brightness emitted in the proposed project and surrounding area, which is rated C7 Suburban/ Urban Transition on the Bortle scale (orange color). The yellow area is rated C5 Suburban Sky (slightly darker, or less emitted illumination by artificial light) and the pink area in the upper right is rated C8 City Sky (brighter).

Source: "World Atlas Night Sky Brightness," Dark Sky Map: Best Locations for Stargazing, https://www.darkskymap.com/nightSkyBrightness, accessed on May 8, 2025.

25 The "World Atlas Night Sky Brightness" is an interactive map which delineates physical radiance homogeneously over an area from a relative location by color levels provided on The Dark Sky Map: Best Locations for Stargazing website <https://www.darkskymap.com/nightSkyBrightness>. (Dark Sky Map 2025)

A project-specific conceptual lighting plan for the BESS yard and access roads is provided as **Appendix 5.15A**, Conceptual Outdoor Lighting Control and Management Plan. As proposed, approximately 166 permanent, motion-sensing, and downward-directed LED light fixtures would be installed atop poles to provide illumination of the access roads and the internal BESS yard and substation. An additional 28 wall-mounted LED light fixtures would provide illumination around the exteriors of the three operations and maintenance buildings. All proposed project light fixtures are to be motion-sensitive, shielded, and directed downward to minimize the potential for glare, spillover onto adjacent properties, and skyglow. As stated in the AFC, levels of individual lighting sources would comply with recommendation of the Illuminating Engineering Society to ensure lighting is no brighter than necessary.

Alameda County General Plan, ECAP, Sensitive Viewsheds Policy 115 states that "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."

All proposed project access road, BESS yard, and substation lighting would be installed consistent with the Policy 115 requirements. Additionally, the luminaries would be fully shielded (BUG Rating U0) and have the International Dark-Sky Association Fixture Seal of Approval per Condition of Certification (COC) COC/MM **VIS-3** Night Lighting Management.

The finishes of materials proposed to be used as exterior surfaces include dulled, metallic components that are coated with surface treatments that would be predominantly flat and non-reflective to minimize the potential for glare. Further information on the materials used for the exterior proposed project components is listed in **Table 5.15-1** above.

Conclusion(s)

Although construction night lighting is expected to be infrequent and short-term, any new artificial light traversing off the proposed project site and the construction laydown area(s) in the existing physical environment during night-time has the potential to create light trespass that would be a potentially significant effect on the environment.

Bright, night lighting could disturb wildlife using areas adjacent to the proposed project site such as nesting birds, foraging mammals, and flying insects. Night lighting also is suspected to attract migratory birds to areas and, if the lights are on tall structures or tall structures are near the lights, collisions could occur. Additionally, certain lighting may attract insects which, in turn may attract birds and bats to forage, increasing the potential for collisions.

The Opt-In application contains statements demonstrating the intent to implement shielding, directional light, non-reflectance materials, and other light pollution and reflectance facility design measures, which have been incorporated and expanded in CEC staff's proposed COCs.

Shielding is a key element in night-sky-friendly lighting. Fully shielded fixtures, also known as "full-cutoff" fixtures are the gold standard. No light escapes upward or outward, and a passerby is not blinded by the glare from an exposed bulb.

The applicant has also supplied renderings of the facility that show a majority of the components would have a light or dark grey color.

CEC staff concludes that the level of new light, glare, and reflectance emitted by the proposed project and from the construction laydown area(s) in the existing landscape would have a *less-than-significant effect on the environment* with imposition and implementation of the CEC staff-proposed COCs shown under 5.15.5 Proposed Conditions of Certification (see Conditions of Certification (COCs) **VIS-1** and **VIS-3**).

5.15.2.3 Cumulative Impacts

Cumulative impacts of the proposed project must be discussed if the incremental effect of the project, combined with the effects of other projects, is "cumulatively considerable" (14 CCR § 15130[a]).

In accordance with CEQA Guidelines, section 15130(b), "… the discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the proposed project alone. The discussion should be guided by standards of practicality and reasonableness and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact." (Cal. Code Regs., tit. 14, § 15130[b])

"Where a lead agency is examining a project with an incremental effect that is not 'cumulatively considerable,' a lead agency need not consider that effect significant, but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable." (Cal. Code Regs., tit. 14, § 15130[a])

Figure A-1 provides a map of the identified cumulative projects. Of those projects, there are two, the Mulqueeney Ranch Wind Repowering Project (No 1) and the Griffith Energy Storage Project (No. 2) that are located sufficiently close to the proposed project such that the incremental effects of construction activities attributable to the proposed project could become cumulatively considerable if construction activities at either or both of the two cumulative project sites were to occur at the same time, or before or after construction of the proposed project. Both cumulative projects are presently under construction. Construction of these projects is expected to be completed before commencement of construction of the proposed project. Construction activities including the use, storage, and movement of equipment and materials, and night lighting on or from these two sites may combine with activities, equipment operation, and night lighting on the proposed project site. The construction activities may lead to a continued presence of construction activity including light emissions in the immediate area for several years.

Similarly, with respect to proposed project operation, only the two cumulative projects identified above would be close enough to potentially contribute to a cumulatively considerable impact with the proposed project. Like the proposed project, cumulative project No. 2 would also be an energy storage project and would likely exhibit visual characteristics similar to the proposed project. While structurally different, cumulative project No. 1 would share some of the slim, linear forms; prominent, vertical lines; and industrial characteristics of some of the proposed project features and would be visible within the same field of view as the proposed project when traveling westbound on Patterson Pass Road. Therefore, daytime visibility of the three projects (collectively) could result in cumulatively considerable aesthetics effects including the perception of the increased industrialization of the landscape along this portion of Patterson Pass Road, even with implementation of COC/MM **VIS-1** and COC/MM **VIS-2**. Therefore, for the purpose of the CEQA Guidelines, CEC staff concludes for "Aesthetics" that the proposed project would have a *significant cumulative effect on the environment* with respect to the degradation of the existing visual character or quality of public views of the site and its surroundings.

The collective night lighting from these three projects does have the potential to result in a cumulatively considerable night lighting impact for both construction and operation. However, CEC staff concludes that with implementation of COC/MM **VIS-1** and COC/MM **VIS-3**, the incremental night lighting effects contribution of the proposed project would not be cumulatively considerable. Therefore, for the purpose of the CEQA Guidelines, CEC staff concludes for "Aesthetics" that the proposed project would have a *less-than-significant cumulative effect on the environment* with respect to the creation of a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.

5.15.3 Project Conformance with Applicable LORS

Table 5.15-2 provides CEC staff's determination of conformance with applicable LORS including any proposed COCs/MMs, where applicable, to ensure the proposed project components within the CEC's Opt-In certification would conform with LORS. As shown in this table, CEC staff concludes that with implementation of specific COCs/MMs, the proposed project would not conform with all applicable LORS. The subsection below, "5.15.5 Proposed Conditions of Certification," contains the full text of the referenced COCs.

TABLE 5.15-2 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
State	
California Scenic Highway Program. Section 263 of the Streets and Highways Code, the "State Scenic Highway System List," provides a list of highways that have been either officially designated or are eligible for designation as a state scenic highway.	**Yes.** The "State Scenic Highway System List" shows the proposed project site is not along a designated state scenic highway. Applies to the operational phase of the project.
Local	
Alameda County General Plan	
Scenic Route Element. **Principles That Apply to Scenic Route Corridors:**	
Provide for Normal Uses of Land and Protect Against Unsightly Features. In both urban and rural areas, normally permitted uses of land should be allowed in scenic corridors, except that panoramic views and vistas should be preserved and enhanced through supplementing normal zoning regulations with special height, area, and side-yard regulations; through providing architectural and site design review; through prohibition and removal of billboards, signs not relevant to the main use of the property, obtrusive signs, automobile wrecking and junk yards, and similar unsightly development or use of land. Design and location of all signs should be regulated to prevent conglomerations of unsightly signs along roadsides.	**Yes.** The proposed project would not include any billboards, signs not relevant to the main use of the property, obtrusive signs, automobile wrecking and junk yards, and similar unsightly development. While the proposed project would exhibit substantial industrial features, these characteristics would be consistent with those of other adjacent and nearby energy and utility facilities. Applies to the operational phase of the project.
Locate Transmission Towers and Lines Outside of Scenic Route Corridors When Feasible. New overhead transmission towers and lines should not be located within scenic corridors when it is feasible to locate them elsewhere.	**Yes.** The proposed 500-kV, above-ground gen-tie line is required to transmit electrical energy to and from the proposed project substation to the existing PG&E Tesla Substation. The gen-tie line would need to cross Patterson Pass Road (a Scenic-Rural Recreation Route) in order to connect to Tesla Substation. As such, it is not feasible to locate the gen-tie line outside of the scenic corridor. However, the proposed project was sited adjacent to Tesla Substation to reduce the required length of the gen-tie line, and in so doing, helps to minimize the proliferation of linear facility rights-of-way across the landscape visible from Patterson Pass Road. Applies to the operational phase of the project.
Underground Utility Distribution Lines When Feasible; Make Overhead Lines Inconspicuous. New, relocated or existing utility distribution lines should be placed underground whenever feasible. When it is not feasible to place lines underground, they should be located so as to be inconspicuous from the scenic route. Poles of an improved design should be used wherever possible. Combined or adjacent rights-of-way and common poles should be used wherever feasible.	**Yes.** It is not feasible to locate the proposed gen-tie line underground. However, the proposed project was sited adjacent to Tesla Substation to reduce the required length of the gen-tie line (five poles), and in so doing, helps to minimize the proliferation of linear facility rights-of-way across the landscape visible from Patterson Pass Road. Additionally, the five tubular steel poles that would comprise the gen-tie line would have thin profiles and would be visually compatible with the steel, lattice

TABLE 5.15-2 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
	transmission towers currently located in the immediate proposed project vicinity, while exhibiting less industrial character compared to the existing lattice designs. Applies to the operational phase of the project.
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.	**Yes.** Graded slopes adjacent to the proposed project development footprint and temporary impact areas would be reseeded to mimic the existing grassland conditions as described in the Revegetation and Habitat Restoration Plan (**Appendix 5.15B**). The reseeded areas would help the proposed project to better blend with the grasslands and grass-covered hill slopes that surround the proposed project site. Applies to the operational phase of the project.
Principles That Apply to Areas Beyond the Scenic Route Corridors **Preserve and Enhance Natural Scenic Qualities in Areas Beyond the Scenic Corridor.** Views from scenic routes will comprise essentially all of the remainder of the county beyond the limits of the scenic corridor. The corridor is intended to establish a framework for the observation of the views beyond. Therefore, in all areas in the county extending beyond the scenic route corridors, scenic qualities should be preserved through retaining the general character of natural slopes and natural formations, and through preservation and enhancement of water areas, water courses, vegetation and wildlife habitats. Development of lands adjacent to scenic route corridors should not obstruct views of scenic areas and development should be visually compatible with the natural scenic qualities.	**No.** The proposed project would introduce utility infrastructure and other above-ground project components onto an undeveloped site, resulting in substantial visual impacts to the landscape when viewed from Patterson Pass Road. However, it should be noted that the proposed project components would only partially obstruct views of the surrounding agricultural lands or hillside areas, none of which have been identified as scenic areas. Furthermore, the proposed project components that would be visible would be similar in terms of height, bulk, scale, and visual character to the existing infrastructure already visible in the proposed project site vicinity, including nearby steel-lattice transmission towers, the adjacent Tesla Substation, and distant wind turbines. Applies to the operational phase of the project.
Provide for Normal Uses of Land but Limit Overhead Utilities and Outdoor Advertising Structures. In both developed and undeveloped areas, outdoor advertising structures, utility and communication towers, poles, and wires should be located only where they will not detract from significant scenic views. All other structures and use of land should be permitted as specified in the local zoning ordinance as supplemented by special height regulations.	**Yes.** The proposed project does not include outdoor advertising structures. Furthermore, the five gen-tie structures and their associated conductors would cause only limited obstruction of the surrounding landscapes, and none of the views of those landscapes have been identified as "significant scenic views." Applies to the operational phase of the project.
Alameda County General Plan, Scenic Route Corridor Development Standards:	
• In corridors along scenic routes with outstanding distant views above the roadbed, no building structure of more than one story in height should be permitted where it would obstruct views, excepting within and immediately adjacent to central business district locations. On lots where the building structure is higher than the roadbed in corridors along routes with outstanding distant	**Yes.** There are no "outstanding distant views" from the portion of Patterson Pass Road in the immediate vicinity of the proposed project site. Therefore, the proposed project would not obstruct any such views. Also, the proposed project does not include any building structures more than one story in height, though the proposed project does include taller vertical

TABLE 5.15-2 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis For Determination
views, the combined width of sideyards should equal or exceed the width of the building structure as measured parallel to the roadbed.	elements associated with the substation and the gen-tie line, proposed project components that would appear similar to other utility facilities in the immediate vicinity of the proposed project site. Applies to the operational phase of the project.
• In all zoning districts where the allowable height limit exceeds 35 feet, each proposed structure over 35 feet except utility poles and lines, should be reviewed by the local jurisdiction for approval to ensure that such structure will not conflict with any view from any scenic route.	**Yes.** There are no "outstanding distant views" from the portion of Patterson Pass Road (a Scenic-Rural Recreation Route) in the immediate vicinity of the proposed project site. Therefore, the proposed project would not obstruct any such views. Also, while the proposed project does include some structures more than 35 feet in height, these are limited to the electrical components of the substation and the utility poles associated with the gen-tie line, proposed project components that would appear similar to other utility facilities in the immediate vicinity of the proposed project site. Applies to the operational phase of the project.
• Alteration to natural or artificial land contours should not be permitted without a grading permit issued by the local jurisdiction as a means of preserving and enhancing the natural topography and vegetation in developable areas. Mass grading should not be permitted. The following criteria should be applied in the review of grading permits in developable areas:	**Yes.** Graded hillside areas adjacent to the development footprint would be reseeded with native plant species to mimic the existing grass-lands and grass-covered hill slopes that surround the proposed project site. Additionally, the applicant has prepared a Revegetation and Habitat Restoration Plan (**Appendix 5.15B**) to help ensure that grading required for the pro-posed project would not substantially damage the existing topography, thereby helping to pre-serve the visual integrity of the proposed project site's hillside areas. Applies to both the con-struction and operational phases of the project.
○ As a means of preserving natural "ridge skylines" within the county, no major ridgeline construction of individual dwellings should be permitted as approved on the site development review.	**Yes.** The proposed project would not be constructed along a ridgeline. Applies to the operational phase of the project.
○ Access roads should be located and designed to keep grading to a minimum.	**Yes.** Access roads are relatively limited and designed to take advantage of two adjacent roads – Patterson Pass Road and the private gravel access road (to a nearby wind energy facility). Applies to the operational phase of the project.
○ Natural ground contours in slope areas over 10 percent should not be altered more than 5 percent overall, except in such slope areas where large stands of mature vegetation, scenic natural formations or natural watercourses exist, where grading should be limited so as to preserve the natural features.	**Yes.** Grading required for the proposed project has been designed so that the integrity of the existing topography and natural features would be maintained. Applies to both the construction and operational phases of the project.
• Any contour altered by grading should be restored by means of land sculpturing in such a manner as to minimize run-off and erosion problems, and	**Yes.** The grading plan would generally follow the existing contours of the site and the grading of any sloped areas in excess of 25 percent

TABLE 5.15-2 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
should be planted with low maintenance, fire-resistant plant materials that are compatible with the existing environment.	would be kept to a minimum. Additionally, any graded slopes adjacent to the development footprint would be reseeded with native plant species to mimic the existing vegetated conditions. Applies to both the construction and operational phases of the project.
Alameda County General Plan. Open Space Element Principles.	
• **Include Natural Ridgelines and Slope Areas:** Natural ridgelines and slopes in excess of 25 percent in grade should be left as open space to eliminate mass grading.	**Yes.** The proposed project site would require minimal grading of any sloped areas in excess of 25 percent. However, the proposed project site is not in the vicinity of any ECAP-designated visually sensitive ridgelines. Regarding on-site hillside areas, the grading plan would generally follow the existing contours of the site and graded slopes adjacent to the development footprint would be reseeded with native plant species to mimic existing vegetated conditions. Additionally, access roads would be located and designed to keep grading to a minimum. Applies to both the construction and operational phases of the project.
• **Consolidate and Locate Utility Lines to Avoid Scenic Areas:** Wherever feasible, power and pipe utility lines should be consolidated to prevent further severance of open space lands. Utility lines and aqueducts in open space areas should be located so as to avoid areas of outstanding beauty.	**Yes.** By siting the proposed project adjacent to the existing Tesla Substation, the proposed project would consolidate utility lines and avoid further severance of open-space lands. Additionally, the proposed project site is not located in a landscape of "outstanding beauty." Applies to the operational phase of the project.
Alameda County East County Area Plan (ECAP), Land Use, Sensitive Viewsheds. **Goal: To preserve unique visual resources and protect sensitive viewsheds.**	
• **Policy 106:** Structures may not be located on ridgelines or hilltops or where they will project above a ridgeline or hilltop as viewed from public roads, trails, parks and other public viewpoints unless there is no other site on the parcel for the structure or on a contiguous parcel in common ownership on or subsequent to the date this ordinance becomes effective. New parcels may not be created that have no building site other than a ridgeline or hilltop, or that would cause a structure to protrude above a ridgeline or hilltop, unless there is no other possible configuration.	**Partially.** While the proposed project would not be located on a ridgeline or hilltop, some of the taller proposed project components (e.g., gen-tie poles) would project above some of the more distant ridgelines and hilltops when briefly viewed from Patterson Pass Road. However, these proposed project features would be consistent with structural character already established in the landscape by existing electric transmission lines and Tesla Substation. Applies to the operational phase of the project.
• **Policy 108:** To the extent possible, including by clustering, if necessary, structures shall be located on that part of a parcel or on contiguous parcels in common ownership on or subsequent to the date this ordinance becomes effective, where the development is least visible to persons on public roads, trails, parks and other public viewpoint. This policy does not apply to agricultural structures to	**Yes.** The proposed project development would be set back from Patterson Pass Road and clustered toward the interior of the proposed project site. Access roads would be located and designed to keep grading to a minimum. Furthermore, the proposed project would be sited adjacent to Tesla Substation to reduce the length of the proposed gen-tie line and the

TABLE 5.15-2 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis For Determination
the extent it is necessary for agricultural purposes that they be located in more visible areas.	associated visual impacts. Applies to the operational phase of the 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.	**Yes.** Graded slopes adjacent to the proposed project development footprint and temporarily disturbed areas would be reseeded with native plant species to mimic the existing grassland conditions as described in the Revegetation and Habitat Restoration Plan (**Appendix 5.15B**). The reseeded areas would help the proposed project to better blend with the grasslands and grass-covered hill slopes that surround the proposed project site. Applies to the operational phase of the project.
• **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.	**No.** As discussed in Section 5.15.2.2, the proposed project would substantially degrade the existing visual character and quality of public views of the site and its surroundings, thereby detracting from the natural open space viewed from Patterson Pass Road, a County-designated Scenic-Rural Recreation Route. However, it should be noted that the proposed project components would be clustered toward the interior of the proposed project site and would be similar in terms of height, bulk, and scale to existing infrastructure visible in the proposed project-site vicinity, such as nearby steel-lattice transmission towers, wood-pole utility lines, the adjacent Tesla Substation, and distant wind turbines. Additionally, permanent operational lighting would only be in areas where it would be required for safety, security, or operations. Low-elevation (i.e., less than 14 feet) controlled security lighting would be installed at the proposed project substation and around the BESS yard in accordance with applicable governmental requirements. Also, care would be taken to prevent undue light pollution from the nighttime security lighting. All lighting would be shielded and directed downward to minimize the potential for spillover onto nearby properties as required by applicable codes and regulations. Additionally, implementation of COC/MM **VIS-1** and COC/MM **VIS-3** would reduce the potential nighttime lighting impacts to a less-than-significant level. Applies to the operational phase of the project.
• **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	**Yes.** The grading plan would generally follow the existing contours of the site, and graded slopes adjacent to the development footprint would be reseeded with native plant species to mimic existing vegetated conditions. While access roads would be located and designed to

TABLE 5.15-2 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis For Determination
shall be minimized. To the extent feasible, access roads shall be consolidated and located where they are least visible from public view points.	keep grading to a minimum, and one access road is an existing private, gravel, access road (not accessible to the public), the second access road to the proposed project would connect to Patterson Pass Road (the only public roadway in the vicinity of the proposed project), which would be visible to the public. Applies to both the construction and operational phases of the project.
• **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.	**Yes.** The grading plan would generally follow the existing contours of the site. Graded slopes adjacent to the proposed project development footprint would be reseeded with native plant species to mimic the existing grassland conditions as described in a Revegetation and Habitat Restoration Plan (**Appendix 5.15B**). The reseeded slopes would help the proposed project to better blend with the grasslands and grass-covered hill slopes that surround the proposed project site. Applies to both the construction and operational phases of the project.
• **Policy 118:** The County shall require that grading avoid areas containing large stands of mature healthy vegetation, scenic natural formations, or natural watercourses.	**Yes.** Although the proposed project site includes non-native grasslands, there are no large stands of mature, healthy vegetation (e.g., mature shrubs or trees), scenic natural formations, or natural watercourses. Applies to the construction phase of the project.
• **Policy 119:** The County shall require that access roads be sited and designed to minimize grading.	**Yes.** The grading plan would generally follow the existing contours of the site. Additionally, access roads would be located and designed to keep grading to a minimum, including designing one of the two proposed access roads to connect to an existing private, gravel, access road (not accessible to the public).
• **Policy 120:** The County shall require that utility lines be placed underground whenever feasible. When located above ground, utility lines and supporting structures shall be sited to minimize their visual impact.	**Yes.** It is not feasible to locate the proposed gen-tie line underground. However, the proposed project was sited adjacent to Tesla Substation to reduce the required length of the gen-tie line (five poles), and in so doing, helps to minimize the proliferation of linear facility rights-of-way across the landscape visible from Patterson Pass Road. Additionally, the five tubular steel poles that would comprise the gen-tie line would have thin profiles and would be visually compatible with the steel, lattice transmission towers currently located in the immediate proposed project vicinity, while exhibiting less industrial character compared to the existing lattice designs. Applies to both the construction and operational phases of the project.

TABLE 5.15-2 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
Alameda County East County Area Plan (ECAP), Transportation, Scenic Highways **Goal: To preserve and enhance views within scenic corridors.**	
• **Policy 215:** The County shall manage development and conservation of land within East County scenic highway corridors to maintain and enhance scenic values.	**No.** As discussed in Section 5.15.2.2, the proposed project would substantially degrade the existing visual character or quality of public views of the site and its surroundings when viewed from Patterson Pass Road, a County-designated Scenic-Rural Recreation Route. Applies to the operational phase of the project.

5.15.4 Conclusions and Recommendations

As discussed, explained, and conditioned (see below) in this section, the proposed project would have a *significant effect on the environment* for the purposes of the CEQA Guidelines, Appendix G Environmental Checklist Form, I. "Aesthetics" and would be in at least partial *nonconformance* with several identified LORS relating to aesthetics/visual resources per Public Resources Code section 25525.

CEC staff reviewed current aerial and street view imagery (Google Earth, Google Maps), USGS map information, other area maps, and photographs showing the proposed project site and vicinity. CEC staff also reviewed proposed project site development plans, elevations, drawings, photo-realistic simulations, renderings, etc.

CEC staff conducted an evaluation of the physical change to the existing physical environment by the proposed project and concluded it would be significant.

The proposed project would be constructed on an approximately 58.8-acre portion of an approximately 70-acre lease area in unincorporated eastern Alameda County, California. An additional 1.9 acres of adjacent land are expected to be disturbed for installation of the transmission and interconnecting facilities. The site consists of fallow, annual grasslands suitable for grazing. The proposed project site and gen-tie route area are adjacent to Tesla Substation.

The most publicly visible proposed project structures would include numerous BESS enclosures (20-feet-long, 10-feet-tall, 8-feet-wide); PCS enclosures (22-feet-long, 8-feet-tall, 7-feet-wide); proposed project substation (switch gear, power transformers, lightning arresters; tallest component being 50-feet-tall); three operations and maintenance buildings (100-feet-long, 24-feet-tall, 48-feet-wide); 10,000-gallon fresh water cistern (11.75-feet-diameter, 11.75-feet-tall); 30,000-gallon fire water storage tank (24-feet-diameter, 10-feet-tall); gen-tie transmission line with tubular steel poles (up to 199-feet-tall) and spanning a distance of approximately 2,884 feet to the southeast to connect with the PG&E Tesla Substation; and security fencing (9-feet-tall).

CEC staff evaluated four applicant-submitted KOPs. CEC staff completed a KOP Evaluation Worksheet for each KOP and concluded from three of the four KOPs that given the existing physical environment and observable land use character that the color, form, texture, scale, structure heights, and equipment on the proposed project site cannot be camouflaged, disguised, screened, or exterior-surface coated, colored or finished, nor can setbacks be employed that would mitigate the degrading of the existing visual character or quality of the public view (from Patterson Pass Road) and private view (from the private, gravel, access road) of the site and its surroundings in the near- to medium-term.

Therefore, at three of the four KOPs, the proposed project would create a *significant effect on the environment*. However, despite the impact on views from Patterson Pass Road, the proposed project would still be visually consistent with the existing, adjacent energy generation (wind turbines) and transmission infrastructure (transmission lines and Tesla Substation). CEC staff has also concluded that with implementation of COC/MM **VIS-1** and COC/MM **VIS-2**, the application of surface colors and finishes, combined with the revegetation of temporarily impacted areas, would reduce the proposed project's impact on the visual character or quality of public views of the site and its surroundings from Patterson Pass Road, but not to a level that would be less than significant.

CEC staff also concluded that the proposed project would have the potential to create a new source of substantial light which would adversely affect nighttime views in the area. However, with implementation of COC/MM **VIS-3**, night lighting management steps would reduce the proposed project's night lighting impacts to a level that would be *less than significant*.

CEC staff also concluded that the proposed project's degradation of the existing visual character or quality of the public views, and visibility of a proposed project access road from Patterson Pass Road, would result in partial non-conformance with one Alameda County visual resource policy and complete non-conformance with three Alameda County visual resource policies or principles.

CEC staff has concluded that even with implementation of COC/MMs **VIS-1** through **VIS-3**, the four instances of principle or policy non-conformance would remain. In instances where COCs/MMs are applicable to components outside the CEC's Opt-In Certification, PG&E shall be responsible, under the authority of the CPUC, to implement recommended measures intended to mitigate project impacts.

5.15.5 Proposed Conditions of Certification

If the CEC decides to certify the proposed project, CEC staff recommends the following conditions of certification and mitigation measures COCs/MMs, covering project components within the CEC's Opt-In Certification and project components outside the CEC's Opt-In Certification.

COC/MM VIS-1 Structural Surface Treatments The project owner shall use exterior surface coatings, colors, finishes, materials, and a gloss level that diffuses illumination or collection, reflectance and scattering off site and skyward from the exterior surfaces of the project buildings, structures, and equipment, and specifically include:

a. An exterior surface coating, color, finish, material, and gloss level that minimizes contrast and does not introduce specular reflection in the existing physical landscape.

b. An exterior surface coating, color, finish, material, and gloss level that is in conformance with applicable adopted architectural design and site development-related policies and ordinances of Alameda County.

The project owner shall submit to the CEC compliance project manager (CPM) for approval an exterior surface coatings, colors, finishes, and materials plan for the project buildings, structures, equipment, and screening structures that satisfies the above requirements and includes the following.

a. A list of the large/major buildings, equipment, structures; perimeter wall and/or fence; other screening structures; transmission line towers and/or poles; and a list of their proposed exterior surface coatings, colors, finishes, and materials identified by vendor, name and number, in accordance with the RAL color matching system or similar universal designation system.

b. Supply one set of brochures showing coating/color chips and/or samples of the coatings, colors, finishes, and materials to be applied/installed to buildings, equipment, and structures.

c. A time schedule for the completion of the application/installation of the coatings, colors, finishes, and materials.

d. A maintenance plan that includes procedures for the upkeep of the coatings, colors, finishes, and materials for the life of the project.

The project owner shall not purchase product or service from a vendor for the proposed exterior surface coatings, colors, finishes, and materials prior to CPM approval of the exterior surface coatings, colors, finishes, and materials plan.

Verification:

a. The project owner shall submit an exterior surface coating, color, finish, and materials plan to the CPM for approval and simultaneously to the Director of the Community Development Agency for the County of Alameda for review and comment ninety (90) days prior to executing a contract to purchase coatings, colors, finishes, and materials with a vendor. The CPM shall provide the Director of the Community Development Agency at least 30 days to review the plan and provide comments to the project owner and the CPM.

b. If the CPM determines that the exterior surface coatings, colors, finishes, and materials plan requires a revision, the project owner shall provide to the CPM a plan with the specified revision(s) for approval by the CPM before any action or activity with the vendor is executed. Any revision to the plan must be approved by the CPM.

c. Exterior surface coatings, colors, finishes, and materials shall be installed/ applied (completed) on the exterior surfaces of the large/major buildings, equipment, and structures prior to the start of commercial operation.

d. The project owner shall notify the CPM that exterior surface coatings, colors, finishes, and materials of all listed buildings, equipment, and structures has been completed and is ready for inspection. With this notification, the project owner shall supply to the CPM one set of color photographs showing the project from the key observation points evaluated for the project certification and individual color photographs showing the completed exterior surface coatings, colors, finishes, and materials for all project buildings, structures, transmission line structures or poles, screening structures, and any other building, equipment, and structure as requested by the CPM. Color photographs may be electronically filed or manually filed on electronic media.

e. The project owner shall supply a description of the condition (status) of the exterior surface coatings, colors, finishes, and materials for the large/major buildings, equipment, structures, and others as needed for the reporting year in the Annual Compliance Report. The report shall include:

    1. The condition of the exterior surfaces of buildings, equipment, and structures at the end of the reporting year.

    2. A listing of maintenance activities performed during the reporting year.

    3. A tentative time schedule for maintenance activities for the upcoming year.

COC/MM VIS-2 Revegetation and Habitat Restoration Plan The project owner shall plant/install and maintain the native species seed mix as described in the Revegetation and Habitat Restoration Plan (**Appendix 5.15B**).

The project owner shall submit to the CPM for approval and simultaneously to the Director of the Community Development Agency for the County of Alameda for review and comment, a revegetation and habitat restoration plan for the project that satisfies the above requirements and includes the following.

a. The plan shall be presented at a reasonable scale. The plan shall include (at a minimum) descriptions of site preparation, the native seed mix to be installed, erosion control measures, revegetation schedule, maintenance and monitoring plans, performance standards, weed abatement measures, and any irrigation requirements.

b. A maintenance plan that includes procedures for the upkeep of the landscape-related improvements and the irrigation system for the life of the project.

c. A monitoring plan that includes monitoring methods, performance standards, and general site requirements.

Verification:

a. The project owner shall submit a revegetation and habitat restoration plan to the CPM for approval and simultaneously to the Director of the Community Development Agency for the County of Alameda for review and comment ninety (90) days prior to executing a contract to purchase landscaping-related improvements for the project. The CPM shall provide the Director of the Planning Division at least 30 days to review the plan and provide comments to the applicant and the CPM.

b. If the CPM determines the revegetation and habitat restoration plan requires a revision, the project owner shall provide to the CPM a plan with the specified revision(s) for approval by the CPM before any action or activity is executed. Any revision to the plan must be approved by the CPM.

c. The project owner shall notify the CPM when the planting/installation of the vegetative materials have been completed and are ready for inspection. With this notification, the project owner shall supply to the CPM one set of color photographs showing all plantings on the project. Color photographs may be electronically filed or manually filed on electronic media. After inspection, if the CPM requires a modification to an element of the plan (e.g., design, installation, location), the project owner shall have 30 days after receiving the notification to complete the modification and request a follow-up inspection.

d. The project owner shall supply a description of the condition (status) of the plantings/installations (and any needed irrigation activities) and maintenance activities performed during the reporting year in the Annual Compliance Report.

COC/MM VIS-3 Night Lighting Management New outdoor light and glare emitted from the project site and construction laydown area shall not result in light being a pollutant off site and skyward ("light pollution"). The project owner shall include use of luminaires that shall:

a. Only be on when needed;

b. Only light the area that needs it;

c. Illuminate no brighter than necessary;

d. Minimize blue light emissions;

e. Be fully shielded (BUG Rating U0);

f. Be DarkSky International "DarkSky Approved" program products (This requirement would require consultation with SDG&E regarding switchyard lighting that is not planned to be "DarkSky Approved"); and

g. Comply with the applicable adopted outdoor lighting standards of the County of Alameda.

Building off the lighting plans submitted to date (Conceptual Outdoor Lighting Control and Management Plan [TN261421]), the project owner shall submit to the CPM for approval and simultaneously to the Director of the Community Development Agency for the County of Alameda for review and comment, a light pollution control plan or equivalent plan prepared for the project that satisfies the above requirements and includes the following.

a. One set of product brochures and/or printouts (e.g., diagram, drawing) showing and describing the types of outdoor luminaires to be applied/installed to buildings, equipment, structures, and other locations on the project site (lighting schedule).

b. A diagram(s) or drawing(s) of the project site showing the approximate location of the installation/placement of the luminaire and its direction and angle (luminaire location).

Verification:

a. The project owner shall submit a light pollution control plan to the CPM for approval and simultaneously to the Director of the Community Development Agency for the County of Alameda for review and comment ninety (90) days prior to executing a contract to purchase permanent outdoor luminaires for the project. The CPM shall provide the Director of the Community Development Agency at least 30 days to review the plan and provide comments to the project owner and the CPM.

b. If the CPM determines the light pollution control plan requires a revision, the project owner shall provide to the CPM a plan with the specified revision(s) for approval by the CPM before any action or activity with the vendor is executed. Any revision to the plan must be approved by the CPM.

c. The project owner shall notify the CPM when the installation of the luminaires has been completed and is ready for inspection. After inspection, if the CPM requires a modification to a luminaire(s) (e.g., design, installation, location), the project owner shall have 30 days after receiving the notification to complete the modification and request a follow-up inspection.

d. If a light and glare complaint is filed with the project owner, within 48 hours of receiving the complaint, the project owner shall supply the CPM with a completed complaint resolution form report as specified in the Compliance Conditions, a proposal to resolve the complaint, and a time schedule for

resolution. The project owner shall notify the CPM within 48 hours after completing/resolving the complaint.

5.15.6 References

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Key Observation Point Evaluation Worksheets

KOP 1 Patterson Pass Rd. (View Southwest) – Summary Sheet for Worksheet Tables

LANDSCAPE			
Table 3 LANDSCAPE CHARACTER	Aesthetic Aspect		See attached Table 3.
	Perceptual Aspect		
	Basic Design Element		
Table 4 UNITY	**Landscape**	**Rating**	Write the rating selected in the attached Table 4.
	Rarity	**Moderate**	
	Diversity	**Low to Moderate**	
	Detractors	**Moderate to High**	
	Distinctiveness	**Moderate to High**	
	Integrity	**Moderate**	
Table 5 PUBLIC VIEW	**Rating**	**Checkbox**	Check (√) the rating selected in the attached Tables 5 and 6.
	High		
	Moderate		
	Low	**√**	
	None		
Table 6 VISIBILITY	**Dominant**	**√**	
	High		
	Moderate to High		
	Moderate		
	Low to Moderate		
	Low		

PROJECT PROMINENCE			
Table 7 Basic Design Element Contrast			
Basic Design Element	**Rating**	**Weight**	**Points**
Color	Strong = 3	x 3	**6**
	Moderate = 2		
	Weak = 1		
	None = 0		
Form	**Strong = 3**	x 2	**6**
	Moderate = 2		
	Weak = 1		
	None = 0		
Line	Strong = 3	x 1	**2**
	Moderate = 2		
	Weak = 1		
	None = 0		
Texture	Strong = 3	x 1	**2**
	Moderate = 2		
	Weak = 1		
	None = 0		
		Maximum 21 points	**+16**

KOP 1 Patterson Pass Rd. (View Southwest) - Summary Sheet for Worksheet Tables (cont'd)

Table 8 SCALE DOMINANCE				
Rating				**Points**
Dominant	The project is the major object in the landscape and occupies a large part of the landscape.			12
Codominant	**The project is one of the major objects in the landscape or is the major object or area in a panoramic landscape.**			**8**
Subordinate	The project is of significant size but occupies a minor part of the landscape.			4
Insignificant	The project is a small object occupying an exceedingly small area in the landscape.			0
		Single highest points	Maximum 12 points	**8**

Table 9 SPATIAL DOMINANCE			
Category	**Rating**	**Single Highest Rating**	**Points**
Spatial composition of the landscape.	**prominent**	**Dominant** 2-3 categories rated prominent.	**6**
	significant		
	inconspicuous	Codominant 1 category rated prominent, or 2 categories rated significant.	4
Spatial position of the project.	**prominent**		
	significant		
	inconspicuous	Subordinate 1 category rated significant.	2
Backdrop to the project.	prominent		
	inconspicuous	Insignificant All categories rated inconspicuous.	0
		Single highest points / Maximum 6 points	**6**

Table 10 PROJECT PROMINENCE RATING*	
Total Points	**Rating**
32-39	Severe
24-31	**Strong**
16-23	Moderate
8-15	Weak
0-7	Negligible
***(Add Points from Tables 7, 8, and 9)**	**Rating = Strong**

Tables 11 and 12 VISUAL ABSORPTION CAPABILITY			
	Rating	**Checkbox**	The existing landscape's ability to absorb the physical change by the proposed project without an alteration to its visual character.
Table 11 CAPABILITY **Table 12 ABSORPTION**	High		
	Moderate	**√**	
	Low		

Table 13 MAGNITUDE OF CHANGE		
		Checkbox
Dominant	Project commands or controls the view in the landscape.	
Prominent	**Project stands out or is striking in the view in the landscape.**	**√**
Conspicuous	Project is clearly visible and noticeable within the view in the landscape.	
Apparent	Project visible or evident within the view in the landscape.	
Unobtrusive	Project indistinct or not obvious within the view in the landscape.	

Table 14 VISUAL CHARACTER OR QUALITY OF PUBLIC VIEW OF SITE AND ITS SURROUNDINGS		
CEQA Guidelines Level of Effect on the Environment	Significant Effect	
	Less Than Significant Effect	**√**

KOP 1 Full Evaluation Worksheets (Tables 3 through 15)

Table 3 LANDSCAPE CHARACTER										
Aesthetic	**Description**								Check (√) the description that best describes the aspect of the landscape.	
Balance	harmonious		balanced		discordant	√	chaotic			
Complexity	uniform		simple		diverse		complex	√		
Dynamic	sweeping		spreading	√	disperse		channeled			
Enclosure	expansive		open	√	enclosed		constrained			
Pattern (two-dims.)	formal		organized		regular	√	random			
Perceptual										
Pleasure	beautiful		attractive		pleasant		unpleasant	√	nasty	
Security	intimate		comfortable		safe	√	unsettling		threatening	
Stimulus	inspiring		challenging	√	interesting		bland		monotonous	
Tranquility	inaccessible		remote		vacant		peaceful		busy	√
Basic Design Element										
Color	monochrome		muted	√	colorful	√	garish		The basic design elements are the source of visual contrast in the landscape that an individual sees and responds to when viewing a space.	
Form	angular		curvilinear	√	horizontal	√	rounded	√		
Line	straight	√	curved	√	vertical	√	horizontal	√		
Texture	smooth	√	textured	√	rough		very rough			
Scale	intimate		small		large	√	vast			
Adapted from Carys Swanwick, "Landscape Character Assessment Guidance for England and Scotland," prepared for The Countryside Agency and Scottish Natural Heritage, 2002, pp. 30-36.										

Table 4 UNITY						
	Rating					
Landscape	**High**	**Moderate to High**	**Moderate**	**Low to Moderate**	**Low**	**Guidance**
Rarity	rare		**√**		common	Are there many examples of this type of landscape in the region?
Diversity	orderly			**√**	muddled	Is there a recognizable order of the landscape features in view or are there too many patterns overlapping?
Detractors	many	**√**			few	Are there landscape features out of place?
Distinctiveness	distinct	**√**			indistinct	Is it easy to remember the landscape? Patterns dramatic or take some finding?
Integrity	whole		**√**		remnant	What patterns in the landscape are evident? Are sections missing and to what extent?
Adapted from Cape Cod Commission Technical Bulletin #12-001: Visual Impact Assessment Methodology for Offshore Development, Cape Cod Commission, Barnstable, Massachusetts, May 10, 2012, p. 36.						

KOP 1 Full Evaluation Worksheets (cont'd)

Table 5 PUBLIC VIEW	
Rating	
High	
	Public view includes areas where the aesthetic value is protected by federal, state, county or city, law, ordinance, regulation, or standard. Public view includes federal, state, county, city designated areas of aesthetic, cultural, and recreational claim, such as: a park, outdoor recreation area, etc.; coastal or forest reserve, open space preserve, urban green space, etc.; scenic overlook, scenic river, scenic trail, etc.; historic building, district, or site; a site having a cultural resource. Public view includes a federal or state designated scenic byway, highway, or road; designated scenic highway or road of regional importance; a segment of travel route, such as a road, rail line, pedestrian and equestrian trail, bicycle path near a designated area of aesthetic claim and leading directly to it. View approaching an area of aesthetic, cultural, and recreational claim that may be closely related to the appreciation of the aesthetic, cultural, and recreational significance at that designation. Public view includes an urban residential use area and segment of road that serves as the primary access route to it.
Moderate	
	Public view includes undesignated but popularly used or appreciated area of aesthetic, cultural, and recreational claim of significance in the region. Public view includes a highway or road locally designated as a scenic route and of importance only to the local population, or informally designated as such in road atlases, road maps, and tour book guides. Public view includes segments of travel routes, such as roads, pedestrian and equestrian trails, bicycle paths that are near and are the primary access to protected or popularly used undesignated areas important for their aesthetic, cultural, or recreational claim. Public view includes a segment of travel route near a designated area of aesthetic claim serving as a secondary access route to the area. Public view includes a rural residential use area and segment of road that serves as the primary access route to it within one mile. Public view includes a maintained religious facility or cemetery.
Low	
√	Public view includes an agricultural, commercial, industrial, manufacturing, research, and development use area. Public view includes a small aggregation of dwellings.
None	
	No public view.
Adapted from Aspen Environmental Group, "Final Environmental Impact Report Tranquillon Ridge Oil and Gas Development Project" prepared for County of Santa Barbara Planning and Development. Santa Barbara, CA, April 2008, Vol. 1, pp. 5.13-5-6, and "Final Environmental Impact Report Southern California International Gateway Project," Appendix B Aesthetics Visual Resource Methodology, Los Angeles Harbor Department, Los Angeles, CA, March 2013.	

KOP 1 Full Evaluation Worksheets (cont'd)

Table 6 VISIBILITY	
Rating	
Dominant Dominates view because project would fill most of visual field for views in its general direction. Stark contrast in form, line, color, texture, luminance, or motion may contribute to view dominance.	An object with strong visual contrast that is of such enormous size that it occupies most of the visual field, and views of it cannot be avoided except by turning the head greater than 45 degrees from a direct view of the object. The object is the major focus of visual attention, and its large apparent size is a major factor in its view dominance. In addition to size, contrast in form, line, color, and texture, bright light sources, and moving objects associated with the project may contribute substantially to drawing viewer attention. The visual prominence of the project detracts noticeably from views of other landscape components.
High Strongly attracts visual attention of views in general direction of project. Attention may be drawn by stark contrast in form, line, color, or texture, luminance, or motion.	An object that is not of large size, but contrasts with the surrounding landscape components so strongly that it is a major focus of visual attention, drawing viewer attention immediately, and tending to hold viewer attention. In addition to stark contrast in form, line, color, and texture, bright light sources, and moving objects associated with the project may contribute substantially to drawing viewer attention. The visual prominence of project interferes noticeably with views of nearby landscape components.
Moderate to High Plainly visible, could not be missed by casual observer, but does not strongly attract visual attention, or dominate view because of apparent size, for views in general direction of project.	An object that is obvious and with enough size or contrast to compete with other landscape components, but with insufficient visual contrast to strongly attract visual attention and insufficient size to occupy most of the observer's visual field.
Moderate Visible after brief glance in general direction of project and unlikely to be missed by casual observer.	An object that can be easily detected after a brief look and would be visible to most casual observers, but without enough size or contrast to compete with major landscape components.
Low to Moderate Visible when scanning in general direction of project; otherwise, likely to be missed by casual observer.	An object that is very small and/or faint, but when the observer is scanning the horizon or looking more closely at an area can be detected without extended viewing. A casual observer could sometimes notice it; however, most people would not notice it without some active looking.
Low Visible only after extended, close viewing; otherwise, invisible.	An object that is near the extreme limit of visibility. A person who was not aware of it in advance and looking for it could not see it. Even under those circumstances, the object can only be seen after looking at it closely for an extended period.
Adapted from R.G. Sullivan, L.B. Kirchler, T. Lahti, S. Roche, K. Beckman, B. Cantwell, P. Richmond, "Wind Turbine Visibility and Visual Impact Threshold Distances in Western Landscapes," University of Chicago Argonne, LLC submitted to the National Association of Environmental Professionals 37th Annual Conference Proceedings, Portland, Oregon, May 21-24, 2012, p. 17.	

KOP 1 Full Evaluation Worksheets (cont'd)

Table 7 BASIC DESIGN ELEMENT CONTRAST				
Element	**Rating[1]**	**Weight**	**Points**	
Color	Strong = 3 **Moderate = 2** Weak = 1 None = 0	x 3	**6**	Color is "the light-reflecting qualities of a project's surface (for example, dark or light, blue or gray) in relation to background colors."[2] "Colors that harmonize well seem to belong together and produce pleasing visual effects. Colors that do not harmonize are disturbing to the viewer."[3] Contrast in color depends on the exterior surface degree of lightness or darkness, gradation or variety of a color, the degree of saturation or brilliance of a color in the project to those that continue to exist in the landscape.
Form	**Strong = 3** Moderate = 2 Weak = 1 None = 0	x 2	**6**	Form is "the configuration and outline of the project in terms of masses, patterns, and linear elements. For example, a structure may have a bulky, vertical, geometric silhouette which contrasts with an irregular horizontal landscape of rolling hills."[4] Forms exist in three dimensions (height, length, width). For example, the shape is a square its form is a cube. Forms that are bold, regular, solid, or vertical tend to prevail in the landscape. Contrast in form depends on how alike the form(s) of the project is to those that continue to exist in the landscape.
Line	Strong = 3 **Moderate = 2** Weak = 1 None = 0	x 1	**2**	"Line is the path, real or imagined that the eye follows when perceiving abrupt differences when objects are aligned in a one-dimensional sequence."[5] "Line in the landscape is created by the edge between two materials, the outline or silhouette of a form, or a long linear feature."[6] Properties of lines: straight, diagonal, curved, vertical, horizontal. Contrast in line depends on edge types and interruption, or introduction of edges, bands, and silhouette lines in the project to those that continue to exist in the landscape.
Texture	Strong = 3 **Moderate = 2** Weak = 1 None = 0	x 1	**2**	Texture is "the aggregation of small forms or color mixtures into a continuous surface pattern; the aggregated parts are enough that they do not appear as discrete objects in the composition of the scene."[7] "Details of the surface pattern, as in smooth polished metal surfaces versus the rough, uneven textures of the foliage of trees and bushes"[8] Contrast in texture depends on the relative dimensions of the surface variations from large to small, spacing of surface variations, and the degree of uniform recurrence and symmetrical arrangement of the surface variation in the project to those that continue to exist in the landscape.
	Overall Rating[9]		**+16**	
	Maximum 21 points			

Adapted from R.C. Smardon, Donald Appleyard, "Prototype Visual Impact Assessment Manual," Pacific Southwest Forest and Range Experiment Station, Berkeley, CA, 1979.

[1] **Strong** — the project contrast demands attention will not be overlooked and is dominant in the landscape. **Moderate** — the project contrast begins to attract attention and begins to dominate the characteristic landscape. **Weak** — the project contrast can be seen but does not attract attention. **None** — the project contrast is not visible or perceived. (U.S. Department of Interior Bureau of Land Management Manual 8431-Visual Resources Contrast Rating, January 17, 1986.)

[2] Stephen R.J. Sheppard, *Visual Simulation A User's Guide For Architects, Engineers, And Planners*, Van Nostrand Reinhold, New York, 1989, p. 46.

[3] U.S. Department of Transportation Federal Highway Administration, "A Guide to Visual Quality in Noise Barrier Design," Chapter 3. Visual Design Principles, n.d.

[4] Sheppard, p. 46.

[5] U.S. Department of Interior Bureau of Land Management Manual 8431-1 Visual Resources Contrast Rating, January 17, 1986.

[6] Gail Hansen, "Basic Principles of Landscape Design." Florida Cooperative Extension Service Institute of Food and Agricultural Science, University of Florida, Gainesville, Florida, July 2010.

[7] U.S. Department of Interior Bureau of Land Management Manual 8431-1 Visual Resources Contrast Rating, January 17, 1986.

[8] Sheppard, p. 47.

[9] Overall Rating is for descriptive purpose: Strong — 1-3 ratings Strong or 3 ratings Moderate; Moderate — 1-2 ratings Moderate with no higher ratings; Weak — 1-3 ratings Weak with no higher ratings; None — all ratings None.

KOP 1 Full Evaluation Worksheets (cont'd)

Table 8 SCALE DOMINANCE				
Rating				**Points**
Dominant	The project is the major object in the landscape and occupies a large part of the landscape.			12
Codominant	**The project is one of the major objects in the landscape or is the major object or area in a panoramic landscape.**			**8**
Subordinate	The project is of significant size but occupies a minor part of the landscape.			4
Insignificant	The project is a small object occupying an exceedingly small area in the landscape.			0
		Single highest points	Maximum 12 points	**8**
Adapted from R.C. Smardon, Donald Appleyard, "Prototype Visual Impact Assessment Manual," Pacific Southwest Forest and Range Experiment Station, Berkeley, California, 1979.				

KOP 1 Full Evaluation Worksheets (cont'd)

Table 9 SPATIAL DOMINANCE

Category				Single Highest Rating
Spatial composition of the landscape	"[T]he arrangement of objects and voids in the landscape can be categorized by their spatial composition .... Some compositions, especially those which are distinctly focal, enclosed, or feature-oriented, are more vulnerable to modifications than others, depending upon how strongly the spatial configuration draws the eye to certain locations."[1]			**Dominant** 2-3 categories rated prominent **= 6 points** Codominant 1 category rated prominent, or 2 categories rated significant = 4 points Subordinate 1 category rated significant = 2 points Insignificant All categories rated inconspicuous = 0 points
	Rating	**Description**		
	prominent	Feature[2], Focal[2], or Enclosed[2] landscape.		
	significant	Panoramic,[2] or weak focal, feature or enclosed landscape.		
	inconspicuous	Canopied,[2] indistinct or obscured landscape.		
Spatial position of the project	"Spatial position of the project in relation to the three-dimensional arrangement of objects and voids in the landscape. Important spatial aspects of the project include relationship to the skyline, location in topographic spaces such as focal valleys or broad plains, and position with regard to streetscapes and architectural arrangements."[3]			
	Rating	**Description**		
	prominent	High Level,[4] High Slope,[4] Interfluve[4]		
	significant	Low Level,[4] Lowslope,[4] Midslope[4]		
	inconspicuous	Basin Floor,[4] Footslope,[4] Toeslope[4]		
Backdrop to the project	"[T]he backdrop against which an object is seen affects its visual contrast. Modifications seen against the sky or water are usually more prominent than against a land backdrop."[5]			
	Rating	**Description**		
	prominent	All or a significant part of the project will be seen against sky or water.		
	inconspicuous	All or a significant part of the project will be seen against land.		
		Single highest points	Maximum 6 points	**6**

Adapted from R.C. Smardon, Donald Appleyard, "Prototype Visual Impact Assessment Manual," Pacific Southwest Forest and Range Experiment Station, Berkeley, California, 1979.

[1] U.S. Department of Interior Bureau of Land Management Manual H-8431-1 Visual Resources Contrast Rating, January 17, 1986.

[2] **Canopied** — landscape where features overhead (above eye level) create a canopy or ceiling. **Enclosed** — a space, large or small surrounded by continuous grouping of objects creating walls and floor. It may have a large vertical dimension, but typically a restricted horizontal one. **Feature** — landscape dominated by a feature or a group of objects in the distance to which the eye is drawn. **Focal** — converging lines in the landscape or progressions of aligned objects lead the eye to a focal point in the landscape. **Panoramic** — a broad horizontal composition. Little or no sense of boundary restriction; no apparent limit to the view. Foreground or middle ground objects do not substantially block viewing of background objects. (U.S. Department of Interior Bureau of Land Management Manual H-8431-1 Visual Resources Contrast Rating, January 17, 1986.)

[3] Stephen R.J. Sheppard, *Visual Simulation A User's Guide For Architects, Engineers, And Planners*, Van Nostrand Reinhold, New York, 1989, p. 46.

[4] **Basin Floor** — nearly level to gently sloping, bottom surface of an intermontane basin. **Footslope** — the gently inclined hillslope at the foot of a hill. **High Level** — level top of plateau. **High Slope** — geomorphic component that forms the uppermost inclined surface at the top of a slope (e.g., shoulder slope, upper slope). **Interfluve** — linear top of ridge, hill, or mountain. **Low Level** — valley floor, or shoreline representing the former position of an alluvial plain, lake, or shore. **Lowslope** — inner gently inclined surface at the base of a slope. Surface profile is generally concave and a transition between midslope or backslope, and toeslope. **Midslope** — intermediate slope position between high and low (e.g., middle slope). (Adapted from T. Liang [1951]; J.B. Dalrymple, R.J. Blong, and A. Conacher. [1968]) **Toeslope** — the gently inclined surface at the base of a hillslope. Toeslope in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors. (USDA Soil Survey Manual Handbook No. 18, issued March 2017 as amended February 2018).

[5] U.S. Department of Interior Bureau of Land Management Manual H-8431-1.

KOP 1 Full Evaluation Worksheets (cont'd)

Table 11 CAPABILITY							
	For each category check (√) the rating that best describes the existing landscape.						
		Rating					
Category		High		Moderate		Low	
Topography		High amount of topographic diversity and variety.		Moderate amount of topographic diversity and variety.	√	Low amount of topographic diversity and variety.	
Land Use Pattern	If project in rural landscape	Small natural or vegetated areas. Man-made structures dominant in the view.	√	Natural areas of local significance. Man-made structures widespread but not dominant in the view.	√	Remote natural areas of regional significance. Man-made structures and features limited and scattered.	
	If project in urban landscape	Developed areas including commercial development. Large-scale infrastructure or structures may be common and more dominant.		Suburban or mostly developed areas with components of local importance. Large-scale infrastructure or structures may be visible but not dominant.		Clustered development surrounded by rural scattered development. Large-scale infrastructure or structures limited and scattered.	
Visual Variety		Landscape exhibits a high degree of visual variety in terms of the landscape's basic elements of form, line, color, and texture may also exhibit high degree of variety in landforms and vegetation.		Landscape exhibits a moderate degree of visual variety in terms of the landscape's basic elements of form, line, color, and texture may also exhibit moderate variety in landforms and vegetation.	√	Landscape exhibits a low degree of visual variety in terms of the landscape's basic elements of form, line, color, and texture may also exhibit minimal variety in landforms and vegetation.	
Major Focal Points or Features		Focal points or features in the viewshed that are either natural or man-made, commonly found, minimal local importance/value, or contribute little to the character of the landscape or are indistinct.		Focal points or features in the viewshed that are either natural or man-made, some-what commonly found, local importance/value, or make a minor contribution to the character of the landscape.	√	Focal points or features in the viewshed that are either natural or man-made and are unusual or rare, regional impor-tance/value, or make a major contribution to the character of the landscape or are somewhat distinctive.	
Adapted from Cape Cod Commission Technical Bulletin #12-001: Visual Impact Assessment Methodology for Offshore Development, Cape Cod Commission, Barnstable, Massachusetts, May 10, 2012, p. 17, and L. Blocker, T. Slider, J. Ruchman, J. Mosier, L. Kok, J. Silbemagle, J. Beard, D. Wagner, G. Brogan, D. Jones, N. Laughlinn, L. Anderson, "Landscape Aesthetic (AH 701-i) - Visual Absorption Capability (Appendix C)," United States Department of Agriculture Forest Service, 1995, pp. C-1-C-8.							

KOP 1 Full Evaluation Worksheets (cont'd)

Table 12 ABSORPTION	
For each question circle the applicable rating for the absorption of the landscape; High = H, Moderate = M, Low = L.	
Exposure	**Rating**
What is the level of exposure of the project in the landscape? The higher the level of exposure, the lower the absorption.	**H M (L)**
What is the intensity of the observation of the project? The more the project is observed from certain intensive land uses the lower its absorption (e.g., view from a densely populated residential area versus a heavy manufacturing and processing area).	**(H) M L**
What is the view distance to the project? The farther the viewing distance to the project from the vantage point the lower its exposure the higher its absorption. Is the project more than three miles away?	**(H) M L**
What is the project's distance from an urban skyline or a natural skyline (e.g., high-rise buildings or a mountain range against a backdrop of sky)? The closer the project is to an urban or natural skyline the lower its absorption.	**H (M) L**
What is the project's topographic position in the landscape? As the project's position increases its absorption decreases (e.g., toeslope to summit).	**H (M) L**
Focal Point	**Rating**
Is the project near a focal point in the landscape? A focal point is a converging of lines in the landscape or progressions of aligned objects that lead the eye to a point. A focal point gives the viewer something interesting to look at in the view. The closer the project is to a focal point the greater viewer scrutiny the lower the absorption.	**H (M) L**
Does the edge(s) in the landscape have a diverse background but have the propensity to become a focal point? An edge is a transitional linear place where one space or landscape becomes part of another. An edge has a high absorption due to a diverse background, a low absorption due to the propensity to become a focal point (e.g., city meets country, a woodland edge, an alpine tree line, coastline).	**H (M) L**
Trees & Vegetation	**Rating**
Are trees and vegetation in the landscape missing, deficient, or uniform? The greater the density of trees and vegetation, the greater the coverage, the greater the capacity of an area to absorb physical change.	**H M (L)**
What is the type(s) of tree(s) and vegetation in the landscape? Tree and vegetation types vary the absorption of the physical change. A uniformly tall, dense stand of trees has screening ability. Vegetation types such as evergreen shrubs and similar have greater absorption than dwarf shrubs, ornamental grasses, and grass-like plants. Trees and vegetation can provide high absorption in the foreground but lower absorption in the background.	**H M (L)**
Disturbed Surface Area	**Rating**
Period of time to restore the project's disturbed surface area to its pre-construction activity condition? The longer the time to restore the disturbed area to its undisturbed original condition after the construction phase the lower the absorption; 1 year = high, 2 to 3 years = moderate, 3 years or more = low.	**(H) M L**
Adapted from S. Amir, E. Gidalizon, "Expert-based method for the evaluation of visual absorption capacity of the landscape*," Journal of Environmental Management, 1990, Vol. 30, pp. 251-263, and W.C. Yeomans, "A Proposed Biophysical Approach to Visual Absorption Capability (VAC),1" Pacific Southwest Forest and Range Experimental Station, Berkeley, California, 1979 submitted to the National Conference on Applied Techniques for Analysis and Management of Visual Resource, Incline Village, Nevada, April 23-25, 1979, pp. 172-181.	

KOP 1 Full Evaluation Worksheets (cont'd)

Table 13 MAGNITUDE OF CHANGE				
Dominant	**Prominent**	**Conspicuous**	**Apparent**	**Unobtrusive**
Project commands or controls the view in the landscape.	**Project stands out or is striking in the view in the landscape.**	Project is clearly visible and noticeable within the view in the landscape.	Project visible or evident within the view in the landscape.	Project indistinct or not obvious within the view in the landscape.
Project causes a very large alteration to the landscape or features within the landscape such that there is a fundamental change from the existing physical condition.	Project causes a large alteration to the landscape or features within the landscape such that there is an unmistakable change from the existing physical condition.	Project causes a moderate alteration to the landscape or features within the landscape such that there is a distinct change from the existing physical condition.	Project causes a small alteration to the landscape or features within the landscape such that there is a perceptible change from the existing physical condition.	Project causes a very small alteration to the landscape, or features within the landscape such that there is a de minimis change from the existing physical condition.
Adapted from Cape Cod Commission Technical Bulletin #12-001: Visual Impact Assessment Methodology for Offshore Development, Cape Cod Commission, Barnstable, Massachusetts, May 10, 2012, p. 20.				

Table 14 VISUAL CHARACTER OR QUALITY OF PUBLIC VIEW OF SITE AND ITS SURROUNDINGS							
Landscape		**Project Prominence**		**Visual Absorption Capability**	**Magnitude Of Change**		**CEQA Guidelines Level of Effect On The Environment** (See Table 15)
Table	**Rating**	**Rating**		**Rating**			
Landscape Character	See Table 3	Severe		High	Dominant		Significant Effect
Unity	**Moderate**	**Strong**	√	Moderate	**Prominent**	√	
Public View	**Low**	Moderate			Conspicuous		**Less than Significant Effect**
Visibility	**Dominant**	Weak		Low	Apparent		
		Negligible			Unobtrusive		

Table 15 CEQA GUIDELINES LEVEL OF EFFECT ON THE ENVIRONMENT
Significant Effect on the Environment "means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance." (14 CCR § 15382) (Pub. Res. Code § 21060.5, 14 CCR § 15360) The physical change by the proposed project to the existing physical condition reaches the threshold of significance, "an identifiable, quantitative, qualitative or performance level of a particular environmental effect, noncompliance with which means the effect will normally be determined to be significant by the [lead] agency...." (14 CCR § 15064.7[a])
Less Than Significant Effect with Mitigation Incorporated. The physical change by the proposed project to the existing physical condition reaches the threshold of significance, "... but (1) revisions in the project plans or proposals made by, or agreed to by, the applicant before the proposed [CEQA environmental document (e.g., Negative Declaration) is] released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effect on the environment would occur, and (2) there is no substantial evidence in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment." (Pub. Res. Code § 21064.5, 14 CCR § 15369.5) (Pub. Res. Code § 21002)
Less Than Significant Effect. The physical change by the proposed project to the existing physical condition does not reach the threshold of significance "an identifiable, quantitative, qualitative or performance level of a particular environmental effect, ... compliance with which means the effect normally will be determined to be less than significant." (14 CCR § 15064.7[a])

Key Observation Point Evaluation Worksheets

KOP 2 Patterson Pass Rd. (View North) - Summary Sheet for Worksheet Tables

LANDSCAPE			
Table 3 LANDSCAPE CHARACTER	Aesthetic Aspect		See attached Table 3.
	Perceptual Aspect		
	Basic Design Element		
Table 4 UNITY	**Landscape**	**Rating**	Write the rating selected in the attached Table 4.
	Rarity	**Low to Moderate**	
	Diversity	**Moderate**	
	Detractors	**Moderate**	
	Distinctiveness	**Moderate**	
	Integrity	**Moderate**	
Table 5 PUBLIC VIEW	**Rating**	**Checkbox**	Check (√) the rating selected in the attached Tables 5 and 6.
	High		
	Moderate		
	Low	**√**	
	None		
Table 6 VISIBILITY	**Dominant**	**√**	
	High		
	Moderate to High		
	Moderate		
	Low to Moderate		
	Low		

PROJECT PROMINENCE			
Table 7 Basic Design Element Contrast			
Basic Design Element	**Rating**	**Weight**	**Points**
Color	Strong = 3	x 3	**6**
	Moderate = 2		
	Weak = 1		
	None = 0		
Form	**Strong = 3**	x 2	**6**
	Moderate = 2		
	Weak = 1		
	None = 0		
Line	**Strong = 3**	x 1	**3**
	Moderate = 2		
	Weak = 1		
	None = 0		
Texture	Strong = 3	x 1	**2**
	Moderate = 2		
	Weak = 1		
	None = 0		
		Maximum 21 points	**+17**

KOP 2 Patterson Pass Rd. (View North) - Summary Sheet for Worksheet Tables (cont'd)

Table 8 SCALE DOMINANCE				
Rating				**Points**
Dominant	**The project is the major object in the landscape and occupies a large part of the landscape.**			**12**
Codominant	The project is one of the major objects in the landscape or is the major object or area in a panoramic landscape.			8
Subordinate	The project is of significant size but occupies a minor part of the landscape.			4
Insignificant	The project is a small object occupying an exceedingly small area in the landscape.			0
		Single highest points	Maximum 12 points	**12**

Table 9 SPATIAL DOMINANCE				
Category	**Rating**	**Single Highest Rating**		**Points**
Spatial composition of the landscape.	**prominent**	**Dominant** 2-3 categories rated prominent.		**6**
	significant			
	inconspicuous	Codominant 1 category rated prominent, or 2 categories rated significant.		4
Spatial position of the project.	**prominent**			
	significant			
	inconspicuous	Subordinate 1 category rated significant.		2
Backdrop to the project.	**prominent**			
	inconspicuous	Insignificant All categories rated inconspicuous.		0
		Single highest points	Maximum 6 points	**6**

Table 10 PROJECT PROMINENCE RATING*	
Total Points	**Rating**
32-39	**Severe**
24-31	Strong
16-23	Moderate
8-15	Weak
0-7	Negligible
***(Add Points from Tables 7, 8, and 9)**	**Rating = Severe**

Tables 11 and 12 VISUAL ABSORPTION CAPABILITY			
	Rating	**Checkbox**	The existing landscape's ability to absorb the physical change by the proposed project without an alteration to its visual character.
Table 11 CAPABILITY **Table 12 ABSORPTION**	High		
	Moderate		
	Low	**√**	

Table 13 MAGNITUDE OF CHANGE		
		Checkbox
Dominant	**Project commands or controls the view in the landscape.**	**√**
Prominent	Project stands out or is striking in the view in the landscape.	
Conspicuous	Project is clearly visible and noticeable within the view in the landscape.	
Apparent	Project visible or evident within the view in the landscape.	
Unobtrusive	Project indistinct or not obvious within the view in the landscape.	

Table 14 VISUAL CHARACTER OR QUALITY OF PUBLIC VIEW OF SITE AND ITS SURROUNDINGS		
CEQA Guidelines Level of Effect on the Environment	**Significant Effect**	**√**
	Less Than Significant Effect	

KOP 2 Full Evaluation Worksheets (Tables 3 through 15)

Table 3 LANDSCAPE CHARACTER

Aesthetic	Description								Check (√) the description that best describes the aspect of the landscape.
Balance	harmonious		balanced		discordant	√	chaotic		
Complexity	uniform		simple		diverse	√	complex		
Dynamic	sweeping		spreading		disperse	√	channeled		
Enclosure	expansive		open	√	enclosed		constrained		
Pattern (two-dims.)	formal		organized	√	regular		random		
Perceptual									
Pleasure	beautiful		attractive		pleasant	√	unpleasant		nasty
Security	intimate		comfortable	√	safe		unsettling		threatening
Stimulus	inspiring		challenging		interesting		bland	√	monotonous
Tranquility	inaccessible		remote		vacant		peaceful	√	busy
Basic Design Element									
Color	monochrome		muted	√	colorful	√	garish		The basic design elements are the source of visual contrast in the landscape that an individual sees and responds to when viewing a space.
Form	angular		curvilinear	√	horizontal	√	rounded	√	
Line	straight	√	curved	√	vertical	√	horizontal	√	
Texture	smooth	√	textured	√	rough		very rough		
Scale	intimate		small		large	√	vast		

Adapted from Carys Swanwick, "Landscape Character Assessment Guidance for England and Scotland," prepared for The Countryside Agency and Scottish Natural Heritage, 2002, pp. 30-36.

Table 4 UNITY

Landscape	Rating					Guidance
	High	Moderate to High	Moderate	Low to Moderate	Low	
Rarity	rare			√	common	Are there many examples of this type of landscape in the region?
Diversity	orderly		√		muddled	Is there a recognizable order of the landscape features in view or are there too many patterns overlapping?
Detractors	many		√		few	Are there landscape features out of place?
Distinctiveness	distinct		√		indistinct	Is it easy to remember the landscape? Patterns dramatic or take some finding?
Integrity	whole		√		remnant	What patterns in the landscape are evident? Are sections missing and to what extent?

Adapted from Cape Cod Commission Technical Bulletin #12-001: Visual Impact Assessment Methodology for Offshore Development, Cape Cod Commission, Barnstable, Massachusetts, May 10, 2012, p. 36.

KOP 2 Full Evaluation Worksheets (cont'd)

Table 5 PUBLIC VIEW	
Rating	
High	
	Public view includes areas where the aesthetic value is protected by federal, state, county or city, law, ordinance, regulation, or standard. Public view includes federal, state, county, city designated areas of aesthetic, cultural, and recreational claim, such as: a park, outdoor recreation area, etc.; coastal or forest reserve, open space preserve, urban green space, etc.; scenic overlook, scenic river, scenic trail, etc.; historic building, district, or site; a site having a cultural resource. Public view includes a federal or state designated scenic byway, highway, or road; designated scenic highway or road of regional importance; a segment of travel route, such as a road, rail line, pedestrian and equestrian trail, bicycle path near a designated area of aesthetic claim and leading directly to it. View approaching an area of aesthetic, cultural, and recreational claim that may be closely related to the appreciation of the aesthetic, cultural, and recreational significance at that designation. Public view includes an urban residential use area and segment of road that serves as the primary access route to it.
Moderate	
	Public view includes undesignated but popularly used or appreciated area of aesthetic, cultural, and recreational claim of significance in the region. Public view includes a highway or road locally designated as a scenic route and of importance only to the local population, or informally designated as such in road atlases, road maps, and tour book guides. Public view includes segments of travel routes, such as roads, pedestrian and equestrian trails, bicycle paths that are near and are the primary access to protected or popularly used undesignated areas important for their aesthetic, cultural, or recreational claim. Public view includes a segment of travel route near a designated area of aesthetic claim serving as a secondary access route to the area. Public view includes a rural residential use area and segment of road that serves as the primary access route to it within one mile. Public view includes a maintained religious facility or cemetery.
Low	
√	Public view includes an agricultural, commercial, industrial, manufacturing, research, and development use area. Public view includes a small aggregation of dwellings.
None	
	No public view.
Adapted from Aspen Environmental Group, "Final Environmental Impact Report Tranquillon Ridge Oil and Gas Development Project" prepared for County of Santa Barbara Planning and Development. Santa Barbara, CA, April 2008, Vol. 1, pp. 5.13-5-6, and "Final Environmental Impact Report Southern California International Gateway Project," Appendix B Aesthetics Visual Resource Methodology, Los Angeles Harbor Department, Los Angeles, CA, March 2013.	

KOP 2 Full Evaluation Worksheets (cont'd)

Table 6 VISIBILITY	
Rating	
Dominant Dominates view because project would fill most of visual field for views in its general direction. Stark contrast in form, line, color, texture, luminance, or motion may contribute to view dominance.	An object with strong visual contrast that is of such enormous size that it occupies most of the visual field, and views of it cannot be avoided except by turning the head greater than 45 degrees from a direct view of the object. The object is the major focus of visual attention, and its large apparent size is a major factor in its view dominance. In addition to size, contrast in form, line, color, and texture, bright light sources, and moving objects associated with the project may contribute substantially to drawing viewer attention. The visual prominence of the project detracts noticeably from views of other landscape components.
High Strongly attracts visual attention of views in general direction of project. Attention may be drawn by stark contrast in form, line, color, or texture, luminance, or motion.	An object that is not of large size, but contrasts with the surrounding landscape components so strongly that it is a major focus of visual attention, drawing viewer attention immediately, and tending to hold viewer attention. In addition to stark contrast in form, line, color, and texture, bright light sources, and moving objects associated with the project may contribute substantially to drawing viewer attention. The visual prominence of project interferes noticeably with views of nearby landscape components.
Moderate to High Plainly visible, could not be missed by casual observer, but does not strongly attract visual attention, or dominate view because of apparent size, for views in general direction of project.	An object that is obvious and with enough size or contrast to compete with other landscape components, but with insufficient visual contrast to strongly attract visual attention and insufficient size to occupy most of the observer's visual field.
Moderate Visible after brief glance in general direction of project and unlikely to be missed by casual observer.	An object that can be easily detected after a brief look and would be visible to most casual observers, but without enough size or contrast to compete with major landscape components.
Low to Moderate Visible when scanning in general direction of project; otherwise, likely to be missed by casual observer.	An object that is very small and/or faint, but when the observer is scanning the horizon or looking more closely at an area can be detected without extended viewing. A casual observer could sometimes notice it; however, most people would not notice it without some active looking.
Low Visible only after extended, close viewing; otherwise, invisible.	An object that is near the extreme limit of visibility. A person who was not aware of it in advance and looking for it could not see it. Even under those circumstances, the object can only be seen after looking at it closely for an extended period.
Adapted from R.G. Sullivan, L.B. Kirchler, T. Lahti, S. Roche, K. Beckman, B. Cantwell, P. Richmond, "Wind Turbine Visibility and Visual Impact Threshold Distances in Western Landscapes," University of Chicago Argonne, LLC submitted to the National Association of Environmental Professionals 37th Annual Conference Proceedings, Portland, Oregon, May 21-24, 2012, p. 17.	

KOP 2 Full Evaluation Worksheets (cont'd)

Table 7 BASIC DESIGN ELEMENT CONTRAST				
Element	**Rating[1]**	**Weight**	**Points**	
Color	Strong = 3 **Moderate = 2** Weak = 1 None = 0	x 3	**6**	Color is "the light-reflecting qualities of a project's surface (for example, dark or light, blue or gray) in relation to background colors."[2] "Colors that harmonize well seem to belong together and produce pleasing visual effects. Colors that do not harmonize are disturbing to the viewer."[3] Contrast in color depends on the exterior surface degree of lightness or darkness, gradation or variety of a color, the degree of saturation or brilliance of a color in the project to those that continue to exist in the landscape.
Form	**Strong = 3** Moderate = 2 Weak = 1 None = 0	x 2	**6**	Form is "the configuration and outline of the project in terms of masses, patterns, and linear elements. For example, a structure may have a bulky, vertical, geometric silhouette which contrasts with an irregular horizontal landscape of rolling hills."[4] Forms exist in three dimensions (height, length, width). For example, the shape is a square its form is a cube. Forms that are bold, regular, solid, or vertical tend to prevail in the landscape. Contrast in form depends on how alike the form(s) of the project is to those that continue to exist in the landscape.
Line	**Strong = 3** Moderate = 2 Weak = 1 None = 0	x 1	**3**	"Line is the path, real or imagined that the eye follows when perceiving abrupt differences when objects are aligned in a one-dimensional sequence."[5] "Line in the landscape is created by the edge between two materials, the outline or silhouette of a form, or a long linear feature."[6] Properties of lines: straight, diagonal, curved, vertical, horizontal. Contrast in line depends on edge types and interruption, or introduction of edges, bands, and silhouette lines in the project to those that continue to exist in the landscape.
Texture	Strong = 3 **Moderate = 2** Weak = 1 None = 0	x 1	**2**	Texture is "the aggregation of small forms or color mixtures into a continuous surface pattern; the aggregated parts are enough that they do not appear as discrete objects in the composition of the scene."[7] "Details of the surface pattern, as in smooth polished metal surfaces versus the rough, uneven textures of the foliage of trees and bushes"[8] Contrast in texture depends on the relative dimensions of the surface variations from large to small, spacing of surface variations, and the degree of uniform recurrence and symmetrical arrangement of the surface variation in the project to those that continue to exist in the landscape.
	Overall Rating[9]		**+17**	
	Maximum 21 points			

Adapted from R.C. Smardon, Donald Appleyard, "Prototype Visual Impact Assessment Manual," Pacific Southwest Forest and Range Experiment Station, Berkeley, CA, 1979.

[1] **Strong** — the project contrast demands attention will not be overlooked and is dominant in the landscape. **Moderate** — the project contrast begins to attract attention and begins to dominate the characteristic landscape. **Weak** — the project contrast can be seen but does not attract attention. **None** — the project contrast is not visible or perceived. (U.S. Department of Interior Bureau of Land Management Manual 8431-Visual Resources Contrast Rating, January 17, 1986.)

[2] Stephen R.J. Sheppard, *Visual Simulation A User's Guide For Architects, Engineers, And Planners*, Van Nostrand Reinhold, New York, 1989, p. 46.

[3] U.S. Department of Transportation Federal Highway Administration, "A Guide to Visual Quality in Noise Barrier Design," Chapter 3. Visual Design Principles, n.d.

[4] Sheppard, p. 46.

[5] U.S. Department of Interior Bureau of Land Management Manual 8431-1 Visual Resources Contrast Rating, January 17, 1986.

[6] Gail Hansen, "Basic Principles of Landscape Design." Florida Cooperative Extension Service Institute of Food and Agricultural Science, University of Florida, Gainesville, Florida, July 2010.

[7] U.S. Department of Interior Bureau of Land Management Manual 8431-1 Visual Resources Contrast Rating, January 17, 1986.

[8] Sheppard, p. 47.

[9] Overall Rating is for descriptive purpose: Strong — 1-3 ratings Strong or 3 ratings Moderate; Moderate — 1-2 ratings Moderate with no higher ratings; Weak — 1-3 ratings Weak with no higher ratings; None — all ratings None.

KOP 2 Full Evaluation Worksheets (cont'd)

Table 8 SCALE DOMINANCE				
Rating				**Points**
Dominant	**The project is the major object in the landscape and occupies a large part of the landscape.**			**12**
Codominant	The project is one of the major objects in the landscape or is the major object or area in a panoramic landscape.			8
Subordinate	The project is of significant size but occupies a minor part of the landscape.			4
Insignificant	The project is a small object occupying an exceedingly small area in the landscape.			0
		Single highest points	Maximum 12 points	**12**
Adapted from R.C. Smardon, Donald Appleyard, "Prototype Visual Impact Assessment Manual," Pacific Southwest Forest and Range Experiment Station, Berkeley, California, 1979.				

KOP 2 Full Evaluation Worksheets (cont'd)

Table 9 SPATIAL DOMINANCE

Category				Single Highest Rating
Spatial composition of the landscape	"[T]he arrangement of objects and voids in the landscape can be categorized by their spatial composition .... Some compositions, especially those which are distinctly focal, enclosed, or feature-oriented, are more vulnerable to modifications than others, depending upon how strongly the spatial configuration draws the eye to certain locations."[1]			**Dominant** 2-3 categories rated prominent **= 6 points** Codominant 1 category rated prominent, or 2 categories rated significant = 4 points Subordinate 1 category rated significant = 2 points Insignificant All categories rated inconspicuous = 0 points
	Rating	**Description**		
	prominent	Feature[2], Focal[2], or Enclosed[2] landscape.		
	significant	Panoramic,[2] or weak focal, feature or enclosed landscape.		
	inconspicuous	Canopied,[2] indistinct or obscured landscape.		
Spatial position of the project	"Spatial position of the project in relation to the three-dimensional arrangement of objects and voids in the landscape. Important spatial aspects of the project include relationship to the skyline, location in topographic spaces such as focal valleys or broad plains, and position with regard to streetscapes and architectural arrangements."[3]			
	Rating	**Description**		
	prominent	High Level,[4] High Slope,[4] Interfluve[4]		
	significant	Low Level,[4] Lowslope,[4] Midslope[4]		
	inconspicuous	Basin Floor,[4] Footslope,[4] Toeslope[4]		
Backdrop to the project	"[T]he backdrop against which an object is seen affects its visual contrast. Modifications seen against the sky or water are usually more prominent than against a land backdrop."[5]			
	Rating	**Description**		
	prominent	All or a significant part of the project will be seen against sky or water.		
	inconspicuous	All or a significant part of the project will be seen against land.		
		Single highest points	Maximum 6 points	**6**

Adapted from R.C. Smardon, Donald Appleyard, "Prototype Visual Impact Assessment Manual," Pacific Southwest Forest and Range Experiment Station, Berkeley, California, 1979.

[1] U.S. Department of Interior Bureau of Land Management Manual H-8431-1 Visual Resources Contrast Rating, January 17, 1986.

[2] **Canopied** — landscape where features overhead (above eye level) create a canopy or ceiling. **Enclosed** — a space, large or small surrounded by continuous grouping of objects creating walls and floor. It may have a large vertical dimension, but typically a restricted horizontal one. **Feature** — landscape dominated by a feature or a group of objects in the distance to which the eye is drawn. **Focal** — converging lines in the landscape or progressions of aligned objects lead the eye to a focal point in the landscape. **Panoramic** — a broad horizontal composition. Little or no sense of boundary restriction; no apparent limit to the view. Foreground or middle ground objects do not substantially block viewing of background objects. (U.S. Department of Interior Bureau of Land Management Manual H-8431-1 Visual Resources Contrast Rating, January 17, 1986.)

[3] Stephen R.J. Sheppard, *Visual Simulation A User's Guide For Architects, Engineers, And Planners*, Van Nostrand Reinhold, New York, 1989, p. 46.

[4] **Basin Floor** — nearly level to gently sloping, bottom surface of an intermontane basin. **Footslope** — the gently inclined hillslope at the foot of a hill. **High Level** — level top of plateau. **High Slope** — geomorphic component that forms the uppermost inclined surface at the top of a slope (e.g., shoulder slope, upper slope). **Interfluve** — linear top of ridge, hill, or mountain. **Low Level** — valley floor, or shoreline representing the former position of an alluvial plain, lake, or shore. **Lowslope** — inner gently inclined surface at the base of a slope. Surface profile is generally concave and a transition between midslope or backslope, and toeslope. **Midslope** — intermediate slope position between high and low (e.g., middle slope). (Adapted from T. Liang [1951]; J.B. Dalrymple, R.J. Blong, and A. Conacher. [1968]) **Toeslope** — the gently inclined surface at the base of a hillslope. Toeslope in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors. (USDA Soil Survey Manual Handbook No. 18, issued March 2017 as amended February 2018).

[5] U.S. Department of Interior Bureau of Land Management Manual H-8431-1.

KOP 2 Full Evaluation Worksheets (cont'd)

Table 11 CAPABILITY							
Category	For each category check (√) the rating that best describes the existing landscape.						
		Rating					
		High		Moderate		Low	
Topography		High amount of topographic diversity and variety.		Moderate amount of topographic diversity and variety.		Low amount of topographic diversity and variety.	√
Land Use Pattern	If project in rural landscape	Small natural or vegetated areas. Man-made structures dominant in the view.		Natural areas of local significance. Man-made structures widespread but not dominant in the view.		Remote natural areas of regional significance. Man-made structures and features limited and scattered.	√
	If project in urban landscape	Developed areas including commercial development. Large-scale infra-structure or structures may be common and more dominant.		Suburban or mostly developed areas with components of local importance. Large-scale infrastruc-ture or structures may be visible but not dominant.		Clustered development surrounded by rural scattered development. Large-scale infrastructure or structures limited and scattered.	
Visual Variety		Landscape exhibits a high degree of visual variety in terms of the landscape's basic elements of form, line, color, and texture may also exhibit high degree of variety in landforms and vegetation.		Landscape exhibits a moderate degree of visual variety in terms of the landscape's basic elements of form, line, color, and texture may also exhibit moderate variety in landforms and vegetation.		Landscape exhibits a low degree of visual variety in terms of the landscape's basic elements of form, line, color, and texture may also exhibit minimal variety in landforms and vegetation.	√
Major Focal Points or Features		Focal points or fea-tures in the viewshed that are either natural or man-made, com-monly found, minimal local importance/ value, or contribute little to the character of the landscape or are indistinct.		Focal points or features in the viewshed that are either natural or man-made, somewhat commonly found, local importance/value, or make a minor contribution to the character of the landscape.	√	Focal points or features in the viewshed that are either natural or man-made and are unusual or rare, regional impor-tance/value, or make a major contribution to the character of the landscape or are somewhat distinctive.	
Adapted from Cape Cod Commission Technical Bulletin #12-001: Visual Impact Assessment Methodology for Offshore Development, Cape Cod Commission, Barnstable, Massachusetts, May 10, 2012, p. 17, and L. Blocker, T. Slider, J. Ruchman, J. Mosier, L. Kok, J. Silbemagle, J. Beard, D. Wagner, G. Brogan, D. Jones, N. Laughlinn, L. Anderson, "Landscape Aesthetic (AH 701-i) - Visual Absorption Capability (Appendix C)," United States Department of Agriculture Forest Service, 1995, pp. C-1-C-8.							

KOP 2 Full Evaluation Worksheets (cont'd)

Table 12 ABSORPTION	
For each question circle the applicable rating for the absorption of the landscape; High = H, Moderate = M, Low = L.	
Exposure	**Rating**
What is the level of exposure of the project in the landscape? The higher the level of exposure, the lower the absorption.	**H M (L)**
What is the intensity of the observation of the project? The more the project is observed from certain intensive land uses the lower its absorption (e.g., view from a densely populated residential area versus a heavy manufacturing and processing area).	**(H) M L**
What is the view distance to the project? The farther the viewing distance to the project from the vantage point the lower its exposure the higher its absorption. Is the project more than three miles away?	**H M (L)**
What is the project's distance from an urban skyline or a natural skyline (e.g., high-rise buildings or a mountain range against a backdrop of sky)? The closer the project is to an urban or natural skyline the lower its absorption.	**H M (L)**
What is the project's topographic position in the landscape? As the project's position increases its absorption decreases (e.g., toeslope to summit).	**H M (L)**
Focal Point	**Rating**
Is the project near a focal point in the landscape? A focal point is a converging of lines in the landscape or progressions of aligned objects that lead the eye to a point. A focal point gives the viewer something interesting to look at in the view. The closer the project is to a focal point the greater viewer scrutiny the lower the absorption.	**H (M) L**
Does the edge(s) in the landscape have a diverse background but have the propensity to become a focal point? An edge is a transitional linear place where one space or landscape becomes part of another. An edge has a high absorption due to a diverse background, a low absorption due to the propensity to become a focal point (e.g., city meets country, a woodland edge, an alpine tree line, coastline).	**H (M) L**
Trees & Vegetation	**Rating**
Are trees and vegetation in the landscape missing, deficient, or uniform? The greater the density of trees and vegetation, the greater the coverage, the greater the capacity of an area to absorb physical change.	**H M (L)**
What is the type(s) of tree(s) and vegetation in the landscape? Tree and vegetation types vary the absorption of the physical change. A uniformly tall, dense stand of trees has screening ability. Vegetation types such as evergreen shrubs and similar have greater absorption than dwarf shrubs, ornamental grasses, and grass-like plants. Trees and vegetation can provide high absorption in the foreground but lower absorption in the background.	**H M (L)**
Disturbed Surface Area	**Rating**
Period of time to restore the project's disturbed surface area to its pre-construction activity condition? The longer the time to restore the disturbed area to its undisturbed original condition after the construction phase the lower the absorption; 1 year = high, 2 to 3 years = moderate, 3 years or more = low.	**(H) M L**
Adapted from S. Amir, E. Gidalizon, "Expert-based method for the evaluation of visual absorption capacity of the landscape*," Journal of Environmental Management, 1990, Vol. 30, pp. 251-263, and W.C. Yeomans, "A Proposed Biophysical Approach to Visual Absorption Capability (VAC),1" Pacific Southwest Forest and Range Experimental Station, Berkeley, California, 1979 submitted to the National Conference on Applied Techniques for Analysis and Management of Visual Resource, Incline Village, Nevada, April 23-25, 1979, pp. 172-181.	

KOP 2 Full Evaluation Worksheets (cont'd)

Table 13 MAGNITUDE OF CHANGE				
Dominant	**Prominent**	**Conspicuous**	**Apparent**	**Unobtrusive**
Project commands or controls the view in the landscape.	Project stands out or is striking in the view in the landscape.	Project is clearly visible and notice-able within the view in the landscape.	Project visible or evident within the view in the landscape.	Project indistinct or not obvious within the view in the landscape.
Project causes a very large alteration to the landscape or features within the landscape such that there is a fundamental change from the existing physical condition.	Project causes a large alteration to the landscape or features within the landscape such that there is an unmis-takable change from the existing physical condition.	Project causes a moderate alteration to the landscape or features within the landscape such that there is a distinct change from the existing physical condition.	Project causes a small alteration to the landscape or features within the landscape such that there is a perceptible change from the existing physical condition.	Project causes a very small alteration to the landscape, or features within the landscape such that there is a de minimis change from the existing physical condition.
Adapted from Cape Cod Commission Technical Bulletin #12-001: Visual Impact Assessment Methodology for Offshore Development, Cape Cod Commission, Barnstable, Massachusetts, May 10, 2012, p. 20.				

Table 14 VISUAL CHARACTER OR QUALITY OF PUBLIC VIEW OF SITE AND ITS SURROUNDINGS							
Landscape		**Project Prominence**		**Visual Absorption Capability**	**Magnitude Of Change**		**CEQA Guidelines Level of Effect On The Environment** (See Table 15)
Table	Rating	Rating		Rating			
Landscape Character	See Table 3	**Severe**	√	High	**Dominant**	√	**Significant Effect**
Unity	**Moderate**	Strong		Moderate	Prominent		
Public View	**Low**	Moderate			Conspicuous		Less than Significant Effect
Visibility	**Dominant**	Weak		(Low)	Apparent		
		Negligible			Unobtrusive		

Table 15 CEQA GUIDELINES LEVEL OF EFFECT ON THE ENVIRONMENT
Significant Effect on the Environment "means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance." (14 CCR § 15382) (Pub. Res. Code § 21060.5, 14 CCR § 15360) The physical change by the proposed project to the existing physical condition reaches the threshold of significance, "an identifiable, quantitative, qualitative or performance level of a particular environmental effect, noncompliance with which means the effect will normally be determined to be significant by the [lead] agency...." (14 CCR § 15064.7[a])
Less Than Significant Effect with Mitigation Incorporated. The physical change by the proposed project to the existing physical condition reaches the threshold of significance, "... but (1) revisions in the project plans or proposals made by, or agreed to by, the applicant before the proposed [CEQA environmental document (e.g., Negative Declaration) is] released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effect on the environment would occur, and (2) there is no substantial evidence in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment." (Pub. Res. Code § 21064.5, 14 CCR § 15369.5) (Pub. Res. Code § 21002)
Less Than Significant Effect. The physical change by the proposed project to the existing physical condition does not reach the threshold of significance "an identifiable, quantitative, qualitative or performance level of a particular environmental effect, ... compliance with which means the effect normally will be determined to be less than significant." (14 CCR § 15064.7[a])

Key Observation Point Evaluation Worksheets

KOP 3 Patterson Pass Rd. (View Northeast) – Summary Sheet for Worksheet Tables

LANDSCAPE			
Table 3 LANDSCAPE CHARACTER	Aesthetic Aspect		See attached Table 3.
	Perceptual Aspect		
	Basic Design Element		
Table 4 UNITY	**Landscape**	**Rating**	Write the rating selected in the attached Table 4.
	Rarity	**Moderate**	
	Diversity	**Moderate**	
	Detractors	**Moderate**	
	Distinctiveness	**Moderate**	
	Integrity	**Moderate**	
Table 5 PUBLIC VIEW	**Rating**	**Checkbox**	Check (√) the rating selected in the attached Tables 5 and 6.
	High		
	Moderate		
	Low	**√**	
	None		
Table 6 VISIBILITY	**Dominant**	**√**	
	High		
	Moderate to High		
	Moderate		
	Low to Moderate		
	Low		

PROJECT PROMINENCE			
Table 7 Basic Design Element Contrast			
Basic Design Element	**Rating**	**Weight**	**Points**
Color	Strong = 3	x 3	**3**
	Moderate = 2		
	Weak = 1		
	None = 0		
Form	Strong = 3	x 2	**4**
	Moderate = 2		
	Weak = 1		
	None = 0		
Line	**Strong = 3**	x 1	**3**
	Moderate = 2		
	Weak = 1		
	None = 0		
Texture	Strong = 3	x 1	**2**
	Moderate = 2		
	Weak = 1		
	None = 0		
		Maximum 21 points	**+12**

KOP 3 Patterson Pass Rd. (View Northeast) - Summary Sheet for Worksheet Tables (cont'd)

Table 8 SCALE DOMINANCE				
Rating				**Points**
Dominant	**The project is the major object in the landscape and occupies a large part of the landscape.**			**12**
Codominant	The project is one of the major objects in the landscape or is the major object or area in a panoramic landscape.			8
Subordinate	The project is of significant size but occupies a minor part of the landscape.			4
Insignificant	The project is a small object occupying an exceedingly small area in the landscape.			0
		Single highest points	Maximum 12 points	**12**

Table 9 SPATIAL DOMINANCE			
Category	**Rating**	**Single Highest Rating**	**Points**
Spatial composition of the landscape.	**prominent**	**Dominant** 2-3 categories rated prominent.	**6**
	significant		
	inconspicuous	Codominant 1 category rated prominent, or 2 categories rated significant.	4
Spatial position of the project.	**prominent**		
	significant		
	inconspicuous	Subordinate 1 category rated significant.	2
Backdrop to the project.	**prominent**		
	inconspicuous	Insignificant All categories rated inconspicuous.	0
		Single highest points / Maximum 6 points	**6**

Table 10 PROJECT PROMINENCE RATING*	
Total Points	**Rating**
32-39	Severe
24-31	**Strong**
16-23	Moderate
8-15	Weak
0-7	Negligible
***(Add Points from Tables 7, 8, and 9)**	**Rating = Strong**

Tables 11 and 12 VISUAL ABSORPTION CAPABILITY			
	Rating	**Checkbox**	The existing landscape's ability to absorb the physical change by the proposed project without an alteration to its visual character.
Table 11 CAPABILITY **Table 12 ABSORPTION**	High		
	Moderate		
	Low	**√**	

Table 13 MAGNITUDE OF CHANGE		
		Checkbox
Dominant	**Project commands or controls the view in the landscape.**	**√**
Prominent	Project stands out or is striking in the view in the landscape.	
Conspicuous	Project is clearly visible and noticeable within the view in the landscape.	
Apparent	Project visible or evident within the view in the landscape.	
Unobtrusive	Project indistinct or not obvious within the view in the landscape.	

Table 14 VISUAL CHARACTER OR QUALITY OF PUBLIC VIEW OF SITE AND ITS SURROUNDINGS		
CEQA Guidelines Level of Effect on the Environment	**Significant Effect**	**√**
	Less Than Significant Effect	

KOP 3 Full Evaluation Worksheets (Tables 3 through 15)

Table 3 LANDSCAPE CHARACTER										
Aesthetic	**Description**								Check (√) the description that best describes the aspect of the landscape.	
Balance	harmonious		balanced		discordant	√	chaotic			
Complexity	uniform		simple		diverse	√	complex			
Dynamic	sweeping		spreading		disperse		channeled	√		
Enclosure	expansive		open		enclosed	√	constrained			
Pattern (two-dims.)	formal		organized		regular	√	random			
Perceptual										
Pleasure	beautiful		attractive		pleasant		unpleasant	√	nasty	
Security	intimate		comfortable		safe		unsettling	√	threatening	
Stimulus	inspiring		challenging		interesting	√	bland		monotonous	
Tranquility	inaccessible		remote		vacant		peaceful		busy	√
Basic Design Element										
Color	monochrome		muted	√	colorful		garish		The basic design elements are the source of visual contrast in the landscape that an individual sees and responds to when viewing a space.	
Form	angular	√	curvilinear		horizontal	√	rounded	√		
Line	straight	√	curved	√	vertical	√	horizontal	√		
Texture	smooth		textured	√	rough		very rough			
Scale	intimate		small		large	√	vast			
Adapted from Carys Swanwick, "Landscape Character Assessment Guidance for England and Scotland," prepared for The Countryside Agency and Scottish Natural Heritage, 2002, pp. 30-36.										

Table 4 UNITY						
	Rating					
Landscape	**High**	**Moderate to High**	**Moderate**	**Low to Moderate**	**Low**	**Guidance**
Rarity	rare		**√**		common	Are there many examples of this type of landscape in the region?
Diversity	orderly		**√**		muddled	Is there a recognizable order of the landscape features in view or are there too many patterns overlapping?
Detractors	many		**√**		few	Are there landscape features out of place?
Distinctiveness	distinct		**√**		indistinct	Is it easy to remember the landscape? Patterns dramatic or take some finding?
Integrity	whole		**√**		remnant	What patterns in the landscape are evident? Are sections missing and to what extent?
Adapted from Cape Cod Commission Technical Bulletin #12-001: Visual Impact Assessment Methodology for Offshore Development, Cape Cod Commission, Barnstable, Massachusetts, May 10, 2012, p. 36.						

KOP 3 Full Evaluation Worksheets (cont'd)

Table 5 PUBLIC VIEW	
Rating	
High	
	Public view includes areas where the aesthetic value is protected by federal, state, county or city, law, ordinance, regulation, or standard. Public view includes federal, state, county, city designated areas of aesthetic, cultural, and recreational claim, such as: a park, outdoor recreation area, etc.; coastal or forest reserve, open space preserve, urban green space, etc.; scenic overlook, scenic river, scenic trail, etc.; historic building, district, or site; a site having a cultural resource. Public view includes a federal or state designated scenic byway, highway, or road; designated scenic highway or road of regional importance; a segment of travel route, such as a road, rail line, pedestrian and equestrian trail, bicycle path near a designated area of aesthetic claim and leading directly to it. View approaching an area of aesthetic, cultural, and recreational claim that may be closely related to the appreciation of the aesthetic, cultural, and recreational significance at that designation. Public view includes an urban residential use area and segment of road that serves as the primary access route to it.
Moderate	
	Public view includes undesignated but popularly used or appreciated area of aesthetic, cultural, and recreational claim of significance in the region. Public view includes a highway or road locally designated as a scenic route and of importance only to the local population, or informally designated as such in road atlases, road maps, and tour book guides. Public view includes segments of travel routes, such as roads, pedestrian and equestrian trails, bicycle paths that are near and are the primary access to protected or popularly used undesignated areas important for their aesthetic, cultural, or recreational claim. Public view includes a segment of travel route near a designated area of aesthetic claim serving as a secondary access route to the area. Public view includes a rural residential use area and segment of road that serves as the primary access route to it within one mile. Public view includes a maintained religious facility or cemetery.
Low	
√	Public view includes an agricultural, commercial, industrial, manufacturing, research, and development use area. Public view includes a small aggregation of dwellings.
None	
	No public view.
Adapted from Aspen Environmental Group, "Final Environmental Impact Report Tranquillon Ridge Oil and Gas Development Project" prepared for County of Santa Barbara Planning and Development. Santa Barbara, CA, April 2008, Vol. 1, pp. 5.13-5-6, and "Final Environmental Impact Report Southern California International Gateway Project," Appendix B Aesthetics Visual Resource Methodology, Los Angeles Harbor Department, Los Angeles, CA, March 2013.	

KOP 3 Full Evaluation Worksheets (cont'd)

Table 6 VISIBILITY	
Rating	
Dominant Dominates view because project would fill most of visual field for views in its general direction. Stark contrast in form, line, color, texture, luminance, or motion may contribute to view dominance.	An object with strong visual contrast that is of such enormous size that it occupies most of the visual field, and views of it cannot be avoided except by turning the head greater than 45 degrees from a direct view of the object. The object is the major focus of visual attention, and its large apparent size is a major factor in its view dominance. In addition to size, contrast in form, line, color, and texture, bright light sources, and moving objects associated with the project may contribute substantially to drawing viewer attention. The visual prominence of the project detracts noticeably from views of other landscape components.
High Strongly attracts visual attention of views in general direction of project. Attention may be drawn by stark contrast in form, line, color, or texture, luminance, or motion.	An object that is not of large size, but contrasts with the surrounding landscape components so strongly that it is a major focus of visual attention, drawing viewer attention immediately, and tending to hold viewer attention. In addition to stark contrast in form, line, color, and texture, bright light sources, and moving objects associated with the project may contribute substantially to drawing viewer attention. The visual prominence of project interferes noticeably with views of nearby landscape components.
Moderate to High Plainly visible, could not be missed by casual observer, but does not strongly attract visual attention, or dominate view because of apparent size, for views in general direction of project.	An object that is obvious and with enough size or contrast to compete with other landscape components, but with insufficient visual contrast to strongly attract visual attention and insufficient size to occupy most of the observer's visual field.
Moderate Visible after brief glance in general direction of project and unlikely to be missed by casual observer.	An object that can be easily detected after a brief look and would be visible to most casual observers, but without enough size or contrast to compete with major landscape components.
Low to Moderate Visible when scanning in general direction of project; otherwise, likely to be missed by casual observer.	An object that is very small and/or faint, but when the observer is scanning the horizon or looking more closely at an area can be detected without extended viewing. A casual observer could sometimes notice it; however, most people would not notice it without some active looking.
Low Visible only after extended, close viewing; otherwise, invisible.	An object that is near the extreme limit of visibility. A person who was not aware of it in advance and looking for it could not see it. Even under those circumstances, the object can only be seen after looking at it closely for an extended period.
Adapted from R.G. Sullivan, L.B. Kirchler, T. Lahti, S. Roche, K. Beckman, B. Cantwell, P. Richmond, "Wind Turbine Visibility and Visual Impact Threshold Distances in Western Landscapes," University of Chicago Argonne, LLC submitted to the National Association of Environmental Professionals 37th Annual Conference Proceedings, Portland, Oregon, May 21-24, 2012, p. 17.	

KOP 3 Full Evaluation Worksheets (cont'd)

Table 7 BASIC DESIGN ELEMENT CONTRAST				
Element	**Rating[1]**	**Weight**	**Points**	
Color	Strong = 3 Moderate = 2 **Weak = 1** None = 0	x 3	**3**	Color is "the light-reflecting qualities of a project's surface (for example, dark or light, blue or gray) in relation to background colors."[2] "Colors that harmonize well seem to belong together and produce pleasing visual effects. Colors that do not harmonize are disturbing to the viewer."[3] Contrast in color depends on the exterior surface degree of lightness or darkness, gradation or variety of a color, the degree of saturation or brilliance of a color in the project to those that continue to exist in the landscape.
Form	Strong = 3 **Moderate = 2** Weak = 1 None = 0	x 2	**4**	Form is "the configuration and outline of the project in terms of masses, patterns, and linear elements. For example, a structure may have a bulky, vertical, geometric silhouette which contrasts with an irregular horizontal landscape of rolling hills."[4] Forms exist in three dimensions (height, length, width). For example, the shape is a square its form is a cube. Forms that are bold, regular, solid, or vertical tend to prevail in the landscape. Contrast in form depends on how alike the form(s) of the project is to those that continue to exist in the landscape.
Line	**Strong = 3** Moderate = 2 Weak = 1 None = 0	x 1	**3**	"Line is the path, real or imagined that the eye follows when perceiving abrupt differences when objects are aligned in a one-dimensional sequence."[5] "Line in the landscape is created by the edge between two materials, the outline or silhouette of a form, or a long linear feature."[6] Properties of lines: straight, diagonal, curved, vertical, horizontal. Contrast in line depends on edge types and interruption, or introduction of edges, bands, and silhouette lines in the project to those that continue to exist in the landscape.
Texture	Strong = 3 **Moderate = 2** Weak = 1 None = 0	x 1	**2**	Texture is "the aggregation of small forms or color mixtures into a continuous surface pattern; the aggregated parts are enough that they do not appear as discrete objects in the composition of the scene."[7] "Details of the surface pattern, as in smooth polished metal surfaces versus the rough, uneven textures of the foliage of trees and bushes"[8] Contrast in texture depends on the relative dimensions of the surface variations from large to small, spacing of surface variations, and the degree of uniform recurrence and symmetrical arrangement of the surface variation in the project to those that continue to exist in the landscape.
	Overall Rating[9]		**+12**	
	Maximum 21 points			

Adapted from R.C. Smardon, Donald Appleyard, "Prototype Visual Impact Assessment Manual," Pacific Southwest Forest and Range Experiment Station, Berkeley, CA, 1979.

[1] **Strong** — the project contrast demands attention will not be overlooked and is dominant in the landscape. **Moderate** — the project contrast begins to attract attention and begins to dominate the characteristic landscape. **Weak** — the project contrast can be seen but does not attract attention. **None** — the project contrast is not visible or perceived. (U.S. Department of Interior Bureau of Land Management Manual 8431-Visual Resources Contrast Rating, January 17, 1986.)

[2] Stephen R.J. Sheppard, *Visual Simulation A User's Guide For Architects, Engineers, And Planners*, Van Nostrand Reinhold, New York, 1989, p. 46.

[3] U.S. Department of Transportation Federal Highway Administration, "A Guide to Visual Quality in Noise Barrier Design," Chapter 3. Visual Design Principles, n.d.

[4] Sheppard, p. 46.

[5] U.S. Department of Interior Bureau of Land Management Manual 8431-1 Visual Resources Contrast Rating, January 17, 1986.

[6] Gail Hansen, "Basic Principles of Landscape Design." Florida Cooperative Extension Service Institute of Food and Agricultural Science, University of Florida, Gainesville, Florida, July 2010.

[7] U.S. Department of Interior Bureau of Land Management Manual 8431-1 Visual Resources Contrast Rating, January 17, 1986.

[8] Sheppard, p. 47.

[9] Overall Rating is for descriptive purpose: Strong — 1-3 ratings Strong or 3 ratings Moderate; Moderate — 1-2 ratings Moderate with no higher ratings; Weak — 1-3 ratings Weak with no higher ratings; None — all ratings None.

KOP 3 Full Evaluation Worksheets (cont'd)

Table 8 SCALE DOMINANCE				
Rating				**Points**
Dominant	**The project is the major object in the landscape and occupies a large part of the landscape.**			**12**
Codominant	The project is one of the major objects in the landscape or is the major object or area in a panoramic landscape.			8
Subordinate	The project is of significant size but occupies a minor part of the landscape.			4
Insignificant	The project is a small object occupying an exceedingly small area in the landscape.			0
		Single highest points	Maximum 12 points	**12**
Adapted from R.C. Smardon, Donald Appleyard, "Prototype Visual Impact Assessment Manual," Pacific Southwest Forest and Range Experiment Station, Berkeley, California, 1979.				

KOP 3 Full Evaluation Worksheets (cont'd)

Table 9 SPATIAL DOMINANCE

Category				Single Highest Rating
Spatial composition of the landscape	"[T]he arrangement of objects and voids in the landscape can be categorized by their spatial composition .... Some compositions, especially those which are distinctly focal, enclosed, or feature-oriented, are more vulnerable to modifications than others, depending upon how strongly the spatial configuration draws the eye to certain locations."[1]			**Dominant** 2-3 categories rated prominent **= 6 points** Codominant 1 category rated prominent, or 2 categories rated significant = 4 points Subordinate 1 category rated significant = 2 points Insignificant All categories rated inconspicuous = 0 points
	Rating	**Description**		
	prominent	Feature[2], Focal[2], or Enclosed[2] landscape.		
	significant	Panoramic,[2] or weak focal, feature or enclosed landscape.		
	inconspicuous	Canopied,[2] indistinct or obscured landscape.		
Spatial position of the project	"Spatial position of the project in relation to the three-dimensional arrangement of objects and voids in the landscape. Important spatial aspects of the project include relationship to the skyline, location in topographic spaces such as focal valleys or broad plains, and position with regard to streetscapes and architectural arrangements."[3]			
	Rating	**Description**		
	prominent	High Level,[4] High Slope,[4] Interfluve[4]		
	significant	Low Level,[4] Lowslope,[4] Midslope[4]		
	inconspicuous	Basin Floor,[4] Footslope,[4] Toeslope[4]		
Backdrop to the project	"[T]he backdrop against which an object is seen affects its visual contrast. Modifications seen against the sky or water are usually more prominent than against a land backdrop."[5]			
	Rating	**Description**		
	prominent	All or a significant part of the project will be seen against sky or water.		
	inconspicuous	All or a significant part of the project will be seen against land.		
		Single highest points	Maximum 6 points	**6**

Adapted from R.C. Smardon, Donald Appleyard, "Prototype Visual Impact Assessment Manual," Pacific Southwest Forest and Range Experiment Station, Berkeley, California, 1979.

[1] U.S. Department of Interior Bureau of Land Management Manual H-8431-1 Visual Resources Contrast Rating, January 17, 1986.

[2] **Canopied** — landscape where features overhead (above eye level) create a canopy or ceiling. **Enclosed** — a space, large or small surrounded by continuous grouping of objects creating walls and floor. It may have a large vertical dimension, but typically a restricted horizontal one. **Feature** — landscape dominated by a feature or a group of objects in the distance to which the eye is drawn. **Focal** — converging lines in the landscape or progressions of aligned objects lead the eye to a focal point in the landscape. **Panoramic** — a broad horizontal composition. Little or no sense of boundary restriction; no apparent limit to the view. Foreground or middle ground objects do not substantially block viewing of background objects. (U.S. Department of Interior Bureau of Land Management Manual H-8431-1 Visual Resources Contrast Rating, January 17, 1986.)

[3] Stephen R.J. Sheppard, *Visual Simulation A User's Guide For Architects, Engineers, And Planners*, Van Nostrand Reinhold, New York, 1989, p. 46.

[4] **Basin Floor** — nearly level to gently sloping, bottom surface of an intermontane basin. **Footslope** — the gently inclined hillslope at the foot of a hill. **High Level** — level top of plateau. **High Slope** — geomorphic component that forms the uppermost inclined surface at the top of a slope (e.g., shoulder slope, upper slope). **Interfluve** — linear top of ridge, hill, or mountain. **Low Level** — valley floor, or shoreline representing the former position of an alluvial plain, lake, or shore. **Lowslope** — inner gently inclined surface at the base of a slope. Surface profile is generally concave and a transition between midslope or backslope, and toeslope. **Midslope** — intermediate slope position between high and low (e.g., middle slope). (Adapted from T. Liang [1951]; J.B. Dalrymple, R.J. Blong, and A. Conacher. [1968]) **Toeslope** — the gently inclined surface at the base of a hillslope. Toeslope in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors. (USDA Soil Survey Manual Handbook No. 18, issued March 2017 as amended February 2018).

[5] U.S. Department of Interior Bureau of Land Management Manual H-8431-1.

KOP 3 Full Evaluation Worksheets (cont'd)

Table 11 CAPABILITY							
Category	For each category check (√) the rating that best describes the existing landscape.						
		Rating					
		High		Moderate		Low	
Topography		High amount of topographic diversity and variety.		Moderate amount of topographic diversity and variety.		Low amount of topographic diversity and variety.	√
Land Use Pattern	If project in rural landscape	Small natural or vegetated areas. Man-made structures dominant in the view.		Natural areas of local significance. Man-made structures widespread but not dominant in the view.	√	Remote natural areas of regional significance. Man-made structures and features limited and scattered.	
	If project in urban landscape	Developed areas including commercial development. Large-scale infrastructure or structures may be common and more dominant.		Suburban or mostly developed areas with components of local importance. Large-scale infrastructure or structures may be visible but not dominant.		Clustered development surrounded by rural scattered development. Large-scale infrastructure or structures limited and scattered.	
Visual Variety		Landscape exhibits a high degree of visual variety in terms of the landscape's basic elements of form, line, color, and texture may also exhibit high degree of variety in landforms and vegetation.		Landscape exhibits a moderate degree of visual variety in terms of the landscape's basic elements of form, line, color, and texture may also exhibit moderate variety in landforms and vegetation.		Landscape exhibits a low degree of visual variety in terms of the landscape's basic elements of form, line, color, and texture may also exhibit minimal variety in landforms and vegetation.	√
Major Focal Points or Features		Focal points or features in the viewshed that are either natural or man-made, commonly found, minimal local importance/value, or contribute little to the character of the landscape or are indistinct.		Focal points or features in the viewshed that are either natural or man-made, somewhat commonly found, local importance/value, or make a minor contribution to the character of the landscape.		Focal points or features in the viewshed that are either natural or man-made and are unusual or rare, regional importance/value, or make a major contribution to the character of the landscape or are somewhat distinctive.	√
Adapted from Cape Cod Commission Technical Bulletin #12-001: Visual Impact Assessment Methodology for Offshore Development, Cape Cod Commission, Barnstable, Massachusetts, May 10, 2012, p. 17, and L. Blocker, T. Slider, J. Ruchman, J. Mosier, L. Kok, J. Silbemagle, J. Beard, D. Wagner, G. Brogan, D. Jones, N. Laughlinn, L. Anderson, "Landscape Aesthetic (AH 701-i) - Visual Absorption Capability (Appendix C)," United States Department of Agriculture Forest Service, 1995, pp. C-1-C-8.							

KOP 3 Full Evaluation Worksheets (cont'd)

Table 12 ABSORPTION	
For each question circle the applicable rating for the absorption of the landscape; High = H, Moderate = M, Low = L.	
Exposure	**Rating**
What is the level of exposure of the project in the landscape? The higher the level of exposure, the lower the absorption.	**H M (L)**
What is the intensity of the observation of the project? The more the project is observed from certain intensive land uses the lower its absorption (e.g., view from a densely populated residential area versus a heavy manufacturing and processing area).	**(H) M L**
What is the view distance to the project? The farther the viewing distance to the project from the vantage point the lower its exposure the higher its absorption. Is the project more than three miles away?	**H M (L)**
What is the project's distance from an urban skyline or a natural skyline (e.g., high-rise buildings or a mountain range against a backdrop of sky)? The closer the project is to an urban or natural skyline the lower its absorption.	**H M (L)**
What is the project's topographic position in the landscape? As the project's position increases its absorption decreases (e.g., toeslope to summit).	**H M (L)**
Focal Point	**Rating**
Is the project near a focal point in the landscape? A focal point is a converging of lines in the landscape or progressions of aligned objects that lead the eye to a point. A focal point gives the viewer something interesting to look at in the view. The closer the project is to a focal point the greater viewer scrutiny the lower the absorption.	**H M (L)**
Does the edge(s) in the landscape have a diverse background but have the propensity to become a focal point? An edge is a transitional linear place where one space or landscape becomes part of another. An edge has a high absorption due to a diverse background, a low absorption due to the propensity to become a focal point (e.g., city meets country, a woodland edge, an alpine tree line, coastline).	**H (M) L**
Trees & Vegetation	**Rating**
Are trees and vegetation in the landscape missing, deficient, or uniform? The greater the density of trees and vegetation, the greater the coverage, the greater the capacity of an area to absorb physical change.	**H M (L)**
What is the type(s) of tree(s) and vegetation in the landscape? Tree and vegetation types vary the absorption of the physical change. A uniformly tall, dense stand of trees has screening ability. Vegetation types such as evergreen shrubs and similar have greater absorption than dwarf shrubs, ornamental grasses, and grass-like plants. Trees and vegetation can provide high absorption in the foreground but lower absorption in the background.	**H M (L)**
Disturbed Surface Area	**Rating**
Period of time to restore the project's disturbed surface area to its pre-construction activity condition? The longer the time to restore the disturbed area to its undisturbed original condition after the construction phase the lower the absorption; 1 year = high, 2 to 3 years = moderate, 3 years or more = low.	**(H) M L**
Adapted from S. Amir, E. Gidalizon, "Expert-based method for the evaluation of visual absorption capacity of the landscape*," Journal of Environmental Management, 1990, Vol. 30, pp. 251-263, and W.C. Yeomans, "A Proposed Biophysical Approach to Visual Absorption Capability (VAC),1" Pacific Southwest Forest and Range Experimental Station, Berkeley, California, 1979 submitted to the National Conference on Applied Techniques for Analysis and Management of Visual Resource, Incline Village, Nevada, April 23-25, 1979, pp. 172-181.	

KOP 3 Full Evaluation Worksheets (cont'd)

Table 13 MAGNITUDE OF CHANGE				
Dominant	**Prominent**	**Conspicuous**	**Apparent**	**Unobtrusive**
Project commands or controls the view in the landscape.	**Project stands out or is striking in the view in the landscape.**	Project is clearly visible and noticeable within the view in the landscape.	Project visible or evident within the view in the landscape.	Project indistinct or not obvious within the view in the landscape.
Project causes a very large alteration to the landscape or features within the landscape such that there is a fundamental change from the existing physical condition.	Project causes a large alteration to the landscape or features within the landscape such that there is an unmistakable change from the existing physical condition.	Project causes a moderate alteration to the landscape or features within the landscape such that there is a distinct change from the existing physical condition.	Project causes a small alteration to the landscape or features within the landscape such that there is a perceptible change from the existing physical condition.	Project causes a very small alteration to the landscape, or features within the landscape such that there is a de minimis change from the existing physical condition.
Adapted from Cape Cod Commission Technical Bulletin #12-001: Visual Impact Assessment Methodology for Offshore Development, Cape Cod Commission, Barnstable, Massachusetts, May 10, 2012, p. 20.				

Table 14 VISUAL CHARACTER OR QUALITY OF PUBLIC VIEW OF SITE AND ITS SURROUNDINGS							
Landscape		**Project Prominence**		**Visual Absorption Capability**	**Magnitude Of Change**		**CEQA Guidelines Level of Effect On The Environment** (See Table 15)
Table	**Rating**	**Rating**		**Rating**			
Landscape Character	See Table 3	Severe		High	**Dominant**	√	**Significant Effect**
Unity	**Moderate**	**Strong**	√	Moderate	Prominent		
Public View	**Low**	Moderate			Conspicuous		Less than Significant Effect
Visibility	**Dominant**	Weak		(Low)	Apparent		
		Negligible			Unobtrusive		

Table 15 CEQA GUIDELINES LEVEL OF EFFECT ON THE ENVIRONMENT
Significant Effect on the Environment "means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance." (14 CCR § 15382) (Pub. Res. Code § 21060.5, 14 CCR § 15360) The physical change by the proposed project to the existing physical condition reaches the threshold of significance, "an identifiable, quantitative, qualitative or performance level of a particular environmental effect, noncompliance with which means the effect will normally be determined to be significant by the [lead] agency...." (14 CCR § 15064.7[a])
Less Than Significant Effect with Mitigation Incorporated. The physical change by the proposed project to the existing physical condition reaches the threshold of significance, "... but (1) revisions in the project plans or proposals made by, or agreed to by, the applicant before the proposed [CEQA environmental document (e.g., Negative Declaration) is] released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effect on the environment would occur, and (2) there is no substantial evidence in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment." (Pub. Res. Code § 21064.5, 14 CCR § 15369.5) (Pub. Res. Code § 21002)
Less Than Significant Effect. The physical change by the proposed project to the existing physical condition does not reach the threshold of significance "an identifiable, quantitative, qualitative or performance level of a particular environmental effect, ... compliance with which means the effect normally will be determined to be less than significant." (14 CCR § 15064.7[a])

Key Observation Point Evaluation Worksheets

KOP 4 Private Gravel Rd. (View South) - Summary Sheet for Worksheet Tables

LANDSCAPE			
Table 3 LANDSCAPE CHARACTER	Aesthetic Aspect		See attached Table 3.
	Perceptual Aspect		
	Basic Design Element		
Table 4 UNITY	**Landscape**	**Rating**	Write the rating selected in the attached Table 4.
	Rarity	**Moderate**	
	Diversity	**Moderate**	
	Detractors	**Moderate**	
	Distinctiveness	**Moderate**	
	Integrity	**Moderate**	
Table 5 PUBLIC VIEW	**Rating**	**Checkbox**	Check (√) the rating selected in the attached Tables 5 and 6.
	High		
	Moderate		
	Low	**√**	
	None		
Table 6 VISIBILITY	**Dominant**	**√**	
	High		
	Moderate to High		
	Moderate		
	Low to Moderate		
	Low		

PROJECT PROMINENCE			
Table 7 Basic Design Element Contrast			
Basic Design Element	**Rating**	**Weight**	**Points**
Color	Strong = 3	x 3	**6**
	Moderate = 2		
	Weak = 1		
	None = 0		
Form	**Strong = 3**	x 2	**6**
	Moderate = 2		
	Weak = 1		
	None = 0		
Line	**Strong = 3**	x 1	**3**
	Moderate = 2		
	Weak = 1		
	None = 0		
Texture	Strong = 3	x 1	**1**
	Moderate = 2		
	Weak = 1		
	None = 0		
		Maximum 21 points	**+16**

KOP 4 Private Gravel Rd. (View South) - Summary Sheet for Worksheet Tables (cont'd)

Table 8 SCALE DOMINANCE				
Rating				**Points**
Dominant	The project is the major object in the landscape and occupies a large part of the landscape.			12
Codominant	**The project is one of the major objects in the landscape or is the major object or area in a panoramic landscape.**			**8**
Subordinate	The project is of significant size but occupies a minor part of the landscape.			4
Insignificant	The project is a small object occupying an exceedingly small area in the landscape.			0
		Single highest points	Maximum 12 points	**8**

Table 9 SPATIAL DOMINANCE			
Category	**Rating**	**Single Highest Rating**	**Points**
Spatial composition of the landscape.	**prominent**	**Dominant** 2-3 categories rated prominent.	**6**
	significant		
	inconspicuous	Codominant 1 category rated prominent, or 2 categories rated significant.	4
Spatial position of the project.	**prominent**		
	significant		
	inconspicuous	Subordinate 1 category rated significant.	2
Backdrop to the project.	prominent		
	inconspicuous	Insignificant All categories rated inconspicuous.	0
		Single highest points / Maximum 6 points	**6**

Table 10 PROJECT PROMINENCE RATING*	
Total Points	**Rating**
32-39	Severe
24-31	**Strong**
16-23	Moderate
8-15	Weak
0-7	Negligible
***(Add Points from Tables 7, 8, and 9)**	**Rating = Strong**

Tables 11 and 12 VISUAL ABSORPTION CAPABILITY			
	Rating	**Checkbox**	The existing landscape's ability to absorb the physical change by the proposed project without an alteration to its visual character.
Table 11 CAPABILITY **Table 12 ABSORPTION**	High		
	Moderate	**√**	
	Low		

Table 13 MAGNITUDE OF CHANGE		
		Checkbox
Dominant	Project commands or controls the view in the landscape.	
Prominent	**Project stands out or is striking in the view in the landscape.**	**√**
Conspicuous	Project is clearly visible and noticeable within the view in the landscape.	
Apparent	Project visible or evident within the view in the landscape.	
Unobtrusive	Project indistinct or not obvious within the view in the landscape.	

Table 14 VISUAL CHARACTER OR QUALITY OF PUBLIC VIEW OF SITE AND ITS SURROUNDINGS		
CEQA Guidelines Level of Effect on the Environment	**Significant Effect**	**√**
	Less Than Significant Effect	

KOP 4 Full Evaluation Worksheets (Tables 3 through 15)

Table 3 LANDSCAPE CHARACTER

Aesthetic	**Description**								Check (√) the description that best describes the aspect of the landscape.	
Balance	harmonious		balanced		discordant	√	chaotic			
Complexity	uniform		simple		diverse	√	complex			
Dynamic	sweeping		spreading	√	disperse		channeled			
Enclosure	expansive		open	√	enclosed		constrained			
Pattern (two-dims.)	formal		organized		regular	√	random			
Perceptual										
Pleasure	beautiful		attractive		pleasant		unpleasant	√	nasty	
Security	intimate		comfortable		safe	√	unsettling		threatening	
Stimulus	inspiring		challenging		interesting	√	bland		monotonous	
Tranquility	inaccessible		remote		vacant		peaceful		busy	√
Basic Design Element										
Color	monochrome		muted	√	colorful	√	garish		The basic design elements are the source of visual contrast in the landscape that an individual sees and responds to when viewing a space.	
Form	angular		curvilinear	√	horizontal	√	rounded	√		
Line	straight	√	curved	√	vertical	√	horizontal	√		
Texture	smooth		textured	√	rough		very rough			
Scale	intimate		small		large	√	vast			

Adapted from Carys Swanwick, "Landscape Character Assessment Guidance for England and Scotland," prepared for The Countryside Agency and Scottish Natural Heritage, 2002, pp. 30-36.

Table 4 UNITY

	Rating					
Landscape	**High**	**Moderate to High**	**Moderate**	**Low to Moderate**	**Low**	**Guidance**
Rarity	rare		**√**		common	Are there many examples of this type of landscape in the region?
Diversity	orderly		**√**		muddled	Is there a recognizable order of the landscape features in view or are there too many patterns overlapping?
Detractors	many		**√**		few	Are there landscape features out of place?
Distinctiveness	distinct		**√**		indistinct	Is it easy to remember the landscape? Patterns dramatic or take some finding?
Integrity	whole		**√**		remnant	What patterns in the landscape are evident? Are sections missing and to what extent?

Adapted from Cape Cod Commission Technical Bulletin #12-001: Visual Impact Assessment Methodology for Offshore Development, Cape Cod Commission, Barnstable, Massachusetts, May 10, 2012, p. 36.

KOP 4 Full Evaluation Worksheets (cont'd)

Table 5 PUBLIC VIEW	
Rating	
High	
	Public view includes areas where the aesthetic value is protected by federal, state, county or city, law, ordinance, regulation, or standard. Public view includes federal, state, county, city designated areas of aesthetic, cultural, and recreational claim, such as: a park, outdoor recreation area, etc.; coastal or forest reserve, open space preserve, urban green space, etc.; scenic overlook, scenic river, scenic trail, etc.; historic building, district, or site; a site having a cultural resource. Public view includes a federal or state designated scenic byway, highway, or road; designated scenic highway or road of regional importance; a segment of travel route, such as a road, rail line, pedestrian and equestrian trail, bicycle path near a designated area of aesthetic claim and leading directly to it. View approaching an area of aesthetic, cultural, and recreational claim that may be closely related to the appreciation of the aesthetic, cultural, and recreational significance at that designation. Public view includes an urban residential use area and segment of road that serves as the primary access route to it.
Moderate	
	Public view includes undesignated but popularly used or appreciated area of aesthetic, cultural, and recreational claim of significance in the region. Public view includes a highway or road locally designated as a scenic route and of importance only to the local population, or informally designated as such in road atlases, road maps, and tour book guides. Public view includes segments of travel routes, such as roads, pedestrian and equestrian trails, bicycle paths that are near and are the primary access to protected or popularly used undesignated areas important for their aesthetic, cultural, or recreational claim. Public view includes a segment of travel route near a designated area of aesthetic claim serving as a secondary access route to the area. Public view includes a rural residential use area and segment of road that serves as the primary access route to it within one mile. Public view includes a maintained religious facility or cemetery.
Low	
√	Public view includes an agricultural, commercial, industrial, manufacturing, research, and development use area. Public view includes a small aggregation of dwellings.
None	
	No public view.
Adapted from Aspen Environmental Group, "Final Environmental Impact Report Tranquillon Ridge Oil and Gas Development Project" prepared for County of Santa Barbara Planning and Development. Santa Barbara, CA, April 2008, Vol. 1, pp. 5.13-5-6, and "Final Environmental Impact Report Southern California International Gateway Project," Appendix B Aesthetics Visual Resource Methodology, Los Angeles Harbor Department, Los Angeles, CA, March 2013.	

KOP 4 Full Evaluation Worksheets (cont'd)

Table 6 VISIBILITY	
Rating	
Dominant Dominates view because project would fill most of visual field for views in its general direction. Stark contrast in form, line, color, texture, luminance, or motion may contribute to view dominance.	An object with strong visual contrast that is of such enormous size that it occupies most of the visual field, and views of it cannot be avoided except by turning the head greater than 45 degrees from a direct view of the object. The object is the major focus of visual attention, and its large apparent size is a major factor in its view dominance. In addition to size, contrast in form, line, color, and texture, bright light sources, and moving objects associated with the project may contribute substantially to drawing viewer attention. The visual prominence of the project detracts noticeably from views of other landscape components.
High Strongly attracts visual attention of views in general direction of project. Attention may be drawn by stark contrast in form, line, color, or texture, luminance, or motion.	An object that is not of large size, but contrasts with the surrounding landscape components so strongly that it is a major focus of visual attention, drawing viewer attention immediately, and tending to hold viewer attention. In addition to stark contrast in form, line, color, and texture, bright light sources, and moving objects associated with the project may contribute substantially to drawing viewer attention. The visual prominence of project interferes noticeably with views of nearby landscape components.
Moderate to High Plainly visible, could not be missed by casual observer, but does not strongly attract visual attention, or dominate view because of apparent size, for views in general direction of project.	An object that is obvious and with enough size or contrast to compete with other landscape components, but with insufficient visual contrast to strongly attract visual attention and insufficient size to occupy most of the observer's visual field.
Moderate Visible after brief glance in general direction of project and unlikely to be missed by casual observer.	An object that can be easily detected after a brief look and would be visible to most casual observers, but without enough size or contrast to compete with major landscape components.
Low to Moderate Visible when scanning in general direction of project; otherwise, likely to be missed by casual observer.	An object that is very small and/or faint, but when the observer is scanning the horizon or looking more closely at an area can be detected without extended viewing. A casual observer could sometimes notice it; however, most people would not notice it without some active looking.
Low Visible only after extended, close viewing; otherwise, invisible.	An object that is near the extreme limit of visibility. A person who was not aware of it in advance and looking for it could not see it. Even under those circumstances, the object can only be seen after looking at it closely for an extended period.
Adapted from R.G. Sullivan, L.B. Kirchler, T. Lahti, S. Roche, K. Beckman, B. Cantwell, P. Richmond, "Wind Turbine Visibility and Visual Impact Threshold Distances in Western Landscapes," University of Chicago Argonne, LLC submitted to the National Association of Environmental Professionals 37th Annual Conference Proceedings, Portland, Oregon, May 21-24, 2012, p. 17.	

KOP 4 Full Evaluation Worksheets (cont'd)

Table 7 BASIC DESIGN ELEMENT CONTRAST				
Element	**Rating[1]**	**Weight**	**Points**	
Color	Strong = 3 **Moderate = 2** Weak = 1 None = 0	x 3	**6**	Color is "the light-reflecting qualities of a project's surface (for example, dark or light, blue or gray) in relation to background colors."[2] "Colors that harmonize well seem to belong together and produce pleasing visual effects. Colors that do not harmonize are disturbing to the viewer."[3] Contrast in color depends on the exterior surface degree of lightness or darkness, gradation or variety of a color, the degree of saturation or brilliance of a color in the project to those that continue to exist in the landscape.
Form	**Strong = 3** Moderate = 2 Weak = 1 None = 0	x 2	**6**	Form is "the configuration and outline of the project in terms of masses, patterns, and linear elements. For example, a structure may have a bulky, vertical, geometric silhouette which contrasts with an irregular horizontal landscape of rolling hills."[4] Forms exist in three dimensions (height, length, width). For example, the shape is a square its form is a cube. Forms that are bold, regular, solid, or vertical tend to prevail in the landscape. Contrast in form depends on how alike the form(s) of the project is to those that continue to exist in the landscape.
Line	**Strong = 3** Moderate = 2 Weak = 1 None = 0	x 1	**3**	"Line is the path, real or imagined that the eye follows when perceiving abrupt differences when objects are aligned in a one-dimensional sequence."[5] "Line in the landscape is created by the edge between two materials, the outline or silhouette of a form, or a long linear feature."[6] Properties of lines: straight, diagonal, curved, vertical, horizontal. Contrast in line depends on edge types and interruption, or introduction of edges, bands, and silhouette lines in the project to those that continue to exist in the landscape.
Texture	Strong = 3 Moderate = 2 **Weak = 1** None = 0	x 1	**1**	Texture is "the aggregation of small forms or color mixtures into a continuous surface pattern; the aggregated parts are enough that they do not appear as discrete objects in the composition of the scene."[7] "Details of the surface pattern, as in smooth polished metal surfaces versus the rough, uneven textures of the foliage of trees and bushes"[8] Contrast in texture depends on the relative dimensions of the surface variations from large to small, spacing of surface variations, and the degree of uniform recurrence and symmetrical arrangement of the surface variation in the project to those that continue to exist in the landscape.
	Overall Rating[9]		**+16**	
	Maximum 21 points			

Adapted from R.C. Smardon, Donald Appleyard, "Prototype Visual Impact Assessment Manual," Pacific Southwest Forest and Range Experiment Station, Berkeley, CA, 1979.

[1] **Strong** — the project contrast demands attention will not be overlooked and is dominant in the landscape. **Moderate** — the project contrast begins to attract attention and begins to dominate the characteristic landscape. **Weak** — the project contrast can be seen but does not attract attention. **None** — the project contrast is not visible or perceived. (U.S. Department of Interior Bureau of Land Management Manual 8431-Visual Resources Contrast Rating, January 17, 1986.)

[2] Stephen R.J. Sheppard, *Visual Simulation A User's Guide For Architects, Engineers, And Planners*, Van Nostrand Reinhold, New York, 1989, p. 46.

[3] U.S. Department of Transportation Federal Highway Administration, "A Guide to Visual Quality in Noise Barrier Design," Chapter 3. Visual Design Principles, n.d.

[4] Sheppard, p. 46.

[5] U.S. Department of Interior Bureau of Land Management Manual 8431-1 Visual Resources Contrast Rating, January 17, 1986.

[6] Gail Hansen, "Basic Principles of Landscape Design." Florida Cooperative Extension Service Institute of Food and Agricultural Science, University of Florida, Gainesville, Florida, July 2010.

[7] U.S. Department of Interior Bureau of Land Management Manual 8431-1 Visual Resources Contrast Rating, January 17, 1986.

[8] Sheppard, p. 47.

[9] Overall Rating is for descriptive purpose: Strong — 1-3 ratings Strong or 3 ratings Moderate; Moderate — 1-2 ratings Moderate with no higher ratings; Weak — 1-3 ratings Weak with no higher ratings; None — all ratings None.

KOP 4 Full Evaluation Worksheets (cont'd)

Table 8 SCALE DOMINANCE				
Rating				**Points**
Dominant	The project is the major object in the landscape and occupies a large part of the landscape.			12
Codominant	**The project is one of the major objects in the landscape or is the major object or area in a panoramic landscape.**			**8**
Subordinate	The project is of significant size but occupies a minor part of the landscape.			4
Insignificant	The project is a small object occupying an exceedingly small area in the landscape.			0
		Single highest points	Maximum 12 points	**8**
Adapted from R.C. Smardon, Donald Appleyard, "Prototype Visual Impact Assessment Manual," Pacific Southwest Forest and Range Experiment Station, Berkeley, California, 1979.				

KOP 4 Full Evaluation Worksheets (cont'd)

Table 9 SPATIAL DOMINANCE

Category				Single Highest Rating
Spatial composition of the landscape	"[T]he arrangement of objects and voids in the landscape can be categorized by their spatial composition .... Some compositions, especially those which are distinctly focal, enclosed, or feature-oriented, are more vulnerable to modifications than others, depending upon how strongly the spatial configuration draws the eye to certain locations."[1]			**Dominant** 2-3 categories rated prominent **= 6 points** Codominant 1 category rated prominent, or 2 categories rated significant = 4 points Subordinate 1 category rated significant = 2 points Insignificant All categories rated inconspicuous = 0 points
	Rating	**Description**		
	prominent	Feature[2], Focal[2], or Enclosed[2] landscape.		
	significant	Panoramic,[2] or weak focal, feature or enclosed landscape.		
	inconspicuous	Canopied,[2] indistinct or obscured landscape.		
Spatial position of the project	"Spatial position of the project in relation to the three-dimensional arrangement of objects and voids in the landscape. Important spatial aspects of the project include relationship to the skyline, location in topographic spaces such as focal valleys or broad plains, and position with regard to streetscapes and architectural arrangements."[3]			
	Rating	**Description**		
	prominent	High Level,[4] High Slope,[4] Interfluve[4]		
	significant	Low Level,[4] Lowslope,[4] Midslope[4]		
	inconspicuous	Basin Floor,[4] Footslope,[4] Toeslope[4]		
Backdrop to the project	"[T]he backdrop against which an object is seen affects its visual contrast. Modifications seen against the sky or water are usually more prominent than against a land backdrop."[5]			
	Rating	**Description**		
	prominent	All or a significant part of the project will be seen against sky or water.		
	inconspicuous	All or a significant part of the project will be seen against land.		
		Single highest points	Maximum 6 points	**6**

Adapted from R.C. Smardon, Donald Appleyard, "Prototype Visual Impact Assessment Manual," Pacific Southwest Forest and Range Experiment Station, Berkeley, California, 1979.

[1] U.S. Department of Interior Bureau of Land Management Manual H-8431-1 Visual Resources Contrast Rating, January 17, 1986.

[2] **Canopied** — landscape where features overhead (above eye level) create a canopy or ceiling. **Enclosed** — a space, large or small surrounded by continuous grouping of objects creating walls and floor. It may have a large vertical dimension, but typically a restricted horizontal one. **Feature** — landscape dominated by a feature or a group of objects in the distance to which the eye is drawn. **Focal** — converging lines in the landscape or progressions of aligned objects lead the eye to a focal point in the landscape. **Panoramic** — a broad horizontal composition. Little or no sense of boundary restriction; no apparent limit to the view. Foreground or middle ground objects do not substantially block viewing of background objects. (U.S. Department of Interior Bureau of Land Management Manual H-8431-1 Visual Resources Contrast Rating, January 17, 1986.)

[3] Stephen R.J. Sheppard, *Visual Simulation A User's Guide For Architects, Engineers, And Planners*, Van Nostrand Reinhold, New York, 1989, p. 46.

[4] **Basin Floor** — nearly level to gently sloping, bottom surface of an intermontane basin. **Footslope** — the gently inclined hillslope at the foot of a hill. **High Level** — level top of plateau. **High Slope** — geomorphic component that forms the uppermost inclined surface at the top of a slope (e.g., shoulder slope, upper slope). **Interfluve** — linear top of ridge, hill, or mountain. **Low Level** — valley floor, or shoreline representing the former position of an alluvial plain, lake, or shore. **Lowslope** — inner gently inclined surface at the base of a slope. Surface profile is generally concave and a transition between midslope or backslope, and toeslope. **Midslope** — intermediate slope position between high and low (e.g., middle slope). (Adapted from T. Liang [1951]; J.B. Dalrymple, R.J. Blong, and A. Conacher. [1968]) **Toeslope** — the gently inclined surface at the base of a hillslope. Toeslope in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors. (USDA Soil Survey Manual Handbook No. 18, issued March 2017 as amended February 2018).

[5] U.S. Department of Interior Bureau of Land Management Manual H-8431-1.

KOP 4 Full Evaluation Worksheets (cont'd)

Table 11 CAPABILITY							
	For each category check (√) the rating that best describes the existing landscape.						
		Rating					
Category		High		Moderate		Low	
Topography		High amount of topographic diversity and variety.		Moderate amount of topographic diversity and variety.		Low amount of topographic diversity and variety.	√
Land Use Pattern	If project in rural landscape	Small natural or vegetated areas. Man-made structures dominant in the view.		Natural areas of local significance. Man-made structures widespread but not dominant in the view.	√	Remote natural areas of regional significance. Man-made structures and features limited and scattered.	
	If project in urban landscape	Developed areas including commercial development. Large-scale infra-structure or structures may be common and more dominant.		Suburban or mostly developed areas with components of local importance. Large-scale infrastruc-ture or structures may be visible but not dominant.		Clustered development surrounded by rural scattered development. Large-scale infrastructure or structures limited and scattered.	
Visual Variety		Landscape exhibits a high degree of visual variety in terms of the landscape's basic elements of form, line, color, and texture may also exhibit high degree of variety in landforms and vegetation.		Landscape exhibits a moderate degree of visual variety in terms of the landscape's basic elements of form, line, color, and texture may also exhibit moderate variety in landforms and vegetation.		Landscape exhibits a low degree of visual variety in terms of the landscape's basic elements of form, line, color, and texture may also exhibit minimal variety in landforms and vegetation.	√
Major Focal Points or Features		Focal points or fea-tures in the viewshed that are either natural or man-made, com-monly found, minimal local importance/ value, or contribute little to the character of the landscape or are indistinct.		Focal points or features in the viewshed that are either natural or man-made, somewhat commonly found, local importance/value, or make a minor contribution to the character of the landscape.	√	Focal points or features in the viewshed that are either natural or man-made and are unusual or rare, regional impor-tance/value, or make a major contribution to the character of the landscape or are somewhat distinctive.	
Adapted from Cape Cod Commission Technical Bulletin #12-001: Visual Impact Assessment Methodology for Offshore Development, Cape Cod Commission, Barnstable, Massachusetts, May 10, 2012, p. 17, and L. Blocker, T. Slider, J. Ruchman, J. Mosier, L. Kok, J. Silbemagle, J. Beard, D. Wagner, G. Brogan, D. Jones, N. Laughlinn, L. Anderson, "Landscape Aesthetic (AH 701-i) - Visual Absorption Capability (Appendix C)," United States Department of Agriculture Forest Service, 1995, pp. C-1-C-8.							

KOP 4 Full Evaluation Worksheets (cont'd)

Table 12 ABSORPTION	
For each question circle the applicable rating for the absorption of the landscape; High = H, Moderate = M, Low = L.	
Exposure	**Rating**
What is the level of exposure of the project in the landscape? The higher the level of exposure, the lower the absorption.	**H M (L)**
What is the intensity of the observation of the project? The more the project is observed from certain intensive land uses the lower its absorption (e.g., view from a densely populated residential area versus a heavy manufacturing and processing area).	**(H) M L**
What is the view distance to the project? The farther the viewing distance to the project from the vantage point the lower its exposure the higher its absorption. Is the project more than three miles away?	**(H) M L**
What is the project's distance from an urban skyline or a natural skyline (e.g., high-rise buildings or a mountain range against a backdrop of sky)? The closer the project is to an urban or natural skyline the lower its absorption.	**H (M) L**
What is the project's topographic position in the landscape? As the project's position increases its absorption decreases (e.g., toeslope to summit).	**H (M) L**
Focal Point	**Rating**
Is the project near a focal point in the landscape? A focal point is a converging of lines in the landscape or progressions of aligned objects that lead the eye to a point. A focal point gives the viewer something interesting to look at in the view. The closer the project is to a focal point the greater viewer scrutiny the lower the absorption.	**H (M) L**
Does the edge(s) in the landscape have a diverse background but have the propensity to become a focal point? An edge is a transitional linear place where one space or landscape becomes part of another. An edge has a high absorption due to a diverse background, a low absorption due to the propensity to become a focal point (e.g., city meets country, a woodland edge, an alpine tree line, coastline).	**H (M) L**
Trees & Vegetation	**Rating**
Are trees and vegetation in the landscape missing, deficient, or uniform? The greater the density of trees and vegetation, the greater the coverage, the greater the capacity of an area to absorb physical change.	**H M (L)**
What is the type(s) of tree(s) and vegetation in the landscape? Tree and vegetation types vary the absorption of the physical change. A uniformly tall, dense stand of trees has screening ability. Vegetation types such as evergreen shrubs and similar have greater absorption than dwarf shrubs, ornamental grasses, and grass-like plants. Trees and vegetation can provide high absorption in the foreground but lower absorption in the background.	**H M (L)**
Disturbed Surface Area	**Rating**
Period of time to restore the project's disturbed surface area to its pre-construction activity condition? The longer the time to restore the disturbed area to its undisturbed original condition after the construction phase the lower the absorption; 1 year = high, 2 to 3 years = moderate, 3 years or more = low.	**(H) M L**
Adapted from S. Amir, E. Gidalizon, "Expert-based method for the evaluation of visual absorption capacity of the landscape*," Journal of Environmental Management, 1990, Vol. 30, pp. 251-263, and W.C. Yeomans, "A Proposed Biophysical Approach to Visual Absorption Capability (VAC),1" Pacific Southwest Forest and Range Experimental Station, Berkeley, California, 1979 submitted to the National Conference on Applied Techniques for Analysis and Management of Visual Resource, Incline Village, Nevada, April 23-25, 1979, pp. 172-181.	

KOP 4 Full Evaluation Worksheets (cont'd)

Table 13 MAGNITUDE OF CHANGE

Dominant	Prominent	Conspicuous	Apparent	Unobtrusive
Project commands or controls the view in the landscape.	**Project stands out or is striking in the view in the landscape.**	Project is clearly visible and notice-able within the view in the landscape.	Project visible or evident within the view in the landscape.	Project indistinct or not obvious within the view in the landscape.
Project causes a very large alteration to the landscape or features within the landscape such that there is a fundamental change from the existing physical condition.	Project causes a large alteration to the landscape or features within the landscape such that there is an unmistakable change from the existing physical condition.	Project causes a moderate alteration to the landscape or features within the landscape such that there is a distinct change from the existing physical condition.	Project causes a small alteration to the landscape or features within the landscape such that there is a percepti-ble change from the existing physical condition.	Project causes a very small alteration to the landscape, or features within the landscape such that there is a de minimis change from the existing physical condition.

Adapted from Cape Cod Commission Technical Bulletin #12-001: Visual Impact Assessment Methodology for Offshore Development, Cape Cod Commission, Barnstable, Massachusetts, May 10, 2012, p. 20.

Table 14 VISUAL CHARACTER OR QUALITY OF PUBLIC VIEW OF SITE AND ITS SURROUNDINGS

Landscape		Project Prominence		Visual Absorption Capability	Magnitude Of Change		CEQA Guidelines Level of Effect On The Environment (See Table 15)
Table	**Rating**	**Rating**		**Rating**			
Landscape Character	See Table 3	Severe		High	Dominant		**Significant Effect**
Unity	**Moderate**	**Strong**	√	(Moderate)	**Prominent**	√	
Public View	**Low**	Moderate			Conspicuous		Less than Significant Effect
Visibility	**Dominant**	Weak		Low	Apparent		
		Negligible			Unobtrusive		

Table 15 CEQA GUIDELINES LEVEL OF EFFECT ON THE ENVIRONMENT

Significant Effect on the Environment "means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance." (14 CCR § 15382) (Pub. Res. Code § 21060.5, 14 CCR § 15360) The physical change by the proposed project to the existing physical condition reaches the threshold of significance, "an identifiable, quantitative, qualitative or performance level of a particular environmental effect, noncompliance with which means the effect will normally be determined to be significant by the [lead] agency...." (14 CCR § 15064.7[a])

Less Than Significant Effect with Mitigation Incorporated. The physical change by the proposed project to the existing physical condition reaches the threshold of significance, "... but (1) revisions in the project plans or proposals made by, or agreed to by, the applicant before the proposed [CEQA environmental document (e.g., Negative Declaration) is] released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effect on the environment would occur, and (2) there is no substantial evidence in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment." (Pub. Res. Code § 21064.5, 14 CCR § 15369.5) (Pub. Res. Code § 21002)

Less Than Significant Effect. The physical change by the proposed project to the existing physical condition does not reach the threshold of significance "an identifiable, quantitative, qualitative or performance level of a particular environmental effect, ... compliance with which means the effect normally will be determined to be less than significant." (14 CCR § 15064.7[a])

Appendix 5.15A

Conceptual Outdoor Lighting Control and Management Plan

ELECTRICAL SYMBOLS

LIGHTING

- FIXTURE TYPE
- SWITCH ZONE:
  - UPPERCASE LETTER X INDICATES TIME CLOCK CONTROL
  - LOWERCASE LETTER x INDICATES LOCAL OCCUPANCY/VACANCY SENSOR CONTROL
  - (a) INDICATES DAYLIGHT ZONE CONTROLLED BY PHOTOCELL (WHERE SHOWN)
- FIXTURE IS ON EMERGENCY POWER
- EXIT SIGN, CEILING MOUNT — REFER TO ARCHITECTURAL LIFE SAFETY PLAN FOR DIRECTION OF TRAVEL
- EXIT SIGN, WALL MOUNT — REFER TO ARCHITECTURAL LIFE SAFETY PLAN FOR DIRECTION OF TRAVEL
- CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY OR VACANCY SENSOR
- DAYLIGHT SENSOR (x,y) INDICATES ZONES CONTROLLED
- LOW VOLTAGE MULTI-BUTTON ON/OFF DIM UP/DOWN SWITCH. x,y = SWITCH LEG(S) CONTROLLED. PROVIDE SEPARATE ON/OFF AND DIM UP/DOWN FUNCTIONALITY FOR EACH SWITCH LEG NOTED.
- LOW VOLTAGE TWO-BUTTON ON/OFF SWITCH x,y = SWITCH LEG(S) CONTROLLED. PROVIDE SEPARATE ON/OFF FUNCTIONALITY FOR EACH SWITCH LEG NOTED.
- LOW VOLTAGE MULTI-BUTTON SCENE CONTROL SWITCH WITH DIM UP/DOWN
- OCCUPANCY OR VACANCY SENSOR SWITCH WITH ON/OFF AND DIM UP/DOWN FUNCTIONALITY
- OCCUPANCY OR VACANCY SENSOR SWITCH
- ON/OFF TOGGLE SWITCH
- THREE WAY TOGGLE SWITCH ON/OFF SWITCH
- OCCUPANCY SENSOR, IR, CEILING MOUNT
- OCCUPANCY SENSOR, DUAL TECHNOLOGY, WALL MOUNT
- CONTACTOR
- RELAY
- LIGHTING ROOM CONTROLLER - SUBSCRIPT INDICATES NUMBER OF CONTROL ZONES. PROVIDE ONE RELAY FOR EACH CONTROL ZONE.
- LIGHTING ROOM CONTROLLER (DIMMING) - SUBSCRIPT INDICATES NUMBER OF DIMMING ZONES. PROVIDE ONE RELAY FOR EACH DIMMING ZONE.

ELECTRICAL RISER

- GROUND
- CIRCUIT BREAKER — NUMBER INDICATES TRIP SETTING AND NUMBER OF POLES
- ADJUSTABLE TRIP CIRCUIT BREAKER — NUMBERS INDICATE FRAME SIZE / TRIP SETTING
- FUSED DISCONNECT SWITCH — NUMBERS INDICATE SWITCH SIZE / FUSE SIZE
- PANELBOARD
- CURRENT TRANSFORMER (CT)
- CABLE TO BUS CONNECTION
- AUTOMATIC TRANSFER SWITCH (ATS)
- FEEDER TYPE - REFER TO FEEDER SCHEDULE ON ONE-LINE
- UTILITY METER
- BRANCH CIRCUIT METER
- FEEDER METER
- SURGE PROTECTIVE DEVICE (SPD)
- AVAILABLE SYMMETRICAL FAULT CURRENT IN AMPS

RECEPTACLES

- DUPLEX RECEPTACLE - NEMA 5-15R (NEMA 5-20R FOR DEDICATED CIRCUIT)
- DUPLEX RECEPTACLE - ABOVE COUNTER. COORDINATE W/ ARCH. ELEVATIONS
- DUPLEX RECEPTACLE - DEDICATED (NEMA 5-20R)
- DUPLEX RECEPTACLE - WEATHERPROOF
- DUPLEX RECEPTACLE - TAMPER RESISTANT
- DUPLEX RECEPTACLE - GROUND FAULT CIRCUIT INTERRUPTER
- DUPLEX RECEPTACLE - UNIVERSAL SERIAL BUS
- DOUBLE DUPLEX RECEPTACLE
- DUPLEX RECEPTACLE - CEILING MOUNTED
- DUPLEX RECEPTACLE WITH TOP OUTLET CONTROLLED
- DUPLEX RECEPTACLE - FULLY CONTROLLED
- ABOVE COUNTER DUPLEX RECEPTACLE WITH TOP OUTLET CONTROLLED
- DOUBLE DUPLEX RECEPTACLE WITH ONE DUPLEX CONTROLLED
- DOUBLE DUPLEX RECEPTACLE - FULLY CONTROLLED
- HOSPITAL GRADE DUPLEX RECEPTACLE - NEMA 5-15R (NEMA 5-20R FOR DEDICATED CIRCUIT)
- HOSPITAL GRADE DUPLEX RECEPTACLE - ABOVE COUNTER. COORDINATE W/ ARCH. ELEVATIONS
- HOSPITAL GRADE DUPLEX RECEPTACLE - DEDICATED (NEMA 5-20R)
- HOSPITAL GRADE DUPLEX RECEPTACLE - WEATHERPROOF
- HOSPITAL GRADE DUPLEX RECEPTACLE - TAMPER RESISTANT
- HOSPITAL GRADE DUPLEX RECEPTACLE - GROUND FAULT CIRCUIT INTERRUPTER
- HOSPITAL GRADE DUPLEX RECEPTACLE - UNIVERSAL SERIAL BUS
- HOSPITAL GRADE DOUBLE DUPLEX RECEPTACLE
- HOSPITAL GRADE DUPLEX RECEPTACLE - CEILING MOUNTED
- HOSPITAL GRADE DUPLEX RECEPTACLE WITH TOP OUTLET CONTROLLED
- HOSPITAL GRADE DUPLEX RECEPTACLE - FULLY CONTROLLED
- ABOVE COUNTER HOSPITAL GRADE DUPLEX RECEPTACLE WITH TOP OUTLET CONTROLLED
- HOSPITAL GRADE DOUBLE DUPLEX RECEPTACLE WITH ONE DUPLEX CONTROLLED
- HOSPITAL GRADE DOUBLE DUPLEX RECEPTACLE - FULLY CONTROLLED
- SPECIAL RECEPTACLE - TYPE AS INDICATED
- CORD REEL
- CONTROLLED RECEPTACLE RELAY

EQUIPMENT

- PANELBOARD 277/480V
- PANELBOARD 120/208V OR 120/240V
- CABINET - TYPE AS INDICATED ON PLAN
- SWITCHBOARD
- TRANSFORMER - SIZE AND VOLTAGE AS INDICATED ON PLAN
- HORSEPOWER RATED TOGGLE SWITCH WITH OVERLOAD PROTECTION
- COMBINATION STARTER — HP RATED, 3-POLE, NEMA 1 MINIMUM UNLESS NOTED OTHERWISE - OVERCURRENT PROTECTION AS REQUIRED
- NON-FUSED DISCONNECT SWITCH - SIZE PER CONNECTED LOAD
- FUSED DISCONNECT SWITCH - SIZE PER CONNECTED LOAD. PROVIDE FUSES PER EQUIPMENT NAMEPLATE.
- EQUIPMENT CONNECTION — REFER TO EQUIPMENT CONNECTION SCHEDULE ON GENERAL NOTES SHEET WHEN "XX" IS SHOWN.
- MECHANICAL EQUIPMENT CALLOUT. REFER TO MECHANICAL EQUIPMENT SCHEDULE.
- FLUSH FLOOR BOX
- POKE THRU FITTING
- POKE THRU FITTING WITH FURNITURE FEED
- WALL FURNITURE FEED
- POWER POLE

RACEWAYS

- RACEWAY CONCEALED IN WALL OR CEILING, EXPOSED IN UNFINISHED AREAS
- RACEWAY CONCEALED BELOW FLOOR
- FLEXIBLE CONDUIT FIXTURE WHIP WITH CONDUCTORS
- A-1,3,5 — BRANCH CIRCUIT WIRING SHOWING CIRCUIT HOME RUN TO PANELBOARD. PROVIDE DEDICATED NEUTRAL FOR EACH CIRCUIT.
- RACEWAY TURNING UP
- RACEWAY TURNING DOWN
- CIRCUIT CONTINUATION
- LOW VOLTAGE WIRING
- JUNCTION BOX
- PULL BOX

LOW VOLTAGE SYSTEMS

FIRE ALARM

- MANUAL PULL STATION WITH GUARD
- HORN/STROBE
- HORN/STROBE - CEILING MOUNT
- STROBE
- STROBE - CEILING MOUNT
- BELL
- SMOKE DETECTOR
- DUCT TYPE SMOKE DETECTOR (SUPPLY DUCT U.O.N.)
- FIXED TEMPERATURE HEAT DETECTOR
- ADDRESSABLE RELAY
- MONITOR MODULE
- CONNECTION TO ELECTROMAGNETIC DOOR HOLDER
- CONNECTION TO ELECTROMAGNETIC DOOR HOLDER (MOUNT IN HEAD OF DOOR)
- 'G' INDICATES DEVICE WITH GUARD
- INFRARED BEAM SMOKE DETECTOR TRANSMITTER
- INFRARED BEAM SMOKE DETECTOR RECEIVER

INTERCOM/CLOCK SYSTEM

- CEILING MOUNTED SPEAKER
- CEILING MOUNTED SPEAKER - VANDAL RESISTANT
- WALL MOUNTED SPEAKER
- WALL MOUNTED EXTERIOR SPEAKER (VANDAL RESISTANT & WEATHERPROOF)
- CEILING MOUNTED EXTERIOR SPEAKER (VANDAL RESISTANT & WEATHERPROOF)
- ANALOG CLOCK (12" U.O.N.). 'G' INDICATES WIRE GUARD
- DIGITAL CLOCK/SPEAKER COMBINATION
- 10" DIAMETER EXTERIOR CLASS CHANGE BELL
- INTERCOM CALL BUTTON
- INTERCOM HANDSET

TELECOMMUNICATIONS

- TELECOMMUNICATIONS OUTLET — X = QTY. OF CAT 6 JACKS
- WIRELESS ACCESS POINT - 1 CAT 6 JACK

SECURITY SYSTEM

- DOOR CONTACTS
- INFRARED MOTION DETECTOR
- KEYPAD
- ELECTRIC STRIKE
- CARD READER
- 360° MOTION SENSOR
- MAGNETIC LOCK

CABLE TELEVISION (CATV) SYSTEM

- CATV OUTLET

CLOSED CIRCUIT TELEVISION (CCTV) SYSTEM

- CCTV CAMERA

CLASSROOM AMPLIFICATION SYSTEM

- SOUND AMPLIFICATION SYSTEM INFRARED SENSOR, CEILING MOUNTED
- SOUND AMPLIFICATION SYSTEM SPEAKER, CEILING MOUNTED
- SOUND AMPLIFICATION SYSTEM SPEAKER, WALL MOUNTED

AUDIO/VISUAL SYSTEM

- SMART BOARD
- VIDEO PROJECTOR
- CATV OUTLET & AUDIO-VIDEO JACKS (AV CABINET)
- AUDIO-VIDEO JACKS (DESK)

NURSE CALL SYSTEM

- MEDICAL EMERGENCY PUSHBUTTON STATION
- MEDICAL EMERGENCY CODE BLUE PUSHBUTTON STATION
- EMERGENCY CALL STATION WITH PULL CORD
- PATIENT BED STATION
- STAFF STATION
- DUTY STATION
- AUDIO-VISUAL CONTROL ANNUNCIATOR
- VISUAL CONTROL ANNUNCIATOR
- DOME LIGHT, CEILING MOUNTED
- ZONE LIGHT
- DOME LIGHT, WALL MOUNTED

ELECTRICAL ABBREVIATIONS

AF	AMPERE FRAME	FACP	FIRE ALARM CONTROL PANEL	PS	PROJECTION SCREEN
AFF	ABOVE FINISHED FLOOR	FDMPR	FIRE DAMPER	PTR	PRINTER
AHU	AIR HANDLING UNIT	FH	FUME HOOD	PVC	POLYVINYL CHLORIDE (PLASTIC)
AIC	AMPERE INTERRUPTING CURRENT	FMT	FLEXIBLE METALLIC TUBING	PWR	POWER
AMP	AMPERE	FU or F	FUSE	QTY	QUANTITY
AS	AMPERE SWITCH	FVNR	FULL VOLTAGE NON-REVERSING	RA FAN	RETURN AIR FAN
ASV	AIR SOLENOID VALVE	G	GROUND	RECPT	RECEPTACLE
AT	AMPERE TRIP	GALV	GALVANIZED	REF	REFRIGERATOR
ATS	AUTOMATIC TRANSFER SWITCH	GC	GOGGLE CABINET	REQD	REQUIRED
AWG	AMERICAN WIRE GAUGE	GD	GARBAGE DISPOSAL	RH	RANGE HOOD
BAS	BUILDING AUTOMATION SYSTEM	GEC	GROUNDING ELECTRODE CONDUCTOR	RMC	RIGID METAL CONDUIT
BBO	BACKBOARD OPERATOR	GEN	GENERATOR	RNG	RANGE
BL	BLEACHERS	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	RSD	ROLLING STEEL DOOR
BLDG	BUILDING	GSV	GAS SOLENOID VALVE	SDMPR	SMOKE DAMPER
C	CONDUIT	HH	HAND HOLE	SF	SUPPLY FAN
CAB	CABINET	HID	HIGH INTENSITY DISCHARGE	SOLV	SOLENOID VALVE
CB	CIRCUIT BREAKER	HP	HORSEPOWER	SPD	SURGE PROTECTIVE DEVICE
CCTV	CLOSED CIRCUIT TELEVISION	HPF	HIGH POWER FACTOR	SPEC	SPECIFICATION
CKT	CIRCUIT	HPS	HIGH PRESSURE SODIUM	SPST	SINGLE POLE, SINGLE THROW
CLG	CEILING	HT	HEAT TRACE	ST	SHUNT TRIP
CM	COFFEE MAKER	IH	INSTAHOT	STD	STANDARD
CMU	CONCRETE MASONRY UNIT	IM	ICE MACHINE	STL	STEEL
CO	CONDUIT ONLY	IWD	INTERCOM WALL DISPLAY	SW	SWITCH
COMM	COMMUNICATION	J-BOX	JUNCTION BOX	SWBD	SWITCHBOARD
COP	COPIER	kcmil	THOUSAND CIRCULAR MILS	SWGR	SWITCHGEAR
CT	COOK TOP	kV	KILOVOLT	TEL	TELEPHONE
CT	CURRENT TRANSFORMER	kVA	KILOVOLT AMPERE	TEMP	TEMPORARY
CU	COPPER	kW	KILOWATT	TP	TRAP PRIMER
DCVA	DOUBLE CHECK VALVE ASSEMBLY	kWh	KILOWATT HOUR	TR	TAMPER RESISTANT
DET	DETAIL	MAX	MAXIMUM	TTB	TELEPHONE TERMINAL BOARD
DIA	DIAMETER	MCC	MOTOR CONTROL CENTER	TYP	TYPICAL
DISC	DISCONNECT	MFR	MANUFACTURER	UC	UNDER COUNTER
DSPL	DISPOSAL	MECH	MECHANICAL	UGND	UNDERGROUND
DN	DOWN	MH	MANHOLE; METAL HALIDE	UH	UNIT HEATER
DO	DOOR OPERATOR	MIN	MINIMUM	UL	UNDERWRITERS LABORATORIES
DPST	DOUBLE POLE, SINGLE THROW	ML	MAGNETIC LOCK	UON	UNLESS OTHERWISE NOTED
DRY	DRYER	MLO	MAIN LUGS ONLY	UPS	UNINTERRUPTIBLE POWER SUPPLY
DW	DISHWASHER	MTD	MOUNTED	USB	UNIVERSAL SERIAL BUS
DWG	DRAWING	MTG	MOUNTING	V	VOLT
EA	EACH	MW	MICROWAVE	VA	VOLT AMPERE
EF	EXHAUST FAN	NEC	NATIONAL ELECTRICAL CODE	VFD	VARIABLE FREQUENCY DRIVE
EH	ELECTRIC HEATER	NEUT	NEUTRAL	VM	VENDING MACHINE
EHD	ELECTRIC HAND DRYER	NC	NORMALLY CLOSED	W	WATT
ELEC	ELECTRIC	NIC	NOT IN CONTRACT	WI	WITH
ELEV	ELEVATOR	NO	NUMBER; NORMALLY OPEN	WAC	WASHINGTON ADMINISTRATIVE CODE
EMT	ELECTRICAL METALLIC TUBING	NTS	NOT TO SCALE	WAS	WASHER
EPO	EMERGENCY POWER OFF	OD	OVERHEAD (COILING) DOOR	W/D	STACKED WASHER / DRYER
EQUIP	EQUIPMENT	OF/CI	OWNER FURNISHED / CONTRACTOR INSTALLED	WF	WASH FOUNTAIN
EWC	ELECTRIC WATER COOLER	OF/OI	OWNER FURNISHED / OWNER INSTALLED	WM	WASHING MACHINE
EWH	ELECTRIC WATER HEATER	PF	POWER FACTOR	W/O	WITHOUT
EWS	ELECTRIC WINDOW SHADE	PH or Ø	PHASE	WON	WON DOOR
EXIST	EXISTING	PIV	POST INDICATOR VALVE	WP	WEATHERPROOF; WATERPROOFING
FA	FIRE ALARM	PNL	PANEL	XFMR	TRANSFORMER
FAAP	FIRE ALARM ANNUNCIATOR PANEL	PROJ	PROJECTOR	Z	IMPEDANCE

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SHEET TITLE:

COVER SHEET AND GENERAL INFORMATION

SHEET NO:

E-0.1

SHEET OF X

GENERAL NOTES

THE FOLLOWING GENERAL NOTES APPLY TO ALL DRAWINGS

1. ITEMS NOTED AS "TYPICAL" ON ANY DRAWING REFERS TO ALL DRAWINGS.
2. PROVIDE NYLON PULL STRING IN ALL EMPTY RACEWAYS.
3. NO STRUCTURAL MEMBERS SHALL BE CUT OR ALTERED WITHOUT PRIOR APPROVAL OF THE ARCHITECT AND STRUCTURAL ENGINEER.
4. ALL RACEWAYS WITHIN THE BUILDING SHALL BE RUN OVERHEAD U.O.N. RACEWAYS SHALL NOT BE RUN UNDER THE FLOOR SLAB UNLESS SPECIFICALLY SHOWN ON THE DRAWINGS.
5. NO RACEWAYS SHALL BE RUN IN FLOOR SLABS.
6. LOCATIONS OF ALL WALL MOUNTED DEVICES ARE SHOWN SCHEMATICALLY. COORDINATE WITH THE ARCHITECTURAL DRAWINGS, ELEVATIONS AND CASEWORK SUPPLIERS SHOP DRAWINGS FOR EXACT LOCATION OF DEVICES PRIOR TO ROUGH-IN.
7. ALL RACEWAYS IN FINISHED SPACES SHALL BE CONCEALED.
8. PROVIDE 2" EMT SLEEVES FOR LOW VOLTAGE WIRING RUNNING THROUGH NON-RATED WALLS, FLOORS AND CEILINGS.
9. PROVIDE SLEEVES WITH APPROVED FIRE STOPPING AT EACH LOCATION WHERE LOW VOLTAGE WIRING PENETRATES A RATED WALL OR CEILING.
10. SEAL ALL PENETRATIONS IN RATED FLOORS AND CEILINGS WITH A UL APPROVED FIRE STOP SYSTEM.
11. PROVIDE A COMPLETE DESIGN-BUILD PATHWAY SYSTEM FOR ALL LOW VOLTAGE WIRING, SEE SPECIFICATIONS. QUANTITY AND SIZE OF RACEWAYS SHOWN ON LOW VOLTAGE SYSTEMS PLANS ARE THE MINIMUM TO BE PROVIDED. CONTRACTOR SHALL PROVIDE ALL RACEWAYS AS REQUIRED.
12. ALL LOW VOLTAGE WIRING NOT RUN IN A METALLIC RACEWAY SHALL BE PLENUM RATED.
13. ALL EQUIPMENT, LUMINAIRES, RACEWAYS, DEVICES, ETC. SHALL BE UL LISTED.
14. MOUNT ALL DEVICES ABOVE COUNTERS 6" ABOVE BACKSPLASH UNLESS NOTED OTHERWISE.
15. ALL CONTROLLED RECEPTACLES SHALL BE PERMANENTLY LABELED AS REQUIRED TO BY THE NEC.
16. REFER TO ARCHITECTURAL DRAWINGS FOR DEVICE MOUNTING HEIGHTS.

DEMOLITION PLANS

THE FOLLOWING GENERAL NOTES APPLY TO ALL DEMOLITION PLAN DRAWINGS

1. THE CONTRACT DOCUMENTS DO NOT SHOW ALL REQUIRED DEMOLITION WORK. THE CONTRACTOR SHALL SURVEY THE EXISTING CONDITIONS AND ESTABLISH THE EXTENT OF DEMOLITION PRIOR TO BID.
2. WHERE "ALL ELECTRICAL SYSTEMS" ARE NOTED TO BE REMOVED FROM AN AREA REMOVE ALL FIXTURES, DEVICES, EQUIPMENT, RACEWAYS, AND WIRING UNLESS OTHERWISE NOTED.
3. REMOVE ALL ELECTRICAL DISTRIBUTION EQUIPMENT, RACEWAYS, AND CONDUCTORS AS SHOWN ON THE EXISTING ONE-LINE DIAGRAM.
4. REMOVE ALL TEMPORARY WORK INSTALLED DURING THE COURSE OF CONSTRUCTION.
5. REMOVE CONNECTIONS TO MECHANICAL EQUIPMENT AS SHOWN ON THE MECHANICAL DEMOLITION PLANS.
6. EXISTING DEVICES TO BE DEMOLISHED SHOWN BOLD. REMOVE DEVICE, RACEWAY AND WIRING BACK TO SOURCE, UON.
7. WHERE EXISTING RECEPTACLES ARE REMOVED, MAINTAIN CONTINUITY TO RECEPTACLES ON THE SAME CIRCUIT TO REMAIN.
8. WHERE EXISTING LUMINAIRES ARE REMOVED, MAINTAIN CONTINUITY TO FIXTURES ON THE SAME CIRCUIT TO REMAIN.
9. WHERE EXISTING LOW VOLTAGE DEVICES ARE REMOVED, MAINTAIN CONTINUITY TO OTHER DEVICES.

SITE PLANS

THE FOLLOWING GENERAL NOTES APPLY TO ALL SITE PLAN DRAWINGS

1. COORDINATE ROUTING OF UNDERGROUND RACEWAYS WITH ALL NEW AND EXISTING UTILITIES. REFER TO CIVIL DRAWINGS.
2. CONTRACT WITH A LOCATOR SERVICE TO MARK THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO EXCAVATION.
3. ALL SITE LIGHTING RACEWAYS SHALL BE 1" C. U.O.N.
4. ROUTE ALL SITE LIGHTING CIRCUITS VIA LIGHTING CONTROL SYSTEM.
5. PROVIDE ALL REQUIRED CUTTING, PATCHING, EXCAVATION, COMPACTION, AND PATCHING FOR INSTALLATION OF UNDERGROUND RACEWAYS AND UTILITY SERVICES.
6. BACKFILL ALL TRENCHES (INCLUDING THOSE FOR UTILITY SERVICES) WITH STRUCTURAL BACKFILL OR GRAVEL BORROW PER WSDOT STANDARDS.
7. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL COORDINATION WITH THE SERVING UTILITY COMPANIES INCLUDING COMPLETING AND SUBMITTING ALL NECESSARY APPLICATIONS FOR SERVICE.
8. CONTRACTOR TO OBTAIN ALL REQUIRED PERMITS AND EASEMENTS.

DOOR HARDWARE

1. PROVIDE ALL RACEWAYS AND WIRING REQUIRED TO INSTALL ELECTRONIC DOOR HARDWARE. REFER TO DOOR HARDWARE SPECIFICATIONS, SCHEDULES AND DIAGRAMS.

LIGHTING CONTROL PANELS (LCP)

1. DOWNSTREAM OF A PANELBOARD WITH AN AIC RATING OF 14,000 ASYM OR LESS: LOCATE LCP A MINIMUM OF 2'-0" FROM THE PANELBOARD.
2. DOWNSTREAM OF A PANELBOARD WITH AN AIC RATING GREATER THAN 14,000 ASYM: LOCATE A LCP A MINIMUM OF 10'-0" FROM THE PANELBOARD.

LIGHTING REQUIREMENTS

THE FOLLOWING GENERAL NOTES APPLY TO ALL LIGHTING PLAN DRAWINGS

1. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS AND ELEVATIONS FOR EXACT LOCATION OF LUMINAIRES.
2. WHERE THERE IS A CONFLICT ARCHITECTURAL PLANS SHALL GOVERN.
3. COORDINATE THE FINAL LOCATION OF LUMINAIRES IN MECHANICAL ROOMS AND ATTIC SPACES TO AVOID CONFLICTS WITH DUCT WORK, PIPING, AND MECHANICAL EQUIPMENT.
4. ROUTE ALL EXTERIOR LIGHTING CIRCUITS VIA LIGHTING CONTROL PANEL.
5. INSTALL AND WIRE REMOTE DRIVERS. REFER TO LUMINAIRE SCHEDULE. MOUNT IN ACCESSIBLE LOCATIONS. SHOW LOCATIONS ON THE AS-BUILT DRAWINGS.

POWER REQUIREMENTS

THE FOLLOWING GENERAL NOTES APPLY TO ALL POWER PLAN DRAWINGS

1. CIRCUIT ALL FIRE/SMOKE DAMPERS AND SMOKE DAMPERS FROM NEAREST 120V EMERGENCY PANEL WITH ¾"- 3#12. UTILIZE SPARE 20A-1P BREAKER PROVIDED. RECORD CIRCUITING ON AS-BUILT PANEL SCHEDULES AND DRAWINGS. REFER TO MECHANICAL DRAWINGS FOR DAMPER LOCATIONS.
2. COORDINATE LOCATIONS OF BAS CONTROL POWER WITH THE CONTROLS CONTRACTOR PRIOR TO ROUGH-IN.
3. PRIOR TO ORDERING EQUIPMENT OR ROUGH-IN, COORDINATE WITH THE MECHANICAL CONTRACTOR TO ESTABLISH THE ACTUAL LOAD AND OVERCURRENT PROTECTION REQUIREMENTS FOR EACH PIECE OF EQUIPMENT.
4. REFER TO MECHANICAL EQUIPMENT CONNECTION SCHEDULE FOR EQUIPMENT RATINGS AND FEEDER SIZES.
5. PROVIDE DISCONNECT SWITCH OR COMBINATION STARTER FOR EACH PIECE OF EQUIPMENT AS SHOWN ON MECHANICAL EQUIPMENT CONNECTION SCHEDULE.
6. PRIOR TO ROUGH-IN OF ALL EQUIPMENT SPECIFIED BY OTHER DIVISIONS, COORDINATE WITH THE EQUIPMENT MANUFACTURER TO ESTABLISH ALL REQUIREMENTS FOR EACH PIECE OF EQUIPMENT.
7. ALL EXTERIOR RECEPTACLES SHALL BE WP/GFCI.
8. ALL EXTERIOR DISCONNECTS/STARTERS SHALL BE NEMA 3R.
9. FEEDER ROUTING SHOWN IS APPROXIMATE. COORDINATE WITH MECHANICAL SYSTEMS AND BUILDING STRUCTURE. PROVIDE OFFSETS AS REQUIRED.
10. ALL RECEPTACLES WITHIN 6 FEET OF A SINK SHALL BE GFCI TYPE.
11. COORDINATE WITH THE ELEVATOR SHOP DRAWINGS AND THE ELEVATOR INSPECTOR PRIOR TO ROUGH-IN OF THE ELEVATOR MACHINE ROOM.
12. ALL HEAT TRACE AND SNOW MELT EQUIPMENT CIRCUITS SHALL BE FED WITH GFPE CIRCUIT BREAKERS.
13. PROVIDE 120-1φ HARDWIRED CONNECTION TO EACH TRAP PRIMER FROM NEAREST ADJACENT GENERAL RECEPTACLE CIRCUIT UTILIZING ¾" - 3#12. REFER TO MECHANICAL DRAWINGS FOR LOCATIONS. RECORD CIRCUITING ON AS-BUILT PANEL SCHEDULES AND DRAWINGS.

KITCHEN REQUIREMENTS

1. COORDINATE THE EXACT LOCATION OF ALL KITCHEN EQUIPMENT CONNECTIONS WITH FOOD SERVICE ROUGH-IN PLANS AND ARCHITECTURAL ELEVATIONS.
2. VERIFY POWER AND ROUGH-IN REQUIREMENTS OF ALL KITCHEN EQUIPMENT WITH THE KITCHEN EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN.
3. ALL 120V AND 208V SINGLE PHASE RECEPTACLES 50 AMPERES OR LESS AND ALL THREE PHASE RECEPTACLE 100 AMPERES OR LESS INSTALLED IN THE KITCHEN SHALL HAVE GFCI PROTECTION AT THE PANEL OR AT THE DEVICE.
4. PROVIDE ALL ELECTRICAL CONNECTIONS AND WIRING AS SHOWN ON FOOD SERVICE ROUGH-IN PLANS AND SPECIFICATIONS.
5. WIRING METHODS FOR CLASS 1 HOODS SHALL COMPLY WITH NFPA 96.
6. ALL DEVICE PLATES SHALL BE STAINLESS STELL.

EQUIPMENT CONNECTIONS

1. PROVIDE ALL RACEWAYS, WIRING AND ANCILLARY EQUIPMENT AS SHOWN ON MANUFACTURER SHOP DRAWINGS.
2. PROVIDE HARDWIRED CONNECTION, RECEPTACLE OR FUSED DISCONNECT SWITCH AS SHOWN ON MANUFACTURER SHOP DRAWINGS.

DESIGN BUILD FIRE ALARM SYSTEM

1. THE CONTRACTOR SHALL PROVIDE A COMPLETE DESIGN BUILD FIRE ALARM SYSTEM (DEVICES, RACEWAYS AND WIRING) PER THE FIRE MARSHAL'S REQUIREMENTS.
2. PROVIDE THE FOLLOWING IN ADDITION TO THE REQUIREMENTS OF THE FIRE MARSHAL:
   - 2.A. COMPLETE AREA SMOKE DETECTOR COVERAGE. FIRE SPRINKLERS CANNOT BE USED IN LIEU OF SMOKE DETECTORS.
   - 2.B. PULL STATIONS AT ALL EXITS.
3. THE CONTRACTOR'S SCOPE SHALL INCLUDE ALL NEW/REMODELED AREAS AND ANY REQUIRED UPGRADES TO THE EXISTING SITE/BUILDINGS.
4. THE DEVICES AND RACEWAYS SHOWN ON THE DRAWINGS ARE FOR GENERAL INFORMATION ONLY TO ASSIST THE CONTRACTOR IN PREPARING HIS BID. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE A COMPLETE DESIGN BUILD SYSTEM.
5. THE CONTRACTOR SHALL PROVIDE ALL CUTTING, PATCHING AND PAINTING REQUIRED TO ALLOW FOR INSTALLATION OF THE SYSTEM.
6. FIRE ALARM SYSTEM WIRING SHALL BE RUN IN CONTINUOUS METALLIC RACEWAYS.
7. PROVIDE ADDRESSABLE DUCT DETECTOR AT EACH FIRE/SMOKE DAMPER (FSD) AND SMOKE DAMPER (SD) LOCATION. REFER TO MECHANICAL DRAWINGS FOR LOCATIONS.
8. PROVIDE FA CONNECTION TO FIRE SPRINKLER TAMPER, FLOW, AND PRESSURE SWITCHES. REFER TO MECHANICAL DRAWINGS FOR LOCATIONS.
9. PROVIDE EXTERIOR FIRE ALARM BELL AND STROBE AT LOCATION DIRECTED BY FIRE MARSHAL.

LOW VOLTAGE SYSTEMS REQUIREMENTS

THE FOLLOWING GENERAL NOTES APPLY TO ALL LOW VOLTAGE SYSTEMS PLAN DRAWINGS

1. MINIMUM RACEWAY SIZE SHALL BE 1" FOR TELECOMMUNICATIONS CABLING AND ¾" FOR ALL OTHER SYSTEMS.
2. ALL SYSTEMS WIRING EXCEPT FIRE ALARM SHALL BE RUN UTILIZING OPEN WIRING METHOD ABOVE ACCESSIBLE CEILINGS. PROVIDE METALLIC RACEWAYS FOR WIRING INSTALLED IN WALLS, ABOVE INACCESSIBLE CEILING, WHERE EXPOSED OR WHERE SUBJECT TO PHYSICAL DAMAGE. RACEWAY FILL SHALL NOT EXCEED 40%.
3. PROVIDE ¾" A-C FIRE RETARDANT PLYWOOD ON ALL FOUR WALLS OF THE MDF AND EACH IDF. MOUNT 8' DIMENSION VERTICAL. PAINT FLAT WHITE.
4. PROVIDE 1½" C. FROM EACH FLOOR BOX OR POKE THRU TO ACCESSIBLE CEILING LOCATION. THIS IS IN ADDITION TO THE RACEWAYS SHOWN ON THE DRAWINGS.
5. ALL EXTERIOR DEVICES SHALL BE WEATHERPROOF.
6. PROVIDE CONNECTION TO FIRE SPRINKLER DOUBLE CHECK VALVE ASSEMBLIES AND PIV'S. REFER TO CIVIL/MECHANICAL DRAWINGS FOR LOCATIONS.
7. STAPLES SHALL NOT BE USED TO SECURE LOW VOLTAGE CABLING.

ONE-LINE DIAGRAM

1. PROVIDE PULL BOXES AS REQUIRED BY THE NEC.
2. SHORT CIRCUIT CURRENTS LESS THAN 10,000 ASYM FOR 208V PANELS AND 14,000 ASYM FOR 480V PANELS ARE NOT SHOWN.
4. THE ONE-LINE DIAGRAM IS DIAGRAMMATIC AND DOES NOT SHOW THE ACTUAL ROUTING OF THE RACEWAYS.
5. FOR TWO SECTION PANELS PROVIDE FULL SIZE FEEDER CONNECTIONS FROM SECTION 1 TO SECTION 2.
6. THE ELECTRICAL DISTRIBUTION SYSTEM SHALL BE FULLY RATED. A SERIES RATED SYSTEM IS NOT ACCEPTABLE.
7. ALL TRANSFORMERS ARE 480V 3 PHASE 3 WIRE PRIMARY: 208Y/120V 3 PHASE, 4 WIRE SECONDARY, DOE 2016 RATED, U.O.N.
8. NOT ALL CIRCUIT BREAKERS ARE SHOWN. REFER TO PANEL AND SWITCHBOARD SCHEDULES FOR OTHER LOADS SERVED, AND SPARE CIRCUIT BREAKERS.
9. CONTRACTOR TO PROVIDE COORDINATION AND ARC FLASH STUDY. ALL DISTRIBUTION SYSTEM EQUIPMENT SHALL BE RATED FOR THE AVAILABLE FAULT CURRENT AND SHALL BE LABELED WITH THE ARC FLASH HAZARD CATEGORY AND AVAILABLE FAULT CURRENT. ALL NEC 700 AND 701 PORTIONS OF THE DISTRIBUTION SYSTEM SHALL BE SELECTIVELY COORDINATED.
10. SET ALL OVERCURRENT DEVICES PER THE COORDINATION STUDY.
11. TEST ALL GROUND FAULT RELAYS AS REQUIRED BY THE WAC.
12. TRANSFORMER SECONDARY CONDUCTORS SHALL BE NO MORE THAN 10-FEET LONG PER NEC ARTICLE 240.21 (C) 2.
13. CIRCUIT BREAKERS RATED 800 AMPS OR MORE: PROVIDE ELECTRONIC TRIP UNIT WITH ADJUSTABLE LONG TIME, SHORT TIME AND INSTANTANEOUS (LSI) TRIP FUNCTIONS. PROVIDE GROUND FAULT PROTECTION (G) WHERE CALLED OUT ON THE ONE-LINE DRAWING. TRIP UNITS SHALL BE FIELD REPLACEABLE.
14. CIRCUIT BREAKERS RATED 1200 AMPS OR MORE: PROVIDE TRIP UNIT WITH A MAINTENANCE MODE SWITCH WITH LED INDICATOR LIGHT WHICH OVERRIDES THE TRIP SETTINGS IN ORDER TO MINIMIZE THE ARC FLASH HAZARD DURING MAINTENANCE. TRIP UNITS SHALL BE FIELD REPLACEABLE.
15. PROVIDE GROUNDING AND BONDING OF ELECTRICAL POWER DISTRIBUTION EQUIPMENT PER NEC ARTICLE 250.
16. PROVIDE COMMISSIONING FOR THE ENERGY METERING SYSTEM IN ACCORDANCE WITH C408.6. ENERGY METERING SYSTEM SHALL BE VERIFIED FOR ACCURACY PRIOR TO INTEGRATION WITH THE BMS SYSTEM.
17. CONTROLS CONTRACTOR TO INTEGRATE ENERGY METERING WITH THE BMS SYSTEM. COORDINATE WITH THE MECHANICAL CONTROLS CONTRACTOR TO INTEGRATE THE ENERGY METERING SYSTEM INTO THE BMS.

BRANCH CIRCUIT WIRING

THE FOLLOWING GENERAL NOTES APPLY TO ALL DRAWINGS

1. IN GENERAL ONLY CIRCUIT NUMBERS HAVE BEEN SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED RACEWAYS AND WIRING.
2. SHOW ALL RACEWAYS AND WIRING ON AS-BUILT DRAWINGS.
3. MINIMUM RACEWAY SIZE SHALL BE ¾".
4. NO MORE THAN 7 #12 AWG CONDUCTORS SHALL BE INSTALLED IN A RACEWAY.
5. HOMERUNS GREATER THAN 75 FEET TO THE FIRST DEVICE SHALL BE NO. 10 AWG.
6. LIGHTING, POWER, AND MECHANICAL EQUIPMENT CONDUCTORS SHALL NOT BE COMBINED IN THE SAME RACEWAY.
7. PROVIDE A GROUND CONDUCTOR IN ALL RACEWAYS.
8. PROVIDE A DEDICATED NEUTRAL CONDUCTOR FOR EACH BRANCH CIRCUIT.
9. PROVIDE CONDUCTORS AS REQUIRED TO PROVIDE CIRCUITING AND SWITCHING DUTY AS SHOWN ON THE DRAWINGS.
10. FOR OTHER THAN 15 OR 20 AMP SINGLE PHASE RECEPTACLE BRANCH CIRCUITS PROVIDE A DEDICATED HOMERUN TO THE PANEL.
11. FOR 30 AMP BRANCH CIRCUITS PROVIDE #10 AWG CONDUCTORS.
12. FOR 40 AMP AND LARGER BRANCH CIRCUITS PROVIDE RACEWAYS AND WIRING AS SHOWN ON THE DRAWINGS.
13. GENERAL:
    - 13.A. 120V BRANCH CIRCUIT HOMERUNS GREATER THAN 90 FEET TO THE FIRST DEVICE SHALL HAVE CONDUCTORS INCREASED ONE GAUGE SIZE FOR EVERY 60' OF LENGTH.
    - 13.B. 208V BRANCH CIRCUIT HOMERUNS GREATER THAN 125 FEET TO THE FIRST DEVICE SHALL HAVE CONDUCTORS INCREASED ONE GAUGE SIZE FOR EVERY 75' OF LENGTH.
    - 13.C. 277V BRANCH CIRCUIT HOMERUNS GREATER THAN 175 FEET TO THE FIRST DEVICE SHALL HAVE CONDUCTORS INCREASED ONE GAUGE SIZE FOR EVERY 100' OF LENGTH.
    - 13.D. 480V BRANCH CIRCUIT HOMERUNS GREATER THAN 300 FEET TO THE FIRST DEVICE SHALL HAVE CONDUCTORS INCREASED ONE GAUGE SIZE FOR EVERY 200' OF LENGTH.
    - 13.E. LIGHTING, POWER AND MECHANICAL EQUIPMENT CONDUCTORS SHALL NOT BE COMBINED IN THE SAME RACEWAY.
    - 13.F. PROVIDE A GROUND CONDUCTOR IN ALL RACEWAYS.

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POTENTIA-VIRIDI BATTERY ENERGY STORAGE SYSTEM

LEVY ALAMEDA, LLC

NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION

PROJ. NO. 232059
DRAWN
CHECKED
DATE XX/XX/25

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SHEET TITLE:
GENERAL NOTES

SHEET NO:
E-0.2

SHEET OF X

LIGHTING NOTES

1. THIS LIGHTING PLAN HAS BEEN DESIGNED SPECIFICALLY FOR THIS SITE AND IS BASED ON THE INTERPRETATION THAT THIS SITE FALLS INTO THE CATEGORY OF "LIGHTING ZONE 1" (I.E. RURAL AND LOW DENSITY, AGRICULTURAL ZONE DISTRICTS) AS DEFINED IN THE ANSI/IES LIGHTING PRACTICE: ENVIRONMENTAL CONSIDERATIONS FOR OUTDOOR LIGHTING (ANSI/IES LP-11-20).
2. TYPE PA1 FIXTURES (20'-0" POLE HEIGHT) ARE SPACED APPROXIMATELY 75 FEET ON CENTER. THIS RESULTS IN AN AVERAGE ILLUMINATION LEVEL OF 1.27 FOOT-CANDLES WITH A MINIMUM OF .4 FOOT-CANDLES.
3. LIGHTING POLES ARE LOCATED ALONG THE PERIMETER OF THE SITE TO ILLUMINATE THE ROAD AND ORIENTED WITH THE LUMINAIRE TOWARD THE BATTERY YARD. HOWEVER, THE BATTERY YARD IS NOT ILLUMINATED SPECIFICALLY.
4. AS CURRENTLY SPECIFIED, THE LUMINAIRE HAS A CUT-OFF TYPE PHOTOMETRIC DISTRIBUTION "TIGHT" TO ILLUMINATE THE ROAD TO MINIMIZE SPILL LIGHT. THIS RESULTS IN CLOSER FIXTURE SPACING TO MITIGATE LIGHT TRESPASS AND GLARE TO THE SURROUNDING AREA.
5. FIXTURES ARE LOCATED MORE THAN 2 MOUNTING HEIGHTS FROM THE PROPERTY LINE. THEREFORE, B-U-G REQUIREMENTS FOR THE FIXTURES ARE DETERMINED TO BE B=N/A, U=0, G=1.
6. THE POLE MOUNTED LUMINAIRES MAY REQUIRE A DIFFERENT PHOTOMETRIC DISTRIBUTION/FIXTURE SPACING OR ADDITIONAL SHIELDING ACCESSORIES TO FURTHER MITIGATE GLARE IN THE FINAL DESIGN. THE LUMINAIRES SPECIFIED IN THE LUMINAIRE SCHEDULE HAVE OPTICAL DISTRIBUTION AND SHIELDING OPTIONS AVAILABLE TO MITIGATE GLARE. THE LUMINAIRE SPECIFICATION TO BE STUDIED FURTHER AND CONFIRMED IN FUTURE PROJECT PHASES.
7. A COMPLETE PHOTOMETRIC STUDY WILL BE INCLUDED IN FUTURE PROJECT PHASES.
8. IN ORDER FOR THE LUMINAIRES TO HAVE THE INTERNATIONAL DARK-SKY ASSOCIATION FIXTURE "SEAL OF APPROVAL", THE LUMINAIRE COLOR TEMPERATURE MUST BE 3000K OR LOWER AND BE CAPABLE OF DIMMING TO 10% OF FULL POWER.
9. A REFLECTANCE STUDY TO BE COMPLETED IN THE FINAL DESIGN.
10. LIGHTING TO BE CONTROLLED BY A COMBINATION OF ASTRONOMICAL TIME CLOCK AND MOTION SENSORS. LIGHTING CONTROL DESIGN TO BE INCLUDED IN FUTURE PROJECT PHASES.

GENERAL NOTES

1. REFER TO ADDITIONAL NOTES ON DRAWING E0.2.
2. THE UNDERLINED LUMINAIRE IN THE SCHEDULE REPRESENTS THE "BASIS OF DESIGN". ALL OTHER MANUFACTURERS LISTED MUST MEET OR EXCEED ALL REQUIREMENTS OF THE BASIS OF DESIGN.
3. VERIFY THE VOLTAGE OF ALL LUMINAIRES. REFER TO PLANS FOR SPECIFIC VOLTAGE REQUIREMENTS.
4. ALL LUMINAIRES TO BE PROVIDED WITH A CUSTOM COLOR/FINISH AS SELECTED BY THE ARCHITECT, UNLESS OTHERWISE NOTED.
5. ALL LUMINAIRES TO BE UL LISTED AND LABELED. EXTERIOR LUMINAIRES TO BE UL "WET" LABELED.
6. LUMINIARES SHALL BE PROVIDED WITH AN INTERNAL DISCONNECTING MEANS WHICH COMPLIES WITH NEC ARTICLE 410.
7. ALL LUMINAIRES TO HAVE AN INTEGRAL DRIVER UNLESS A REMOTE DRIVER IS SPECIFIED.
8. PROVIDE GLARE SHIELDS FOR ALL POLE MOUNTED LUMINAIRE.
9. REFER TO THE SPECIFICATIONS AND DRAWINGS FOR ADDITIONAL REQUIREMENTS.

SPECIAL REQUIREMENTS FOR ALL LED LUMINAIRES

1. MINIMUM CRI SHALL BE 80.
2. MANUFACTURER SHALL PROVIDE A 5-YEAR WARRANTY.
3. LUMINAIRES SHALL COMPLY WITH ROHS (RESTRICTION OF THE USE OF HAZARDOUS SUBSTANCES IN ELECTRICAL AND ELECTRONIC EQUIPMENT) REGULATIONS. APPLICABLE FOR LEED PROJECTS ONLY.
4. MINIMUM LUMENS PER WATT EFFICACY SHALL BE 70%.

Type	Description	Lamp Type	Ballast/Driver	Dimming Type	WATTS/VA	Manufacturer	Series/Catalog	Schedule Notes	CEI Design Notes	Location
PA1	20'-0" POLE WITH LED AREA LUMINAIRE - SINGLE HEAD DIE-CAST ALUMINUM HOUSING AND HEAT SINK. POWDERCOAT FINISH. DISTRIBUTION: TYPE 3 WITH SPILL CONTROL. FIXTURE TO HAVE OPTION FOR ADDITIONAL GLARE ACCESSORIES. FIXTURE TO HAVE	51W LED 3000K 5299 LUMENS 70 CRI	INTEGRAL DIMMING DRIVER	0-10V 10%-100% dimming range	51/51	LITHONIA	"DSX1" SERIES			ROAD WAY / PATH WAY
PB1	20'-0" POLE WITH LED AREA LUMINAIRE - SINGLE HEAD DIE-CAST ALUMINUM HOUSING AND HEAT SINK. POWDERCOAT FINISH. DISTRIBUTION: TYPE 5 LOW GLARE. FIXTURE TO HAVE OPTION FOR ADDITIONAL GLARE ACCESSORIES.	51W LED 3000K 7630 LUMENS 70 CRI	INTEGRAL DIMMING DRIVER	0-10V 10%-100% dimming range	51/51	LITHONIA	"DSX1" SERIES			ROAD WAY / PATH WAY
WA1	WALL MOUNTED LED LED LUMINAIRE DIE-CAST ALUMINUM HOUSING AND THERMAL MANAGEMENT. VISUAL COMFORT WIDE DISTRIBUTION.	15W LED 3000K 1809 LUMENS 70 CRI	INTEGRAL DIMMING DRIVER	0-10V 10%-100% dimming range	15/15	LITHONIA	"WDGE LED" SERIES			BUILDING EXTERIOR

NOTES:
FIXTURE SPECIFICATIONS WILL REQUIRE ADDITIONAL REVIEW IN FINAL LIGHTING DESIGN TO CONFIRM COMPLIANCE WITH REQUIRED B-U-G RATINGS.

LIGHTING TYPE NOMENCLATURE

EXAMPLE DESIGNATION: RA1

FUNCTION
- E = EMERGENCY (EXIT SIGNS, BUGEYES)
- C = COVE
- D = DOWNLIGHT
- H = HANGING/PENDANT
- R = RECESSED
- S = SURFACE
- U = UNDERCABINET
- T = TRACK
- W = WALL

- P = POLE
- B = BOLLARD/POST
- G = IN-GROUND (INGRADE)

- X = EXEMPT
- Z = CUSTOM

VARIANT (1-9)

TYPE (A-Z)

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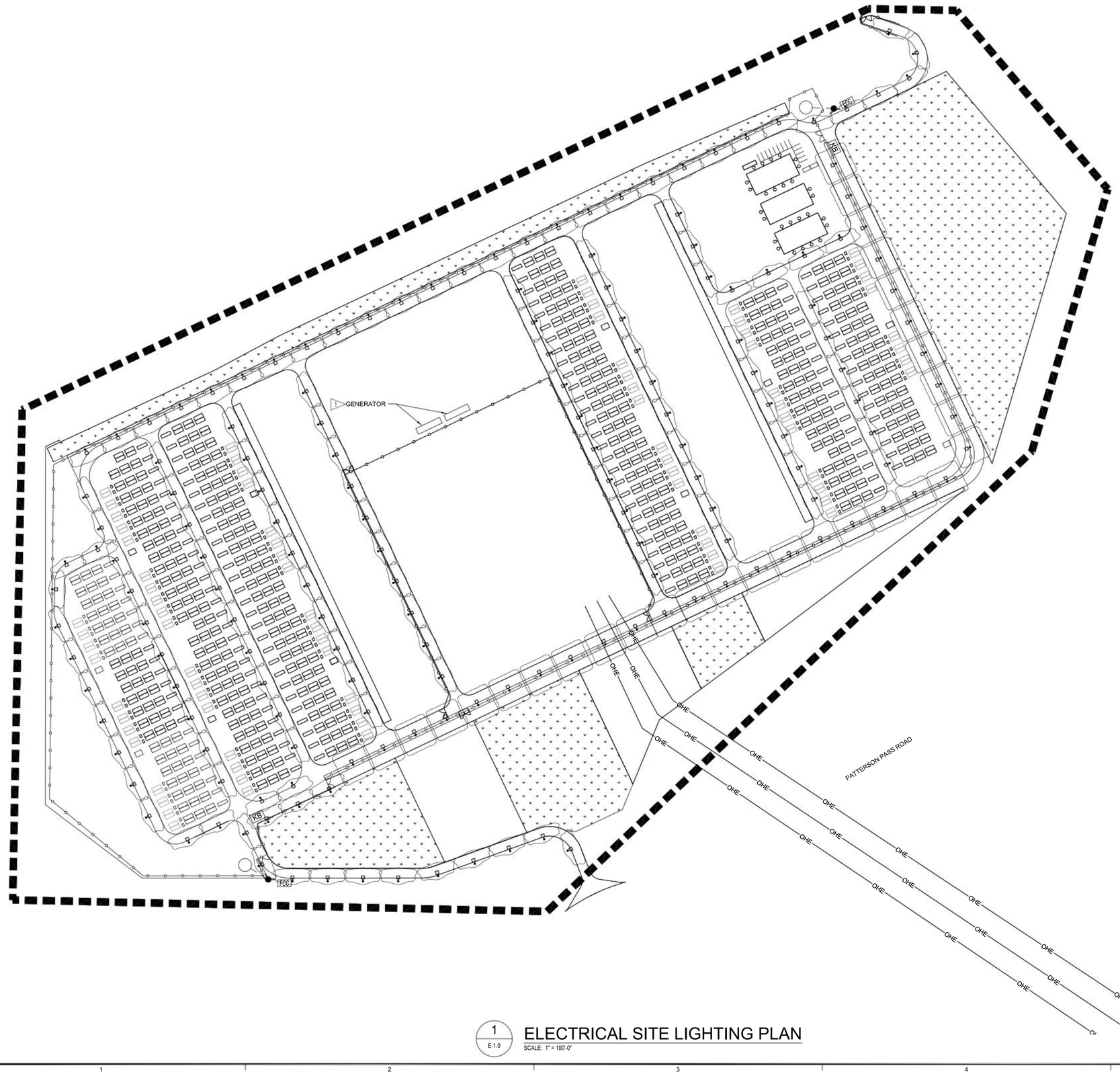
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SHEET TITLE:
LUMINAIRE SCHEDULE

SHEET NO:
E-0.3

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LIGHTING LEGEND

PA1 - POLE MOUNTED LED WITH TYPE III DISTRIBUTION

PA2 - POLE MOUNTED LED WITH TYPE V DISTRIBUTION

WA1 - WALL MOUNTED LED

FLAG NOTES

1. ILLUMINATION AROUND GENERATOR IS ACCOMPLISHED VIA GENERATOR ENCLOSURE MOUNTED LUMINAIRES PROVIDED BY GENERATOR ENCLOSURE VENDOR.

1 / E-1.0 — ELECTRICAL SITE LIGHTING PLAN

SCALE: 1" = 100'-0"

100 50 0 100 200

SCALE: 1 INCH = 100 FEET

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SHEET TITLE:

ELECTRICAL SITE LIGHTING PLAN

SHEET NO:

E-1.0

SHEET OF X

Appendix 5.15B

Revegetation and Habitat Restoration Plan

Temporary Impact Revegetation and Habitat Restoration Plan

Potentia-Viridi Battery Energy Storage System Facility Project

JANUARY 2025

Prepared for:

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
amsl	above mean sea level
Applicant	Levy Alameda, LLC
BESS facility	Potentia-Viridi Battery Energy Storage System Facility
BMP	best management practice
Cal-IPC	California Invasive Plant Council
CEQA	California Environmental Quality Act
CNPS	California Native Plant Society
EIR	Environmental Impact Report
ESA	Environmentally Sensitive Area
gen-tie	overhead intertie transmission
kV	kilovolt
MW	megawatt
MWh	megawatt-hour
NWI	National Wetlands Inventory
O&M	operations and maintenance
PEP	plant establishment period
PG&E	Pacific Gas and Electric
POI	Point of Interconnection
QSP	Qualified Stormwater Practitioner
SWPPP	Stormwater Pollution Prevention Plan
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WRCC	Western Regional Climate Center

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1 Introduction

This Temporary Impact Revegetation and Habitat Restoration Plan (Plan) outlines the on-site revegetation strategy for the proposed Potentia-Viridi Battery Energy Storage System Facility (BESS facility) Project (Project), in Alameda County, California. This Plan identifies the approach for habitat restoration in temporary impact areas (Restoration Project) associated with Project construction. The Plan outlines Project temporary impacts, restoration implementation actions, success criteria, monitoring and maintenance, and reporting in support of Project's AB 205 application process and in conformance with mitigation measures included in the Environmental Impact Report (EIR) pursuant to the California Environmental Quality Act (CEQA) Guidelines.

1.1 Project Location

The Project would be in eastern unincorporated Alameda County, California within a portion of Assessor Parcel Number (APN) 99B-7890-002-04 located at 17257 Patterson Pass Road, southwest of Interstate 580 and Interstate 205 (Figure 1, *Regional Location* and Figure 2, *Project Site*). Development of the BESS facility would occur on approximately 70 acres of APN 99B-7890-002-04, which is currently comprised of fallowed annual grasslands suitable for grazing. The gen-tie line would extend southeast from the Project substation, crossing Patterson Pass Rd, and then proceed east to the Point of Interconnection (POI) at the Tesla Substation. The Project's gen-tie line would be sited on APNs 99B-7890-2-4, 99B-7890-2-6, and 99B-7885-12. Land uses in the immediate vicinity of the Project include undeveloped rural agricultural lands, multiple high-voltage transmission lines and electrical substations, rural roads, and railroad lines. The nearest municipality to the Project site is the City of Tracy approximately 2.5 miles to the northeast. There are a few single-family residences near the Tesla Substation's southern and eastern boundaries. The nearest residence is about 1,500 feet southeast of the Project site and 560 feet south of the proposed gen-tie line; it is owned by the same landowner leasing the lands for the Project.

The Project location was selected due to it being large enough to support development of the Project, its proximity to existing electrical infrastructure and the Tesla Substation, thereby minimizing length of the proposed gen-tie line to the POI, and because it is located immediately adjacent to existing roadways for construction and O&M access.

1.2 Project Description

The Project would involve construction, operation, and eventually repower or decommission of the 400-megawatt (MW) BESS facility and associated infrastructure on approximately 85 acres in eastern Alameda County. The primary components of the Project include an up to 3,200 megawatt-hour (MWh) BESS facility, an operations and maintenance (O&M) building, a project substation, a 500 kilovolt (kV) overhead intertie transmission (gen-tie) line, and interconnection facilities within the Pacific Gas and Electric (PG&E) owned and operated Tesla Substation.

The Project would draw electricity from the power grid to charge and store electrical energy and discharge back to the power grid when the stored energy is needed. The Project would provide several benefits to the power grid, including reducing the need to operate natural gas power plants to balance intermittent renewable generation and serving as an additional capacity resource that would enhance grid reliability.

The Project would be remotely operated and monitored year-round and be available to receive or deliver energy 24 hours a day and 365 days a year. During the operational life of the Project, qualified technicians would routinely inspect the Project facilities and conduct necessary maintenance to ensure reliable and safe operational readiness.

1.2.1 Project Objectives

The primary purpose of the Project is to assist the State of California in meeting its goal of reducing statewide annual greenhouse gas emissions from the electric sector to 25 million metric tons by 2035. The Project will help balance electricity generation from renewable sources, such as wind and solar, with electricity demand by storing excess generation from emissions free power sources and delivering it back to the grid when demand exceeds real-time generation supply. The Project displaces the need for additional fossil fuel based generating stations needed to serve peak demand periods when renewable sources may be inadequate or unavailable.

The Project Objectives are:

- Construct and operate an economically viable, and commercially financeable, 400-MW battery energy storage facility in Alameda County with an interconnection at the Tesla Substation.
- Assist California electric utilities in meeting obligations under California's Renewable Portfolio Standard Program and Senate Bills 100 and 1020, which require renewable energy sources and zero-carbon resources to supply 60% of all retail sales of electricity to California end-use customers by December 31, 2030, 90% of all retail sales of electricity to California end-use customers by December 31, 2035, 95% of all retail sales of electricity to California end-use customers by December 31, 2040, and 100% of all retail sales of electricity to California end-use customers by December 31, 2045.
- Assist California utilities in meeting obligations under the CPUC's Mid-Term Reliability Procurement Requirements.
- Develop an electricity storage facility in close proximity to a utility grid-connected substation with existing capacity available for interconnection to minimize environmental impacts.
- Relieve grid congestion, and enhance electricity reliability, without requiring the construction of new regional transmission infrastructure or substantial network upgrades.
- Construct and operate a battery energy storage facility in Alameda County, resulting in economic benefits to the County, creating prevailing wage construction jobs, and facilitating local community benefits.

1.2.2 Project Components

The Project would include construction, O&M, and eventual decommissioning of a 400 MW BESS with an energy storage capacity up to 3,200 MWhs. Charging from or discharging to the electrical grid would be a 500kV gen-tie connecting the project substation to the POI within the existing PG&E Tesla Substation. The BESS Facility would include the following components:

- Battery Energy Storage System (BESS) Enclosures
- Power Conversion Systems
- Medium voltage Collection System
- Project Substation, Control Building, and Telecommunications Facilities

- Access Roads
- Laydown Yards
- Stormwater Facilities and Outfall
- Site Security and Fencing, including fire detection system
- Operations and Maintenance Building

1.3 Restoration Goals and Revegetation Requirements

The objective of on-site restoration is to restore vegetation communities that were temporarily impacted during Project construction activities. Restoration aims to foster growth of appropriate native plant species that were known to be present before impacts occurred, or that are otherwise deemed appropriate based on the respective sites' location and quality of surrounding habitats. The goal of this restoration/revegetation project are as follows:

1. Comply with the requirements outlined in the Project permits and in conformance with mitigation measures included in the CEQA document;
2. Revegetate temporary impact areas with vegetation communities of similar or higher functions and services than those vegetation communities temporarily impacted by the Project;
3. Ensure vegetation communities are self-sustaining and functional beyond the maintenance and monitoring period.

This Plan proposes to conduct revegetation activities within approximately 6.7 acres of temporarily impacted vegetation communities. Temporarily impacted vegetation communities will be mitigated in place at a 1:1 ratio per the requirements of the Project permits. Temporary impacts will be mitigated in-kind to restore vegetation communities to similar or higher functions than the baseline condition. Temporary impact revegetation areas will be subject to weed and invasive plant control, trash removal, erosion control, and seeding as necessary in accordance with this plan. Areas mapped as wild oats and annual brome grassland will be seeded with native plant species appropriate for local habitat conditions and climate and will be evaluated for success in accordance with their pre-project status as non-native grassland vegetation communities.

As described in Section 3.2, *Biological Resources*, of the Project-specific Environmental Impact Report (EIR), biological surveys at the Project site indicate that several special-status plant and wildlife species have the potential to occur within the temporary impact revegetation areas. Of particular concern within the temporary impact revegetation areas is the potential for California red-legged frog (CRFL; *Rana draytonii*) and California tiger salamander (CTS; *Ambystoma californiense*) to use these areas for upland dispersal given the presence of suitable grassland habitat. Because these sites will be disturbed by construction activities prior to revegetation implementation, the potential for presence is reduced due to the initial disturbance and subsequent decline in habitat suitability. However, to ensure full avoidance of CRFL and CTS as well as other special-status species that may occur, mitigation measures included in the EIR will continue to be required until temporary impact areas are fully restored. These mitigation measures include exclusion zones around aquatic habitat, preconstruction surveys, biological monitoring, barrier fencing, inspection of open trenches, and other avoidance and minimization measures that will reduce potential adverse effects to amphibians that utilize the site as upland refuge and overland migration habitat during construction of the Project. Special-status species avoidance measures are discussed further below in Section 3.2.2.

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2 Baseline Information

2.1 Regional Land Use Setting

The Project site is currently undeveloped, and the regional land use has remained largely unchanged since the 1980s based on aerial imagery (Google Earth Pro 2023). The PG&E Tesla substation is directly east; along the western Project boundary there are transmission lines running northeast to southwest; Patterson Pass Road follows the eastern boundary; there is a railroad line to the south and a gravel access road to the north. The gen-tie alignment connecting the BESS facility to the PG&E substation crosses Patterson Pass Road, Patterson Run (an ephemeral stream channel), and runs northwest to southeast to the southwestern corner of the substation. The site and surrounding land have been used for cattle grazing. The area of the BESS facility and immediately south of the substation is not currently being grazed, while much of the gen-tie alignment is currently used as cattle pasture. The nearest city is Tracy, approximately 8 miles to the east.

2.2 Climate and Rainfall

The Project site is within a Mediterranean climate where annual temperatures range from 38.3°F to 92.6°F (Western Regional Climate Center [WRCC] 2023). According to the Tracy Pumping Plant (049001) Weather Station Gauge, yearly precipitation averages 12.03 inches, with the highest average rainfall recorded in January (2.54 inches) (WRCC 2023). The past winter season has had higher than average rainfall.

2.3 Soil and Terrain

The Project site is relatively flat, with an approximate elevation of 403 to 536 feet above mean sea level (amsl). According to the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service, three soil types are present: Linne clay loam, 3% to 15% slopes; Linne clay loam, 15% to 30% slopes, MLRA 15; Rincon clay loam, 0% to 3% slopes, and Pescadero clay (USDA 2023a). The Linne series consists of moderately deep, well drained soils that formed in material from soft shale and sandstone. The Rincon series consists of deep, well drained soils that formed in alluvium from sedimentary rock. None of the four soil types mapped on site are included on the USDA list of hydric soils (USDA 2023b) commonly associated with wetlands or other waters.

2.4 Hydrology and Watershed

The Project site occurs within the North Diablo Range of the Alameda Creek Watershed (U.S. Geological Survey [USGS] 2023). According to the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI), there are several freshwater ponds, freshwater wetlands, and riverine aquatic features in the vicinity of the Project (USFWS 2023). The NWI is based on coarse aerial mapping and does not involve ground-truthing. The national hydrography dataset shows Patterson Run and one other stream system crossing the Project site from south to north. Patterson Runn is an ephemeral stream system that runs parallel to Patterson Road adjacent to the Project site, which connects to the California Aqueduct systems to the north of the Project site.

2.5 Vegetation Communities

Only one vegetation community was mapped in the Project site: wild oats and annual brome grassland (*Avena* spp. – *Bromus* spp. Herbaceous Semi-Natural Alliance; California Native Plant Society [CNPS] 2023; Figure 3, *Biological Setting*). This community, often referred to as California annual grassland, is characterized by an herbaceous layer dominated by non-native grass species including wild oats (*Avena* spp.), bromes (*Bromus* spp.), and barleys (*Hordeum* spp.). The herbaceous layer is less than 1.2 meters in height and cover is open to continuous (CNPS 2023). Annual grassland covers the entire Project site.

3 Implementation Plan

This section describes the restoration activities that will be implemented for temporary impacts to vegetation communities following the completion of construction activities within the Project site. The temporary impact revegetation areas shall receive initial removal of invasive non-native species biomass and seeding of native species, followed by a three-year maintenance and monitoring program. Revegetation will be achieved through a process that includes delineation of the vegetation restoration boundaries, removal of gravel placed temporarily during Project construction activities, removal of weeds and invasive plant species, and restoration of soil contours to their pre-project condition. Following construction and prior to the installation of revegetation materials, soil compaction will be alleviated through ripping the top 12 inches of soil with ripping shanks spaced no further than 24 inches apart to provide suitable growing conditions for native plants. Alternatives to soil ripping may be explored prior to revegetation and depending on the level of soil compaction post construction. Alternatives to soil ripping may include, but are not limited to addition of organic matter, cover cropping, deep root-establishing plant species, or other aeration techniques. Excessive compaction and potential lack of topsoil availability may necessitate soil testing, importing topsoil, and/or soil amendments.

Upon conclusion of soil preparation work, the temporary impact revegetation areas will be seeded using the methods and species described herein. Following seeding, the temporary impact revegetation areas will be maintained by the Restoration Contractor during the 120-day plant establishment period (PEP) and for the three-year maintenance and monitoring period following approval of the PEP to ensure successful establishment and site cover. Each component of the implementation plan is outlined in more detail below.

3.1 Project Implementation Personnel

3.1.1 Permittee/Project Manager

Levy Alameda, LLC (Applicant) is the permittee and as such shall oversee mitigation implementation and shall be responsible for the successful completion of this mitigation and monitoring program. Program management shall be provided by the Applicant, who shall be financially responsible for implementation and management of this Restoration Project.

3.1.2 Project Biologist

A qualified restoration biologist (Project Biologist) shall implement the restoration and monitoring components of this Plan. The Project Biologist shall review all aspects of pertinent Project documents, including but not limited to site mapping, and submittals prior to Restoration Project implementation.

The Project Biologist shall oversee and coordinate implementation of this Plan and oversee/perform field monitoring of Restoration Project implementation and biological monitoring throughout the maintenance and monitoring period. The Project Biologist shall possess specific knowledge of restoration ecology and be able to demonstrate experience with similar mitigation projects. The Project Biologist shall possess at least 5 years of habitat restoration experience in the northern California/East Bay Area and within similar vegetation communities.

The Project Biologist shall inform all Project personnel of all on-site environmental and regulatory restrictions and conditions during implementation of this Plan. The Project Biologist shall inform all Project personnel of the presence or potential presence of sensitive species and vegetation communities within, or adjacent to, the Project area. Biological monitoring shall occur throughout implementation of this Restoration Project. Monitoring time may increase or decrease as required by field conditions and implementation activities. During implementation, the Project Biologist, via the Applicant Project Manager, shall have authority to stop work in situations where biological resources not authorized to be impacted are in imminent danger of impacts from installation activities.

3.1.3 Restoration Contractor

A qualified Restoration Contractor shall implement the mitigation activities outlined in this Plan, including installation and maintenance. A contractor possessing a valid California-landscape contractor's license, who has previous experience with similar and successful native habitat restoration in the region shall provide restoration actions and associated labor. Restoration Contractor staff must be able to identify California native plants, target invasive non-native species, and demonstrate knowledge of habitat restoration techniques.

The Restoration Contractor shall be responsible for conformance to (1) this Plan and (2) the Project's permit requirements. The Restoration Contractor's responsibility for installation shall continue until successful completion and final acceptance by the Applicant and by the Project Biologist at the end of the initial implementation effort. The Restoration Contractor shall not be released from installation obligations until written notification is received from the Applicant that all required implementation tasks as defined in this Plan and the Project permits have been successfully completed. The Restoration Contractor shall conduct maintenance and remedial work during the monitoring and maintenance period as indicated herein and per the Project Biologist's recommendations.

3.2 Site Preparation

3.2.1 Site Access

Access to the site for revegetation shall be from existing disturbed areas within the Project site and shall not incur new impacts to vegetation communities. All proposed access routes shall be pre-approved by the Applicant and the Project Biologist. The restoration staff shall stake and fence access routes with orange Environmentally Sensitive Area (ESA) fencing if sensitive vegetation communities or sensitive biological resources are adjacent and at risk of impact.

3.2.2 Special-Status Species Avoidance

Based on biological surveys conducted for the Project including Protocol-Level Rare Plant, CRFL and CTS Habitat Assessment surveys, protocol-level burrowing owl (*Athene cunicularia*) surveys, several special-status plant and wildlife species have the potential to occur within the temporary impact revegetation areas. As a part of Project construction, several avoidance and minimization measures are required to avoid impacts or reduce impacts to these species to a less than significant level. Section 3.2, *Biological Resources*, of the Project-specific EIR includes mitigation measures MM-BIO-1 through MM-BIO-3 to reduce impacts to special-status plant and wildlife species during project construction. These requirements, including special-status plant avoidance (MM-BIO-1), general avoidance measures for East Alameda County Conservation Strategy focal species (MM-BIO-2), and amphibian

avoidance and minimization measures for CTS and CRLF during construction (MM-BIO-3), would continue to apply to the Project through completion of revegetation activities at the temporary impact revegetation areas.

These measures ensure that a qualified biologist survey's the temporary impact revegetation areas prior to revegetation activities and if individual CTS and/or CRLF are found, site work will not begin until the individuals are moved out of the area. Additionally, a USFWS approved biologist shall be present for initial ground disturbing activities and ESA fencing will either left in place from construction or be constructed around the revegetation areas to prevent individual CTS and/or CRLF from entering the work areas. Finally, among other avoidance measures, initial ground disturbance (i.e., removal of non-native species and soil preparation) should be prioritized in areas of suitable habitat for CTS and/or CRLF prior to October 15th (or the first measurable fall rain of 1 inch or greater).

3.2.3 Revegetation Area Fencing

Following removal of construction infrastructure (e.g. gravel), temporary impact revegetation areas susceptible to traffic of any kind shall be delineated and protected by erecting barriers and/or signs as necessary to prevent ongoing disturbance. The Applicant and Project Biologist will determine the type of barriers (i.e. silt fencing or fiber rolls) needed to promote successful revegetation.

3.2.4 Initial Removal of Non-Native Species

Implementation of this Plan shall include an initial non-native invasive plant and thatch removal effort, followed by regular control of new seedlings and re-sprouts over the maintenance period. The initial removal effort shall focus on all temporary impact revegetation areas. A combination of physical removal and herbicide treatment shall be used to control any non-native invasive plants that have recruited into the temporary impact areas since construction activities were completed. Weed eradication will be performed a minimum of 10 days prior to initiating seed application when herbicide is used.

Physical removal of non-native plants, including the roots, may be the best method for those plant species for which the rootball can readily be pulled out along with the aboveground portions of the plant. These species shall be physically removed before seed-set. If hand removal is possible only after seed-set, then seed heads shall be cut off, bagged, and removed from the site. Physical removal of the plants and their roots should only be done when non-native plants are growing separate from desirable natives and when their root systems are not intertwined.

Herbicides shall be used for the invasive exotic plant species that have root systems that regenerate from small root fragments or that are impractical to remove. Any herbicide use shall be conducted using methods that minimize effects to adjacent/desirable native species, such as brush application or spot spraying. Only herbicides registered for aquatic use can legally be used in locations where herbicide may come in contact with open water.

All herbicide treatment shall be performed in compliance with all applicable federal and state laws and regulations, safety precautions, and pesticide label directions. The Restoration Contractor shall possess a valid California Qualified Applicator Certificate or Qualified Applicator License, and Pest Control Business License or Maintenance Gardener Pest Control Business License, as appropriate. The Restoration Contractor shall refer to the specific pesticide label for information on proper timing, application rates, and use restrictions. Should the Restoration Contractor require a specific pest control recommendation for any control effort, the restoration staff shall consult a licensed Pest Control Adviser for a written recommendation.

Follow-up control measures will likely be necessary for invasive plant species with extensive root systems that cannot be killed with one herbicide application. Follow-up herbicide treatment shall be done at the biologically appropriate time when the recovering plants are still relatively small and before they have time to regain strength and vigor, and will be conducted regularly as part of the maintenance portion of this Plan.

3.2.5 Soil Preparation

Soil preparation prior to seeding will be prioritized to temporary impact revegetation areas where soil compaction is deemed problematic for plant establishment and growth by the Project Biologist, and to areas temporarily covered by a gravel surface. Soils shall be mechanically disced or ripped to alleviate compaction and provide a roughened soil surface. When necessary, track walking for soil compaction on slopes shall be conducted perpendicular to the anticipated flow of surface water runoff. All non-natural, inorganic debris will be removed from the temporary impact revegetation areas. If thatch remains on the soil surface that would inhibit seed-soil contact (e.g. >25% cover) thatch will be removed to below 25% cover. Locations that meet the objectives described in this section following construction will not require additional actions as approved by the Project Biologist.

3.3 Installation of Native Seed Mix

Seeding with an appropriate native seed mix will occur after the initial site preparation as described above in Section 3.2, has been completed. Seed mixes were selected with a focus on establishing native vegetation communities and controlling erosion and non-native plant species. Seed shall be locally collected or sourced from within 50 miles of the Project site to maintain genetic integrity.

Once the site has been appropriately prepared, seeding will occur via hydroseeding. Hydromulch shall be free of synthetic or plastic materials and contain no germination or growth inhibiting factors. It shall not contain more than 7 percent ash as determined by the Technical Association of the Pulp and Paper Industry Standard T 413 and shall contain less than 250 parts per million boron. It shall be colored with nontoxic water-soluble green dye to provide a proper gauge for the metering of material over ground surfaces. It shall have the property of being evenly dispersed and suspended when agitated in water. Water content of the hydromulch before being mixed into the slurry shall not exceed 15 percent of its dry weight and shall comply with the manufacturer's specifications. Hydromulch shall contain a tackifier. The slurry may be altered for site-specific needs if approved by the Project Biologist in consultation with the Applicant. In the case that hydroseeding is not considered necessary due to small revegetation area sizes, hand seeding may be considered for the revegetation areas. Any areas that receive hand seeding will be raked prior to and after seed distribution to maximize seed soil contact.

Revegetation areas are shown in Figure 4, *Revegetation Plan*. The temporary impact revegetation areas will be seeded using a native grassland mix to mimic native species and natural species composition present in nearby vegetation communities within the regional vicinity of the Project site. Table 1 outlines the proposed seed mix.

Table 1. Grassland Revegetation Seed Mix

Botanical Name	Common Name	Minimum PLS	Pounds Per Acre
Amsinckia intermedia	common fiddleneck	25%	3
Asclepias fascicularis	narrow leaf milkweed	50%	2
Bromus sitchensis var. carinatus	California brome	85%	6

Castilleja exserta	purple owl's clover	25%	0.5
Croton setiger	doveweed	85%	1
Elymus triticoides	creeping wildrye	80%	6
Eschscholzia californica	California poppy	85%	1
Festuca microstachys	small fescue	85%	5
Hordeum brachyantherum	meadow barley	80%	6
Lasthenia californica	California goldfields	50%	0.5
Lupinus bicolor	bicolored lupine	90%	1
Melica californica	California melic	65%	6
Stipa pulchra	purple needlegrass	75%	6
		Total Pounds per Acre	**44**

3.3.1 Seed Application

The Project Biologist, or designee, shall inspect and approve the labels for the seed mix prior to mixing and application. Initial seed application shall consist of hydroseeding. The Restoration Contractor shall consult the Project Biologist and Applicant if a given species on the plant palette is not available for inclusion into the initial seed mix installation and the Project Biologist may recommend a substitute or increase the rate of selected species.

All seeds shall be clearly labeled showing type of seed, test date, the name of the supplier, and percentage of the following: pure seed, crop seed, inert matter, weed seed, noxious weeds, and total germination content. All material shall be delivered to the site in original, unopened containers bearing the manufacturer's guaranteed analysis. Installation implementation should be prioritized to occur prior to the onset of the winter rainy season, ideally between October and January. Installation timing will be coordinated between the Restoration Contractor, Project Biologist, and Applicant. Temporary irrigation is not planned for the temporary impact revegetation areas, so timing of the seeding after summertime temperatures have declined and prior to the onset of winter rainfall is critical for successful seed germination and establishment.

Hydroseeding shall take place within the temporary impact revegetation areas as shown in Figure 4 Seed application locations should be based on a combination of GPS data, field conditions, and communication with the Project Biologist.

3.4 Erosion Control

The hydroseed mix will be installed promptly after site preparation work is completed and following placement of any necessary erosion control materials (e.g. fiber rolls or silt fence). Fiber rolls will be composed entirely biodegradable material. They will be free of nylon/plastic netting and mesh and be certified free of noxious weeds. The location of the Best Management Practices (BMPs) within temporary impact revegetation areas will be determined by the Project Biologist and Applicant, and, or in accordance with the project's Stormwater Pollution Prevention Plan (SWPPP) and Qualified Stormwater Practitioner (QSP).

3.5 Revegetation Schedule

An outline of the anticipated revegetation installation sequence and schedule is provided in Table 2 below. Weed and invasive species removal, site cleanup, soil preparation and ripping, and BMP installation will occur prior to seed installation. Seed installation is best performed prior to the winter rainy season, between October and January, to maximize seed germination, seedling survival, and plant growth. In general, revegetation will begin within 30 days upon completion of construction activities. Erosion control will be performed continually as outlined in the project SWPPP until the Notice of Termination is filed and accepted. The three-year biological monitoring and maintenance period will commence upon completion of the 120-day PEP.

Table 2. Revegetation Schedule

Task Description	Anticipated Work Period
Order Seed	9–12 months prior to anticipated installation
Site preparation	Within 30 days of construction completion
Seeding	Within 60 days of construction completion
120-Day Plant Establishment Period (PEP)	Commence upon approval of all installation work
3-Year Maintenance and Monitoring program	Commence upon successful completion of 120-day PEP

4 Maintenance Plan

This maintenance plan section provides direction for maintenance and monitoring activities to be performed during the initial 120-day PEP and the three-year maintenance and monitoring period that follows. The three-year maintenance and monitoring period begins when the Project Biologist and Applicant certify that the revegetation installation work and 120-day PEP have been completed in conformance with this Plan and applicable environmental documents and Project permits. The three-year maintenance and monitoring period will include non-native plant species control, trash removal, general maintenance, and additional erosion control, as necessary. The temporary impact revegetation areas at the Project site shall be subject to the requirements specified in this Plan.

Since the goal of this Plan is to reestablish natural self-sustaining vegetation communities, the maintenance effort included in this Plan is concentrated in the first few seasons of plant growth following the restoration efforts, when weeds can easily out-compete native plants. The intensity of required maintenance activity is expected to subside each year as the native plant materials become more established and localized competition from non-native plants for resources in the temporary impact revegetation areas is minimized through control of non-native plants.

4.1 120-Day Plant Establishment Period

The Restoration Contractor will begin the 120-day PEP following completion and acceptance of the revegetation installation work. Maintenance during this period includes controlling weeds and invasive species, litter removal, boundary fence maintenance and repair, and BMP maintenance and repair. At a minimum, maintenance will be performed biweekly during the 120-day PEP. The Restoration Contractor shall review the temporary impact revegetation areas monthly with the Project Biologist. At the end of the 120-day PEP the Restoration Contractor shall review the site with the Applicants representative and Project Biologist. If all work has been completed as outlined herein, the Applicant and Project Biologist will deem the PEP complete.

4.2 Three-Year Maintenance Period

Following successful completion of the 120-day PEP, the Restoration Contractor will maintain the temporary impact revegetation areas for three continuous years. Site maintenance shall occur regularly throughout the maintenance and monitoring period and will be directed by the Project Biologist. A minimum maintenance schedule is shown in Table 3; however, regular monitoring shall occur through the three years, and the Project Biologist may recommend that maintenance occur more often if determined necessary.

Table 3. Minimum Maintenance Schedule

Maintenance Task	Year 1	Year 2	Year 3
Target invasive non-native species abatement	Bimonthly[2]	Quarterly	Quarterly
Erosion control[1]	As-needed	As-needed	As-needed (not required)
General site maintenance	Bimonthly[2]	Quarterly	Quarterly

[1] Maintenance of erosion control sites is anticipated to cease after 2 years. Remedial erosion control activities are anticipated to be focused after large storm events during the winter rainy season.
[2] Bimonthly = every 2 months during the growing season, quarterly outside the growing season.

Maintenance activities shall begin with site preparation actions and shall continue throughout the maintenance and monitoring period, concluding once success criteria have been met. Contractor maintenance activities shall be conducted every other month during the growing season of Year 1 of the Restoration Project, and quarterly outside the growing season on Year 1 and during Years 2 and 3.

All maintenance performed throughout the year shall comply with applicable wildlife regulations, such as the Migratory Bird Treaty Act. If the Project Biologist determines that certain maintenance activities cannot be performed in compliance with environmental regulations, work shall be postponed until conditions allow, or until the restrictive period has ended for the season.

4.2.1 Weed Control

An integrated and adaptive vegetation management approach will be implemented to effectively control weed species throughout the mitigation area. The approach will use a combination of techniques, including hand removal, mechanical methods, and chemical treatment (as permitted), to effectively control target weed species. Weed control is proposed to occur within all temporary impact revegetation areas (Figure 4).

The control method(s) used will vary depending on several variables, including the species targeted for control, the overall area to be treated/removed, time of year, and proximity to sensitive resources. The Restoration Contractor, through consultation with the Project Biologist, will provide properly timed treatment to control non-native plant species, eliminate reinfestation, and adequately deplete the non-native seedbank. The least environmentally impactful methods will be prioritized when controlling non-native plant species, consistent with integrated pest management practices.

All non-native plants species will be targeted for control. Priority invasive annual and perennial plants include species listed on the California Invasive Plant Council (Cal-IPC) Inventory (Cal-IPC 2021). Priority invasive plant species that are present within the Project site include, but are not limited to fennel, mustards, thistles, and annual invasive grasses.

Hand Removal

Hand removal/physical extraction of non-native plant species will be used around dense groupings of native species or clusters to be protected in place, amid standing water, or where other control methods are impractical or would cause damage to the native species. Special care will be taken not to trample adjacent native vegetation while hand removing non-native plant species. The Restoration Contractor is required to discern between native and

non-native vegetation to prevent unauthorized impacts to native habitat. The Project Biologist may assist with plant species identification, on an infrequent and as-needed basis.

Physical removal of whole plants, including the roots, is the best method for early germinators and species with a root ball that is underdeveloped and can be readily pulled out by the aboveground portions of the plant with a limited amount of soil disturbance. Minimization of soil disturbance, which may stimulate germination of existing non-native seed lying dormant in the soil, should occur.

Annual non-native plant species will be targeted for hand-removal and will be physically removed before seed-set (spring and summer). Maintenance efforts will be timed with non-native plant life cycles to effectively control plants prior to seed-set. If hand removal is possible only after seed-set, then seed heads will be cut off, bagged, and removed from the site prior to biomass removal.

Mechanical Methods

Mechanical control includes removing herbaceous plant species with string-trimmers and cutting large shrubs and trees to grade with chainsaws or handheld loppers. Use of string-trimming is effective for biomass removal in large areas devoid of, or significantly low in, native cover. Cutting with chainsaws or loppers is intended for initial removal of large woody biomass and is usually used in conjunction with cut-stump herbicide application to prevent resprout. Cut biomass will require removal and disposal in an approved disposal facility. Use of string trimmers is not anticipated following planting and seeding due to the potential for collateral damage to emerging natives or establishing container plants. String trimming will only be allowed during the maintenance period in areas approved by the Project Biologist.

Chemical Treatment

Chemical treatment will be used for highly invasive non-native plants with root systems that make physical removal impractical. Herbicide treatment is also beneficial because it does not disturb the surface soils, which might expose buried and dormant seed. The Project Biologist will coordinate with the Restoration Contractor to identify specific locations where herbicides may be used. Herbicide treatment may follow hand and mechanical removal activities that are conducted to increase the effectiveness of subsequent chemical treatment. Herbicide treatment will be prescribed on a case-by-case basis.

Follow-up applications may be necessary for highly aggressive species. Follow-up herbicide treatment will be conducted when the recovering non-native invasive vegetation is still relatively small, before it has time to regain strength and vigor.

Herbicide treatments will follow all federal and state laws and regulations, label directions, and safety precautions. Herbicide application will only be performed under the direction of a state-certified qualified pesticide applicator and will comply with state and local regulations. The qualified pesticide applicator will be licensed with a Pest Control Business License issued by the State of California Department of Pesticide Regulation.

4.2.2 Trash and Debris Removal

During each scheduled maintenance visit, the Restoration Contractor will remove any trash and debris that has accumulated in the temporary impact revegetation areas. Removal shall be required for the duration of the 3-year

maintenance and monitoring period. Natural debris such as leaf litter and woody debris will be left on site to decompose as they provide valuable microhabitats for invertebrates, reptiles, small mammals, and birds. In addition, the decomposition of deadwood and leaf litter is essential for the replenishment of soil nutrients and minerals. Any thatch that has accumulated due to weed control efforts shall be removed from the site the same day it is cut and disposed of in a legal manner.

4.2.3 Site Protection/Access Control

The temporary impact revegetation areas within the Project site occur on private properties in unincorporated Alameda County, indicating a very low likelihood for unauthorized access by anyone not associated with Project maintenance or operation into the revegetation areas. Unauthorized access within the temporary impact revegetation areas will be reported to the Applicant, and enforcement of access restrictions will be the responsibility of the Applicant. The Applicant may coordinate with the Restoration Contractor if any access control measures are required.

4.2.4 Pest Management

Control of vertebrate pests is not anticipated during the three-year maintenance and monitoring period, nor are insect pests anticipated to cause significant enough damage to warrant control. Non-native wildlife species are considered invasive when they threaten native biodiversity by disrupting or altering native ecological communities and have negative consequences for native species and habitats. Invasive non-native wildlife species may outcompete, prey upon, or disturb the habitat of native wildlife and may spread diseases.

If any plant diseases or pests become significant enough to warrant control, the Restoration Contractor will consult with a licensed pest control adviser for specific control measures, which will be conducted in coordination with the Project Biologist and Applicant, and will follow all applicable laws, regulations, label directions, and safety precautions. Additionally, excessive loss of plant material as a result of herbivory shall be brought to the attention of the Project Biologist and the Applicant to determine appropriate control measures.

4.2.5 Adaptive Management

Should any temporary impact revegetation area not meet interim performance standards or final success criteria at any point during the maintenance and monitoring program, contingency measures may be implemented at the discretion of the Project Biologist and in consultation with the Applicant. Remedial measures may include but are not limited to supplemental seeding, soil tilling, additional erosion control BMPs, increased weed control frequency, and supplemental watering, among other things.

If unforeseen changes in site conditions or other components of the Restoration Project cause final success criteria to not be met, the Project Biologist shall prepare an analysis of the cause(s) of failure(s) and propose remedial actions to correct the problem(s) in coordination with the Applicant. Substantial progress toward the success criteria along with habitat functions consistent with pre-project conditions may be relied upon to allow for project sign off.

5 Monitoring Plan

The following monitoring plan will be implemented as part of the 120-day PEP and subsequent three-year monitoring and maintenance program, which are scheduled to commence immediately following successful installation. The Project Biologist, or their designee, shall make regular site visits during revegetation activities. The Project Biologist shall review activities for conformance to this Plan, and applicable environmental permit conditions. The results of each site visit shall be communicated to the Applicant. Photo-documentation of site conditions will be conducted, as needed.

5.1 Monitoring Methods

Monitoring of the temporary impact revegetation areas shall consist of qualitative and quantitative field monitoring visits conducted by the Project Biologist, or their designee, to assess the performance criteria as outlined below in Section 5.2. Qualitative monitoring will occur monthly during the 120-day PEP and quarterly throughout the duration of the three-year program. Quantitative monitoring will be conducted once annually during the late spring to early summer at each temporary impact revegetation area. The Project Biologist shall provide a complete summary of the results of monitoring activities completed in the prior year period in an annual monitoring report.

Following each site visit, the Project Biologist shall generate a brief site observation report, detailing the condition of the sites and any maintenance and/or remedial actions required to meet annual performance goals. Copies of the site observation report shall be provided to DWR for distribution to the restoration staff.

5.1.1 Qualitative Monitoring

Qualitative monitoring of the temporary impact revegetation areas will consist of general site assessments, evaluation of seedling recruitment, soil moisture content, presence/absence of plant pests or diseases, erosion issues, presence of non-native or invasive plant species, trash or debris accumulation, and wildlife use. All qualitative monitoring visits to the temporary impact revegetation areas shall be documented with a site observation report that includes photos, which shall be forwarded to the Restoration Contractor and Applicant. Any Restoration Project deficiencies shall be noted in the site observation report, with accompanying recommendations for maintenance or remedial actions. All significant observations will be included in the annual monitoring report.

5.1.2 Quantitative Monitoring

Quantitative monitoring will be used to assess vegetation establishment within the temporary impact revegetation areas. Quantitative monitoring will determine total native species cover and composition and total non-native species cover and composition. Quantitative monitoring will be conducted using visual cover estimates to assess Project status by revegetation area compared to the annual performance standards and track progress toward Restoration Project completion. Permanent photo points will be established within representative temporary impact revegetation areas so vegetation development and cover can be visually documented during the three-year maintenance and monitoring period. The quantitative monitoring visit shall be conducted annually in the late spring or early summer beginning in Year 1 and extending through Year 3 of the maintenance and monitoring period.

5.2 Performance Standards

The stated performance standards for the revegetation areas are based on evaluation of pre-existing and adjacent vegetation communities. Performance standards will be used to help assess the annual progress of the sites towards Restoration Project completion. The performance standards for years 1 and 2 are considered interim performance standards. Fulfillment of these interim standards will indicate that the revegetation is progressing toward the long-term goals of the Plan. If revegetation efforts fail to meet the interim performance standards listed, the Project Biologist shall consider remedial actions which may be implemented (e.g., supplemental seeding, increased weed control frequency, changes to cultural practices) to enhance the vegetation communities to a level in conformance with these standards. Ultimate success of the Restoration Project would be represented by the revegetation of the sites meeting the Year 3 performance standards (Table 4).

Table 4. Performance Standards for Grassland Revegetation Areas

Year	Native Species Absolute Cover	Non native Species Absolute Cover[1]	Total Plant Cover[2]	Site Stability
1	10%	< 15% of Cal-IPC rated high or moderate perennial species	70% of pre-project cover	No major signs of erosion
2	15%	< 15% of Cal-IPC rated high or moderate perennial species	70% of pre-project cover	No major signs of erosion
3	20%	< 15% of Cal-IPC rated high or moderate perennial species	70% of pre-project cover	No major signs of erosion

[1] Does not include non-native annual grasses listed in the Cal-IPC Inventory, including but not limited to wild oat and brome species, which currently dominate the site.
[2] Non-native grassland within the future temporary impact revegetation areas currently exhibits total vegetative cover of approximately 85 to 90 percent, based on a site check conducted in June 2024.

5.3 General Site Requirements

The following general site characteristics must be met by the end of the three-year maintenance and monitoring period.

5.3.1 Site Must Be Self-Sustaining

The revegetation areas must be self-sustaining (i.e., able to survive without artificial support) by the end of the three-year maintenance and monitoring period. Determination of whether the site is self-sustaining will be whether temporary irrigation is needed, and the vegetation shows evidence of natural growth cycles.

5.3.2 Site Must Show Evidence of Natural Recruitment

The site must show evidence of natural recruitment of native species. This will be evaluated by native plant species growing successfully in growing seasons where no seed was applied.

5.3.3 Site Must Show Evidence of Wildlife Use

The restoration site must exhibit signs or evidence of wildlife use during the final year of monitoring.

5.3.4 Habitat Contiguity

The site must contain vegetation that is visually contiguous with vegetation communities naturally occurring in areas adjacent to the site. Habitat connectivity and appropriate habitat linkages will provide nesting and foraging habitat for wildlife species.

5.4 Reporting

An annual report outlining monitoring results and the progress of the revegetation areas shall be submitted to the Applicant at the end of each monitoring year within 30 days of the anniversary date of Restoration Project installation, or at the end of the calendar year until the performance standards have been met. The annual monitoring reports shall include the following: a description of the existing conditions of the sites derived from qualitative data, a comparison of annual performance standards with monitoring data, any shortcomings of the revegetation areas compared to the performance standards and recommended remedial measures necessary for the successful completion of the Project. Each annual report shall provide a summary of the accumulated data.

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6 Completion of the Revegetation Program

Upon completion of the maintenance and monitoring period, if the target performance standards have been achieved, notification of completion will be included within the final annual report submitted to the Applicant. The Applicant shall notify the applicable regulatory agencies upon submitting the final annual report. Following receipt of the notification of completion, the applicable regulatory agencies may visit the sites to confirm the completion of the mitigation effort and to verify compliance requirements.

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7 References

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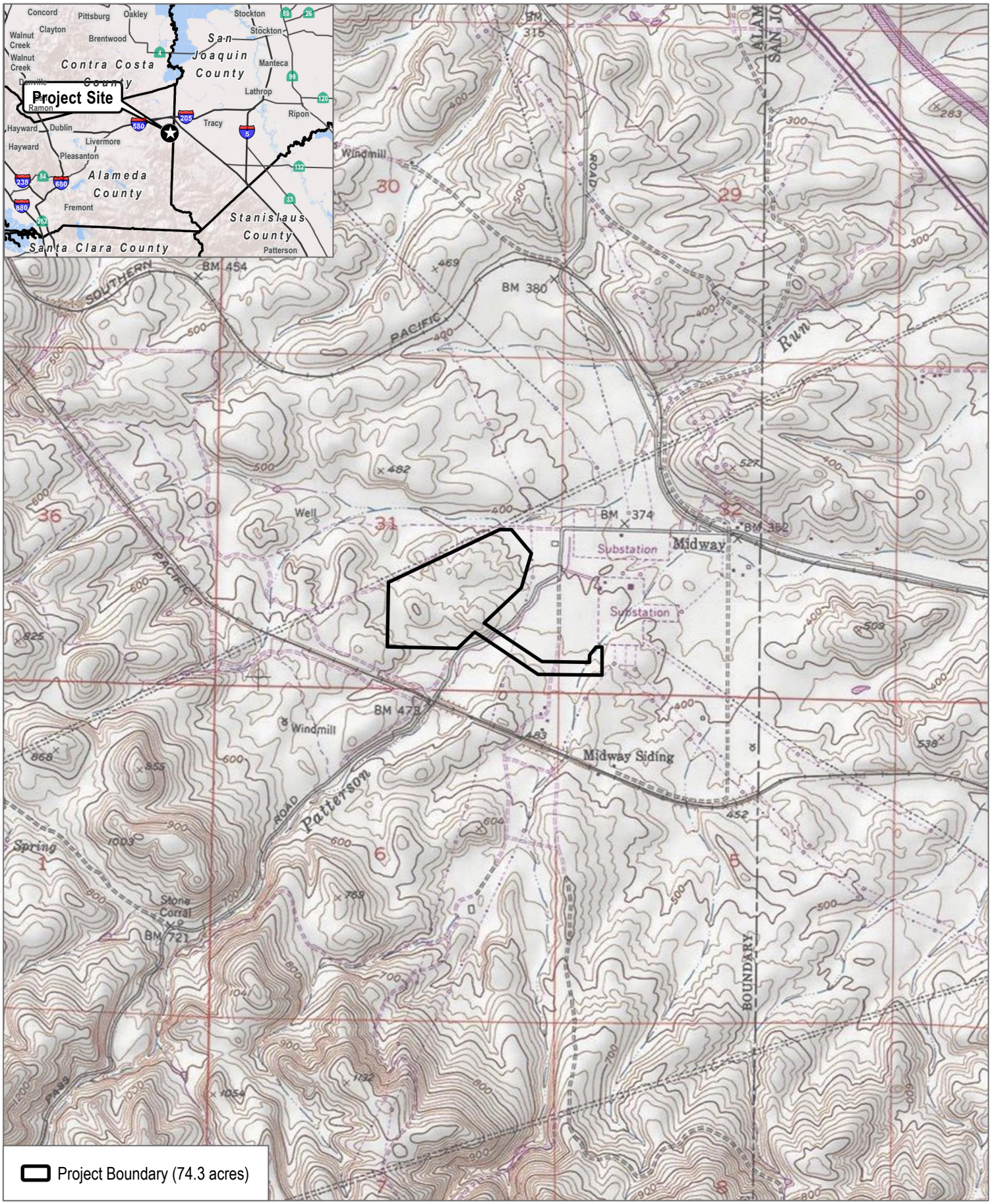
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SOURCE: USGS 7.5 Minute Quadrangle Series

DUDEK

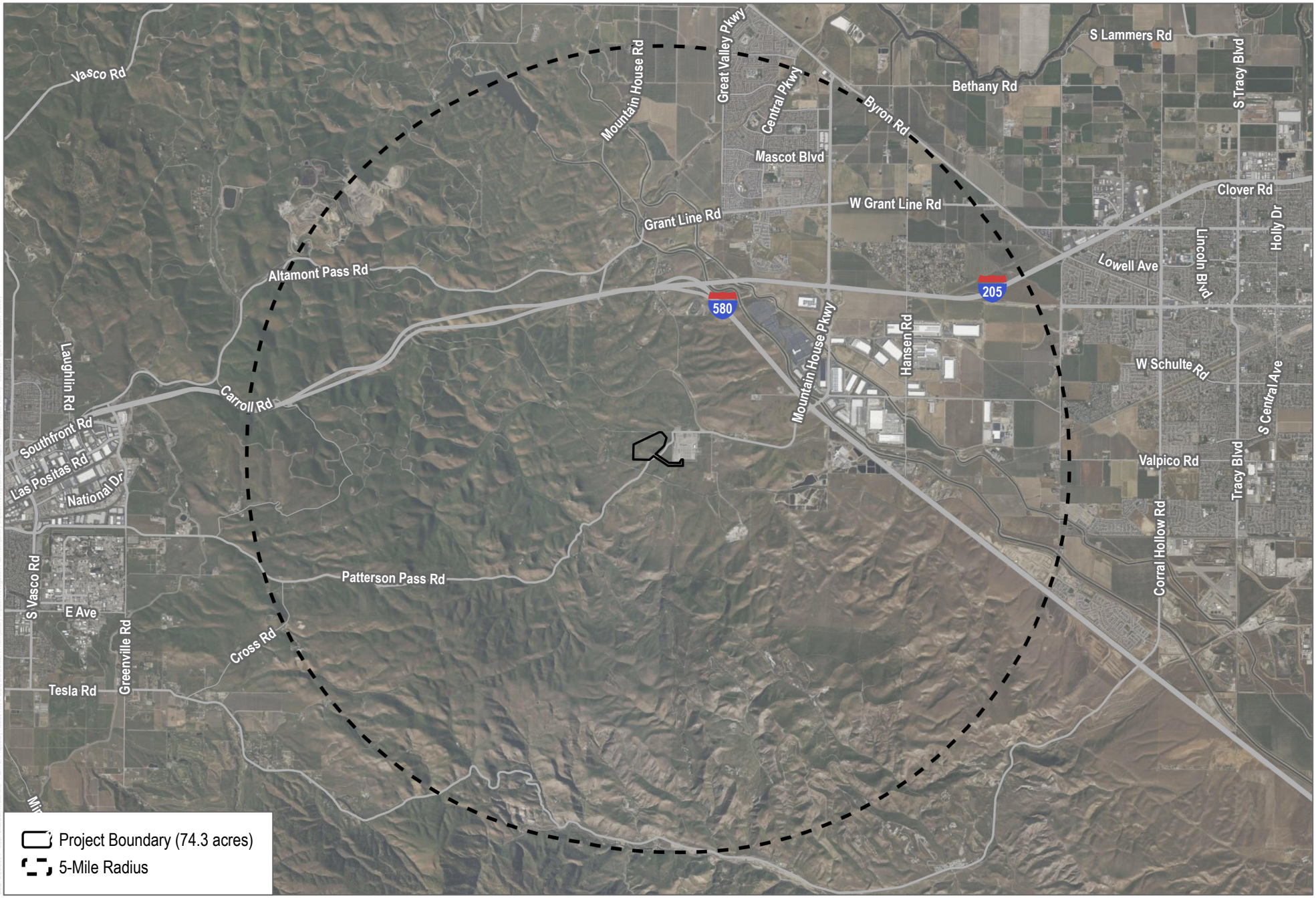
0 500 1,000 Feet

FIGURE 1

Project Location

Temporary Impact Revegetation Plan

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SOURCE: Bing Maps 2023

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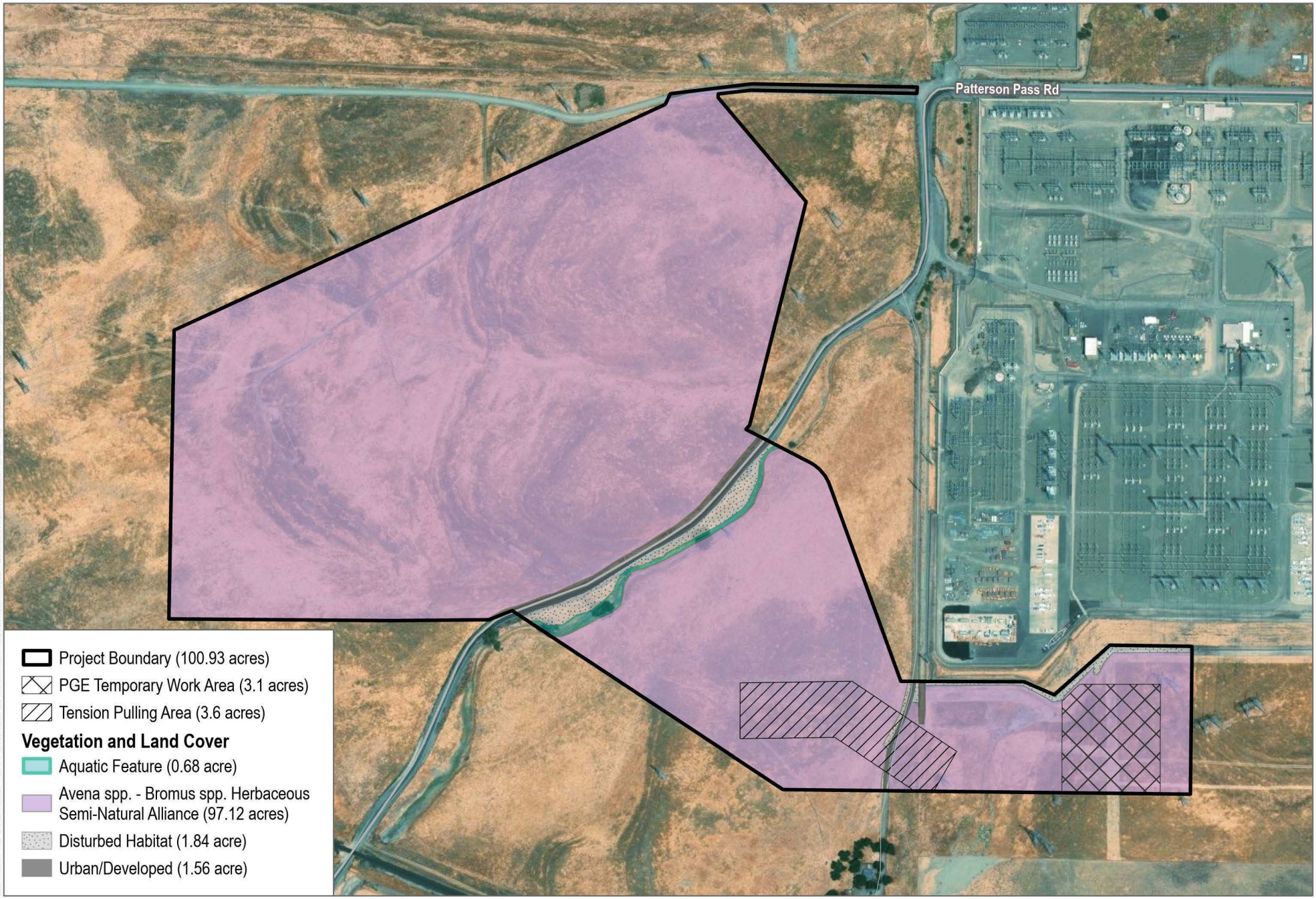
0 4,000 8,000 Feet

FIGURE 2

Project Vicinity

Temporary Impact Revegetation Plan

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SOURCE: Bing Maps 2023

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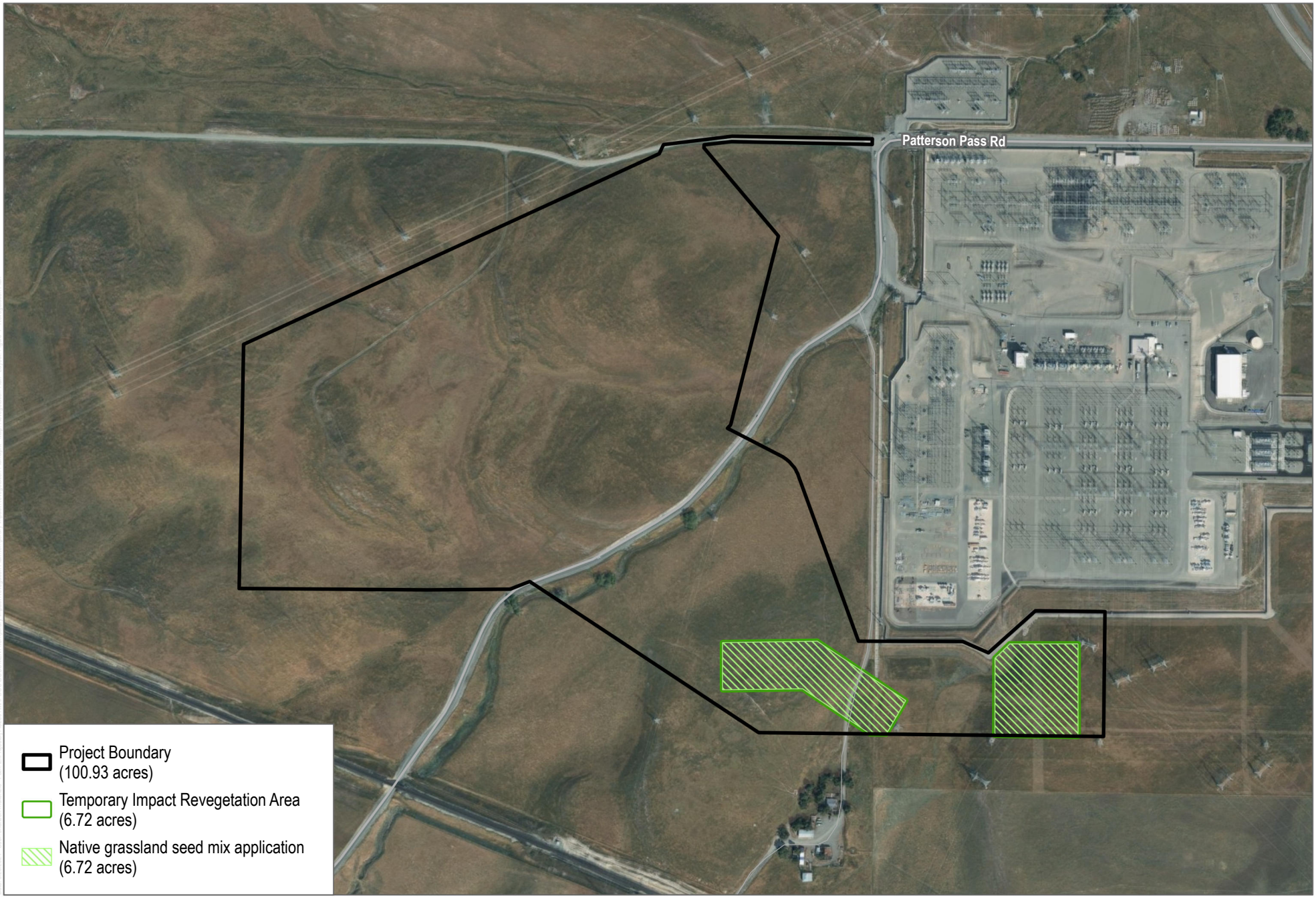
0 230 460 Feet

FIGURE 3

Vegetation and Land Cover

Potentia Viridi BESS - Temporary Impact Revegetation Plan

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SOURCE: Bing Maps 2023;

DUDEK

0 270 540 Feet

FIGURE 4

Revegetation Plan

Potentia Viridi BESS - Temporary Impact Revegetation Plan

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5.16 Water Resources

5.16.1 Environmental Setting

The project would be in unincorporated eastern Alameda County, approximately eight miles west-southwest of Tracy, California, and five miles south-southwest of the community of Mountain House. The project would cover approximately 60.7 acres (permanently disturbed) of the total 102-acre project area, on pastoral land in the rolling hills along the eastern margin of the Coast Ranges. The project would include a 400 megawatt (MW) battery energy storage system (BESS) capable of 3,200 MW hours (MWhs) of power storage, three operation and maintenance (O&M) buildings, and a substation. The project would be connected to the nearby Pacific Gas and Electric Company (PG&E) Tesla substation by a 2,884-foot-long new single-circuit 500kV gen-tie line (AMLGMN 2024o, Dudek 2025d). According to the Alameda County zoning viewer public access map website, the project site is zoned as agriculture, with a combining district B-E requiring a minimum building site size of 100 acres (Alameda County 2025a). See **Section 2, Introduction**, for a description of the project components within the California Energy Commission's (CEC's) Opt-In certification and project components outside the CEC's Opt-In certification.

Stormwater Drainage and Water Quality

Stormwater from the proposed project area would drain into the Lower Old River level 12 Hydrologic Unit Code (HUC) watersheds (DWR 2024). According to the United States Environmental Protection Agency (EPA) *How's My Waterway* website, the following five waterways within the Lower Old River watershed are identified as impaired (USEPA 2025):

- Delta Waterways (Southern Portion) – Water quality is affected by mercury and pesticides.
- Grant Line Canal (Included in Delta Waterways, Southern Portion) – Water quality is affected by low oxygen and salts.
- Holland Cut (Included in Delta Waterways, Central Portion) – Water quality is affected by acidity.
- Mountain House Creek (Included in Delta Waterways, Southern Portion) – Water quality is affected by salts.
- Tom Paine Slough (Included in Delta Waterways, Southern Portion) – Water quality is affected by low oxygen and salts.

However, these waterways are in the Sacramento-San Joaquin Delta, more than six miles northeast of the project site, which is within the Coast Range. The area of the project site currently drains into Patterson Run, which flows northeast under Interstate 580, the California Aqueduct, and the Delta-Mendota Canal, then disappears south of Interstate 205 (USGS 2021).

The applicant proposes to control stormwater runoff within the project facility during substantial rain events using drainage ditches and low impact developments (LIDs) such as detention and bioretention basins. The majority of these basins would outfall to riprapped outlets along the project facility perimeter. The remaining two detention basins would flow from an outlet riser into a storm drain that would outfall to Patterson Run (Dudek 2025y).

Groundwater

The southwest portion of the project area is within the San Joaquin Valley groundwater basin, Tracy subbasin (5-022.15). The Tracy subbasin has been identified as a medium priority basin (DWR 2020). The remainder of the project area is within the northeast margin of the Coast Range, outside of a groundwater basin identified by Department of Water Resources (DWR) bulletin 118 (DWR 2006). According to available groundwater level data, depth to the groundwater for two nearby wells (less than a mile) ranged from 16.5 to 21.8 feet below ground surface (bgs) between September 1958 and October 1972 (DWR 2025b).

Although the project area includes the San Joaquin Valley - Tracy groundwater subbasin, the proposed water purveyor, Alameda County Flood Control and Water Conservation District (Zone 7 Water Agency), operates four groundwater extraction wellfields in the Livermore Valley groundwater basin (2-010). During the 2023/2024 fiscal year, approximately 4.5 percent of Zone 7 Water Agency water supply was extracted from local groundwater (Zone 7 Water Agency 2025). The Livermore Valley groundwater basin is also a medium overdraft priority (DWR 2020).

Zone 7 Water Agency was established in 1949 as a flood control/water conservation district. In 1957, the agency assumed the additional responsibility for providing local water supply. Since Zone 7 Water Agency was already managing groundwater as part of its water supply, it was designated as the groundwater sustainability agency (GSA) for the Livermore Valley groundwater basin under the Sustainable Groundwater Management Act (SGMA). Even though the Livermore Valley groundwater basin is not adjudicated, Zone 7 Water Agency has issued an alternative groundwater sustainability plan (Zone 7 Water Agency 2021b).

The groundwater-bearing materials of the Livermore Valley groundwater basin consist of continental deposits from alluvial fans, outwash plains, and lakes. Groundwater bearing zones include the valley-fill, the Livermore Formation, and the Tassajara Formation. Under most conditions, the valley-fill and Livermore sediments yield adequate to large quantities of groundwater that ranges in quality from poor to excellent, but the majority is in the good to excellent range. Poor groundwater quality in the Livermore Valley basin is typically due to elevated nitrate, boron and chromium.

The valley-fill is Holocene age and ranges in thickness from a few tens of feet to nearly 400 feet. It consists of stream channel deposits, alluvium, alluvial fan deposits, and terrace deposits. Clay deposits up to 40 feet thick cap the valley-fill in the western part

of the basin, where deep wells draw groundwater from the underlying aquifer. The valley-fill typically overlies the Plio-Pleistocene age Livermore and Tassajara Formations.

The Livermore Formation is primarily exposed over the south and southwest regions of the Livermore Valley groundwater basin, but occurs almost everywhere beneath the surface at depths up to 400 ft. This formation is up to 4,000 feet thick and consists of unconsolidated to semi-consolidated deposits produced from the erosion of Jurassic and Cretaceous rocks to the south of the basin. Deep wells in the eastern half of the basin produce from the Livermore Formation.

The Tassajara Formation surfaces in the uplands to the north of the Livermore Valley and occurs beneath the central portion of the valley at depths ranging from 200 to 750 feet. Beds of the Tassajara are composed of sandstone, siltstone, shale, conglomerate, and limestone. Coarse-grained beds typically contain volcanic tuff and clay particles, reducing their overall permeability. Wells tapping the Tassajara Formation yield only sufficient water for domestic or stock purposes. There is little hydrologic continuity between the Tassajara and overlying water-bearing units.

Within the Livermore Valley groundwater basin, faults are the major structural features known to act as barriers to the lateral movement of groundwater. The resulting groundwater levels stand higher on the up-gradient side. The Livermore, Pleasanton and Parks Boundary faults act as such barriers, dividing the Quaternary Alluvium into 5 groundwater subbasins. The Parks Boundary fault separates the Tassajara Formation to the north and the Livermore Formation to the south of the Livermore basin (DWR 2006, Zone 7 Water Agency 2021b).

According to the GeoTracker website sponsored by the State Water Resources Control Board (SWRCB), there are three sites impacting groundwater within 1.5 miles of the project site. Two petroleum releases from a Shell pipeline over a mile to the northeast occurred in 2015 (2,000 gallons recovered) and 2016 (26,888 gallons recovered). Contaminated soil was removed from both sites, and the Central Valley Regional Water Quality Control Board (CVRWQCB) issued a letter of "no further action" (NFA) in September 2017. An additional site was identified within 500 feet southeast of the project, across Patterson Pass Road. A 550-gallon underground waste oil tank was removed in March 1990 by a former windfarm operator, USA Windpower and is reported as closed in July 1994 (SWCRB 2025). However, a map included in the Phase I environmental site assessment prepared for the project indicates that the actual former location of the waste oil tank was over a mile to the northwest (AMLGMN 2024pp).

Flooding

The proposed project area is within an unpublished Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (FIRM) panel 06001C0400G of the unincorporated areas of Alameda County and no flood plain information is available (FEMA 2025). However, the proposed project area is shown on the Alameda County flood hazard online map and no 100-year, or 500-year flood hazard zones are depicted

in the vicinity based on FEMA sourced information (Alameda County 2023).

The project area is not near the coast and therefore not within an area mapped as vulnerable to sea level rise in the National Oceanic and Atmospheric Administration's (NOAA) *Digital Coast, Sea Level Rise Viewer* (NOAA 2023).

Since the project area is not located near the coast or a large body of water, there is no danger of a tsunami or seiche.

According to the *Dam Breach Inundation Map Web Publisher* sponsored by the California Department of Water Resources (DWR), there is only one dam near the project area. The Maria Dam is located approximately two miles east-southeast of the project area. However, according to the *Dam Breach Inundation Map Web Publisher*, a breach of this dam would drain to the northeast toward the San Joaquin Valley, away from the project area. No other dams in the region would inundate the project (DWR 2025a).

Water Supply

Water supply during both the construction and the operation phases of the project is proposed to be provided by Zone 7 Water Agency.

Based on 2023/2024 financial records, approximately 80 percent of Zone 7 Water Agency water deliveries were sourced from the State Water Project (SWP), 15.5 percent surface water from the Del Valle Reservoir, and the remaining 4.5 percent was produced from wells in the Livermore Valley groundwater basin (Zone 7 Water Agency 2025).

Water would be transported to the project site by a third-party vendor. During project operation, the third-party vendor would be licensed by the California Department of Public Health (CDPH) to haul potable water. Water supply would be stored in a 10,000 gallon cistern adjacent the O&M building. A 30,000 gallon water tank would also be maintained for the fire suppression system.

During the 18-month project construction period, an estimated 49.1 acre-feet (AF) of water would be needed. Operational water demand for the O&M buildings and refilling of the fire system tank is expected to be one acre-foot per year (AFY) (AMLGMN 2024z, Dudek 2025y).

Wastewater

During project construction, sanitary wastewater needs would be addressed by portable toilets. During project operation, sanitary waste from the O&M building would be collected in two 5,000 gallon below ground holding tanks, periodically pumped out and disposed off-site by a third-party vendor (Dudek 2025d, Dudek 2025y).

Regulatory

Federal

Clean Water Act and California's Porter-Cologne Water Quality Control Act. The SWRCB and its nine Regional Water Quality Control Boards (RWQCBs) are responsible for the regulation and enforcement of the water quality protection requirements of the federal Clean Water Act (CWA) and the state's Porter-Cologne Water Quality Control Act (Porter-Cologne). The National Pollutant Discharge Elimination System (NPDES) is the permitting program that allows point source dischargers to comply with the CWA and Porter-Cologne laws. This regulatory framework protects the beneficial uses of the state's surface and groundwater resources for public benefit and environmental protection. Protection of water quality could be achieved by ensuring the proposed project complies with applicable NPDES permits from the SWRCB or the Central Valley RWQCB.

Section 404(a) of the CWA identifies the U.S. Army Corp of Engineers (USACE) as the authority to issue permits for the discharge of fill and dredging material into navigable waters, defined as waters of the United States (CWA Section 502 [7]). Under Section 401(a) of the CWA, any applicant of a permit under the CWA must provide a State certification to the Federal permitting agency. In California, the local RWQCB is the Section 401 certifying agency. The project would require construction of a storm drain outfall and a temporary access road crossing associated with Patterson Run that has been identified as a possible Waters of the United States in the updated jurisdictional delineation report prepared for the application (Dudek 2025kk). On June 14, 2024, the applicant filed a Nationwide Permit Pre-Construction Notification (PCN) with the USACE (AMLGMN 2024xx). With respect to Section 401 compliance, the applicant filed an application for Discharges of Dredged or Fill Material to Water of the State on June 19, 2025, confirmation from the CVRWQCB of a completed application was received on July 9, 2025 (Dudek 2025nnn).

Under Section 303(d) of the CWA, states are required to identify impaired surface water bodies and develop total maximum daily loads (TMDLs) for contaminants of concern. The TMDL is the quantity of pollutants that can be assimilated by a water body without violating water quality standards. As noted in the environmental setting section, impaired waterways identified in the Lower Old River watershed are in the Sacramento-San Joaquin Delta, more than six miles northeast of the project (USEPA 2025). Listing of a water body as impaired does not necessarily suggest that the water body cannot support the beneficial uses; rather, the intent is to identify the water body as requiring future development of a TMDL to maintain water quality and reduce the potential for future water quality degradation.

Federal Emergency Management Agency Flood Insurance Program. The flood magnitude standard used nationwide for floodplain management is a one percent probability of a flood occurring in any given year, also known as the 100-year flood or base flood. FIRM, the official map created and distributed by FEMA for the National

Flood Insurance Program shows areas subject to inundation by the base flood for participating communities. FIRMs contain flood risk information based on historic, meteorologic, hydrologic, and hydraulic data, as well as open-space conditions, flood control works, and development. As stated above in the environmental setting section, the project area is not within 100-year or 500-year flood hazard zone (Alameda County 2023).

State

Sustainable Groundwater Management Act (AB 1739, SB 1168 & SB 1319). The 2014 Sustainable Groundwater Management Act (SGMA) requires local public agencies and Groundwater Sustainability Agencies (GSAs) in high and medium priority basins to develop and implement Groundwater Sustainability Plans (GSPs) or Alternatives to GSPs. GSPs are detailed road maps for managing groundwater basins to reach long-term sustainability.

Sherman Food, Drug and Cosmetic Law, Bottled, Vended, Hauled and Processed Water, California Health and Safety Code, Section 111070, et seq.. California Department of Public Health (CDPH) administers a program to license potable water haulers. Since operational water supply to serve the O&M building is proposed to be transported to the project site, the third party vendor should be licensed by the CDPH to haul potable water.

Local Agency Management Program for Onsite Wastewater Treatment Systems. The Federal CWA, the California Water Code, and the Porter-Cologne Act authorizes SWRCB and associated regional boards to regulate discharges that could impact surface and groundwater. SWRCB in turn delegates this authority to local agencies with respect to onsite wastewater treatment systems (OWTS) through the Local Agency Management Program (LAMP). The Alameda County Department of Environmental Health (ACDEH) is the local agency responsible for OWTS (Alameda County 2018). Two below-ground 5,000-gallon holding tanks are proposed to contain sanitary wastewater from the operations and maintenance (O&M) building with periodic offsite disposal by a third-party vendor. According to Alameda County ordinance (Chapter 15.18), the holding tanks would be categorized as an onsite wastewater containment unit (OWCU); however, Alameda County also regulates OWCUs under their OWTS program.

Local

Alameda County, East County Area Plan. The following goals and policies apply to hydrology and water quality issues related to the project (Alameda County 2000):

- **Policy 253:** The County shall approve new development only upon verification that an adequate, long-term, sustainable, clearly identified water supply would be provided to serve the development, including in times of drought.
- **Policy 273:** The County shall support Zone 7 Water Agency's policy which discourages commercial and industrial development using septic tanks.

- **Policy 306:** In part, the County shall protect surface and groundwater resources by minimizing sedimentation and erosion through control of grading, quarrying, cutting of trees, removal of vegetation, placement of roads and bridges, use of off-road vehicles, and animal related disturbance of the soil.

Alameda County Code of Ordinances:

15.18. This chapter of the Alameda County code of ordinances establishes standards for the approval, installation, and operation of onsite wastewater treatment systems (OWTS) and onsite wastewater containment units (OWCU) within Alameda County.

5.16.2 Environmental Impacts

WATER RESOURCES Would the project:	**Significant and Unavoidable Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☒	☐	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces in a manner which would:				
i. result in substantial erosion or siltation, on- or offsite;	☐	☒	☐	☐
ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☒	☐	☐
iii. create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; or	☐	☒	☐	☐
iv. impede or redirect flood flows?	☐	☐	☐	☒
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e. Conflict with or obstruct implementation of a water quality	☐	☒	☐	☐

WATER RESOURCES Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
control plan or sustainable groundwater management plan?				
f. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☒	☐	☐
g. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒

Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, hydrology and water quality and utilities and service systems.

5.16.2.1 Methodology and Thresholds of Significance

In addition to the above environmental checklist, CEC staff used the following methodology and thresholds of significance to evaluate the project.

Methodology

The California Environmental Quality Act (CEQA) guidelines, Appendix G, provide a checklist of questions that lead agencies typically address when assessing impacts related to water resources (or hydrology and water quality in CEQA). To assess potential impacts concerning water resources, CEC staff has reviewed online sources of maps, literature and information of the surrounding area, as well as site-specific information provided by the project applicant.

5.16.2.2 Direct and Indirect Impacts

a. Would the project violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

<u>Project Components Within the CEC's Opt-In Certification</u>

Construction

Less Than Significant Impact with Mitigation. The proposed project would disturb approximately 60.7 acres of land during construction and therefore would be subject to construction-related stormwater requirements of the Construction General Permit. Prior to any ground-disturbing construction activity, the applicant would prepare a construction Stormwater Pollution Prevention Plan (SWPPP) to comply with the

Construction General Permit per condition of certification (COC) **WATER-1**. With the implementation of the SWPPP, development of the site would not cause substantial degradation in the quality, or an increase in the rate or volume, of stormwater runoff during construction.

According to the revised civil plans (Dudek 2025y), maximum excavation "cut" from the three highest promontories would range from 19 to 32 feet. As discussed in Section 5.16.1, first encountered groundwater is anticipated between 16.5 and 21.8 feet bgs (DWR 2025b). Therefore, groundwater may be encountered during excavation activities and dewatering would be necessary. If dewatering discharge is found to be uncontaminated, the project owner would be allowed to discharge dewatering water to waters of the US under the Construction General Permit. If the discharge is found to be contaminated, a special permit through the Central Valley RWQCB would be necessary depending on the nature of the contamination, either requiring the applicant to treat the water before discharging or hauling away the untreated water by a permitted service provider.

During project construction, temporary toilet and sanitary facilities would be provided and serviced by a third-party contractor.

Thus, with incorporation of COC **WATER-1**, the project would not be expected to violate water quality standards or waste discharge requirements during construction, and impacts would be less than significant with mitigation.

Operation

Less Than Significant Impact with Mitigation. A project operations Drainage, Erosion, and Sedimentation Control Plan (DESCP) would be prepared to monitor stormwater events and associated BMPs per COC **WATER-2**. As stated in Section 5.16.1, the applicant proposes to control stormwater runoff within the project facility during substantial rain events using drainage ditches and LIDs such as detention and bioretention basins. The majority of these basins would outfall to riprapped outlets along the project facility perimeter. Two of the detention basins would flow from an outlet riser into a storm drain that would outfall to Patterson Run (Dudek 2025y).

Sanitary waste from the O&M building would be collected in two 5,000-gallon below ground holding tanks and periodically pumped out and disposed off-site by a third-party vendor during project operation. According to Alameda County ordinance (Chapter 15.18), the holding tanks would be categorized as an OWCU regulated under the Alameda County OWTS program administered by the ACDEH. The ACDEH has the responsibility to evaluate the septic holding tank design and site conditions to ensure the proposed facility would conform with Alameda County OWCU requirements and would confer with the CEC per COC **WATER-3**. The project would not be expected to violate water quality standards or waste discharge requirements during operation, and impacts would be less than significant with mitigation.

As stated in Section 5.16.1, the project would require construction of a storm drain outfall and a temporary access road crossing, both associated with Patterson Run that has been identified as a possible Waters of the United States in the updated jurisdictional delineation report prepared for the application (Dudek 2025kk). As part of the application process, the project owner filed a Nationwide Permit Pre-Construction Notification (PCN) with the U.S. Army Corp of Engineers (USACE) pursuant to Code of Federal Regulations, Title 33, Part 330, and a dredge and fill waste discharge requirements (WDRs) with the CVRWQCB. Compliance with CWA Sections 401 and 404 would be ensured with implementation of COC **WATER-4**.

Project Components Outside the CEC's Opt-In Certification

Construction

Less Than Significant Impact with Mitigation. The 1,300 feet of gen-tie transmission lines between the point of change of ownership (POCO) and the Tesla substation would be under Pacific, Gas and Electric (PG&E) jurisdiction. During construction of the PG&E controlled gen-tie transmission lines, soil disturbance would be restricted to the area under the transmission lines and would be minimal. With the incorporation of recommended mitigation measure **MM WATER-1**, construction would be expected to not violate water quality standards, or substantial degrade surface of groundwater quality.

Operation

No Impact. Soil disturbance would not occur during the operation of the PG&E controlled gen-tie transmission lines. Therefore, water quality standards would not be affected, and substantial degradation of surface or groundwater quality would not occur.

b. Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Project Components Within the CEC's Opt-In Certification

Construction and Operation

Less Than Significant Impact. Zone 7 Water Agency is proposed to supply water during both the construction and the operation phases of the project. In fiscal year 2023/2024, Zone 7 Water Agency pumped 2,360 AF of groundwater from the Livermore Valley basin. This would comprise approximately one percent of the estimated 231,000 AF of Livermore Valley groundwater basin storage (Zone 7 Water Agency 2025). The average annual project water demand of approximately 32.7 AFY during construction is 1.4 percent of Zone 7 Water Agency's current annual groundwater use. However, since groundwater constitutes 4.5 percent of Zone 7 Water Agency water deliveries, only

about 1.5 AFY of the total annual water demand would be sourced from Livermore Valley basin groundwater which would constitute approximately 0.06 percent of Zone 7 Water Agency's groundwater use. The estimated operational water demand of 1 AFY would constitute 0.0017 percent of Zone 7 Water Agency annual groundwater use and therefore have a negligible impact. In addition, Zone 7 Water Agency manages the Livermore Valley groundwater basin as the GSA under SGMA.

Therefore, the project would not be expected to decrease groundwater supplies, interfere with groundwater recharge, nor impede sustainable groundwater management.

Project Components Outside the CEC's Opt-In Certification

Construction

Less Than Significant Impact. The 1,300 feet of gen-tie transmission lines between the POCO and the Tesla substation would be under PG&E jurisdiction. During construction of the PG&E controlled gen-tie transmission lines, soil disturbance would be restricted to the area under the transmission lines and water use for dust suppression would be minimal. Therefore, the impact to Zone 7 groundwater extraction from the Livermore Valley basin would be negligible and would not impede sustainable groundwater management efforts.

Operation

No Impact. Soil disturbance would not occur during the operation of the PG&E controlled gen-tie transmission lines. Therefore, groundwater extraction from the Livermore Valley basin would not occur and sustainable groundwater management efforts would not be impeded.

c. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces in a manner which would:

i. Result in substantial erosion or siltation, on- or offsite;

Project Components Within the CEC's Opt-In Certification

Construction and Operation

Less Than Significant Impact with Mitigation. As discussed in criteria "a", soil erosion during project construction would be addressed by the SWPPP prepared as part of the Construction General Permit requirement described in COC **WATER-1**. During operations stormwater runoff from the project facilities would be addressed by implementing the soil erosion control measures of the project operations DESCP prepared per COC **WATER-2**, as well as implementation of COC **WATER-4**.

The project would not be expected to cause substantial erosion during either construction or operation, and impacts would be less than significant with mitigation.

Project Components Outside the CEC's Opt-In Certification

Construction

Less Than Significant Impact with Mitigation. During construction of the PG&E controlled gen-tie transmission lines, soil disturbance would be restricted to the area under the transmission lines and would be minimal. With the incorporation of recommended mitigation measure **MM WATER-1**, construction would be expected to not to alter drainage patterns or add impervious areas that would result in substantial erosion or siltation**.**

Operation

No Impact. Soil disturbance would not occur during the operation of the PG&E controlled gen-tie transmission lines. Therefore, altered drainage patterns or the addition of impervious areas that would result in substantial erosion or siltation would not occur.

ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

Project Components Within the CEC's Opt-In Certification

Construction and Operation

Less Than Significant Impact with Mitigation. As discussed in criteria "a", the impact of offsite flooding due to surface water runoff from construction activities would be addressed by the SWPPP prepared by requirement of the Construction General Permit (per COC **WATER-1**). During operations, stormwater runoff within the project area would be captured and retained by LID hydraulic features and would be further addressed by the project operations DESCP prepared per COC **WATER-2**, as well as implementation of COC **WATER-4**.

The project would not be expected to cause off-site flooding due to surface water runoff during construction or operation, and impacts would be less than significant with mitigation.

Project Components Outside the CEC's Opt-In Certification

Construction

Less Than Significant Impact with Mitigation. During construction of the PG&E controlled gen-tie transmission lines, soil disturbance would be restricted to the area under the transmission lines and would be minimal. With the incorporation of recommended mitigation measure **MM WATER-1**, construction would be expected to

not alter drainage patterns or add impervious areas that would result in an increase of runoff rate or amount that would create flooding.

Operation

No Impact. Soil disturbance would not occur during the operation of the PG&E controlled gen-tie transmission lines. Therefore, altered drainage patterns or the addition of impervious areas increasing runoff rate or amount to create flooding would not occur**.**

iii. Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; or

Project Components Within the CEC's Opt-In Certification

Construction and Operation

Less Than Significant Impact with Mitigation. As discussed in criteria "a" above, stormwater runoff during construction would be minimized by the practices employed per the Construction General Permit SWPPP (per COC **WATER-1**). During operation, stormwater runoff within the project area would be captured and retained by LID features and would be further addressed by the project operations DESCP prepared per COC **WATER-2**. Compliance with CWA Sections 401 and 404 with respect to alterations to Patterson Run would be achieved with implementation of COC **WATER-4**.

The project would not be expected to create surface water runoff that would exceed stormwater drainage capacity either during construction or operation, and impacts would be less than significant with mitigation.

Project Components Outside the CEC's Opt-In Certification

Construction

Less Than Significant Impact with mitigation. During construction of the PG&E controlled gen-tie transmission lines, soil disturbance would be restricted to the area under the transmission lines and would be minimal. With the incorporation of recommended mitigation measure **MM WATER-1**, construction would be expected not to alter drainage patterns or add impervious areas that would result in runoff exceeding stormwater drainage system capacity or contributing to polluted runoff.

Operation

No Impact. Soil disturbance would not occur during the operation of the PG&E controlled gen-tie transmission lines. Therefore, altered drainage patterns or the addition of impervious areas resulting in runoff exceeding stormwater drainage system capacity or contributing to polluted runoff would not occur.

v. Impede or redirect flood flows?

Project Components Within the CEC's Opt-In Certification

Construction and Operation

No Impact. According to the Alameda County online flood hazard map, the proposed project area is not located within a 100-year or 500-year flood hazard zone (Alameda County 2023). Therefore, the project would not impede or redirect flood water flow either during construction or operation.

Project Components Outside the CEC's Opt-In Certification

Construction

Less Than Significant Impact with Mitigation. During construction of the PG&E controlled gen-tie transmission lines, soil disturbance would be restricted to the area under the transmission lines and would be minimal. With the incorporation of recommended mitigation measure **MM WATER-1,** construction would not be expected to alter drainage patterns or add impervious areas resulting in impeded or redirected flood flows**.**

Operation

No Impact. Soil disturbance would not occur during the operation of the PG&E controlled gen-tie transmission lines. Therefore, impeding or redirecting flood flows due to altered drainage patterns or the addition of impervious areas that would not occur.

d. Would the project in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Project Components Within the CEC's Opt-In Certification

Construction and Operation

No Impact. As previously discussed in criteria "c iv", the proposed project area is not located within a 100-year or 500-year flood hazard zone. According to DWR's *Dam Breach Inundation Map Web Publisher,* there are no local dams that could inundate the project area. The project site is not located near the coast or a large body of water, therefore there is no danger of a tsunami, seiche, or vulnerability to sea level rise.

Project Components Outside the CEC's Opt-In Certification

Construction and Construction

No Impact. The proposed PG&E controlled gen-tie transmission line area is not located within a 100-year or 500-year flood hazard zone. According to DWR's *Dam Breach Inundation Map Web Publisher,* there are no local dams that could inundate this area. The proposed PG&E controlled gen-tie transmission line area is not located near the

coast or a large body of water, therefore there is no danger of a tsunami, seiche, or vulnerability to sea level rise.

e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Project Components Within the CEC's Opt-In Certification

Construction and Operation

Less Than Significant Impact with Mitigation. The impact of the project on water quality due to erosion during construction would be mitigated by the Construction General Permit SWPPP (COC **WATER-1**), and by the project operations DESCP prepared per COC **WATER-2** during project operation. As discussed in Item (b), the Livermore Valley groundwater basin is being sustainably managed by Zone 7 Water Agency per SGMA requirements.

With incorporations of the conditions detailed in COCs **WATER-1** and **WATER-2**, the overall impacts of the project on groundwater management and water quality control plans during construction and operation would be less than significant with mitigation.

Project Components Outside the CEC's Opt-In Certification

Construction

Less Than Significant Impact. During construction of the PG&E controlled gen-tie transmission lines, soil disturbance would be restricted to the area under the transmission lines and water use for dust suppression would be minimal. Therefore, the impact to Zone 7 groundwater extraction from the Livermore Valley basin would be negligible and would not obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Operation

No Impact. Soil disturbance would not occur during the operation of the PG&E controlled gen-tie transmission lines. Therefore, Livermore Valley basin groundwater extraction would not occur, and the implementation of water quality control or sustainable groundwater management plans would not be obstructed.

f. Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Project Components Within the CEC's Opt-In Certification

Construction and Operation

Less Than Significant Impact with Mitigation. Water supply during both the construction and operation phases of the project would be provided by Zone 7 Water Agency. During project operations, water would be transported to the project site by a third-party vendor. The third-party vendor would be licensed by the CDPH to haul potable water. Water supply to serve the O&M building would be stored in a 10,000-gallon cistern nearby. In addition, a 30,000-gallon water tank would be maintained for the fire suppression system. Based on fiscal year 2023/2024 records, approximately 80 percent of Zone 7 Water Agency water deliveries are sourced from the SWP via the California Aqueduct, 15.5 percent from Del Valle reservoir surface water, and 4.5 percent are sourced from groundwater in the Livermore Valley basin (Zone 7 Water Agency 2025). Annual project demand is estimated at 49.1 AF for construction (over 1.5 years), or 32.7 AFY, and 1 AFY for project operations (AMLGMN 2024z). As of fiscal year 2023/2024, Zone 7 Water Agency water deliveries total 51,860 AFY (Zone 7 Water Agency 2025). Annual construction water demand represents approximately 0.06 percent, while operational annual water demand represents approximately 0.002 percent, of Zone 7 Water Agency's annual water use.

The reliability of Zone 7 Water Agency water supplies during normal and drought conditions is discussed in Zone 7 Water Agency's urban water management plan (Zone 7 Water Agency 2021a) as well as the revised water supply assessment (WSA) prepared for the applicant in support of the Opt-in application (Dudek 2025e). According to both documents, Zone 7 Water Agency water supply is expected to remain reliable during drought conditions. Use of Zone 7 Water Agency water would be documented per COC **WATER-5**.

Therefore, Zone 7 Water Agency would have sufficient water supplies for the project during normal and drought conditions. Incorporation of COC **WATER-5** would ensure the CPM can verify efficient use of project water supply.

Project Components Outside the CEC's Opt-In Certification

Construction

No Impact: During construction of the PG&E controlled gen-tie transmission lines, soil disturbance would be restricted to the area under the transmission lines and water use for dust suppression would be minimal. Therefore, the impact to Zone 7 groundwater extraction from the Livermore Valley basin would be negligible and would not affect water supplies during normal or drought conditions.

Operation

No Impact. Soil disturbance would not occur during the operation of the PG&E controlled gen-tie transmission lines. Therefore, impact of local water supplies would not occur.

g. Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Project Components Within the CEC's Opt-In Certification

Construction and Operation

No Impact. Due to the rural location, no wastewater treatment provider is available to serve the project. During construction, temporary sanitary facilities would be used. During operations, sanitary wastewater would be transported offsite by a third-party vendor.

Therefore, the project during construction and operation would not impact the capacity of a wastewater treatment provider.

Project Components Outside the CEC's Opt-In Certification

Construction and Operation

No Impact. Due to the rural location, no wastewater treatment provider is available. During construction of the PG&E controlled gen-tie transmission lines, temporary sanitary facilities would be used. During operations, sanitary facilities would not be necessary. Therefore, the proposed PG&E controlled gen-tie transmission line would not impact the capacity of a wastewater treatment provider during construction or operation.

5.16.2.3 Cumulative Impacts

Table 3.2 of the application lists projects from various agencies within a 5-mile buffer that are considered by the applicant to be relevant:

- Alameda County Community Department Agency (4).
- San Joaquin County Community Development Department (5).
- City of Tracy Development Services Department (17).
- California Independent System Operator (California ISO) (19).
- California Department of Transportation (Caltrans) (11).

However, under closer examination, CEC staff discovered inconsistencies due to redundancies, mislocations, withdrawals, and omissions (Alameda County 2025b, Alameda County 2025c, California ISO 2024, California ISO 2025, Cal-SCH 2025, Caltrans 2025a, Caltrans 2025b, ICF 2020, Jacobs 20225, San Joaquin County 2025, Santa Clara 2019, Tracy 2025). The applicant did not identify five solar/wind turbine energy projects within the 5-mile buffer that are identified by Alameda County websites (Alameda County 2025b, Alameda County 2025c).

In addition, no corroborative online information could be found on the five California ISO energy storage projects, two of the City of Tracy projects, and five of the Caltrans roadwork projects.

The project list is revised based on information reviewed by CEC staff.:

- Alameda County Community Department Agency (11).
- San Joaquin County Community Development Department (1).
- City of Tracy Development Services Department (4).
- California Independent System Operator (California ISO) (0).
- California Department of Transportation (Caltrans) (6).

These projects fall within the following categories:

- Solar Energy (1)
- Wind Energy (3)
- Energy Storage (2)
- Commercial (2)
- Industrial (3)
- Residential (2)
- Roadwork (6)

According to environmental documents, the six Caltrans roadwork projects would use a minimal amount of water for dust suppression during construction only (Caltrans 2025a, Caltrans 2025b). Large scale residential and commercial projects in the Tracy area would consume a much greater amount of water during operation than the subject project (up to 5,700 AFY and 3,267 AFY, respectively) and would source water from the Byron-Bethany Irrigation District (BBID), thereby not impacting the Livermore Valley groundwater basin (Tracy 2025). Operational water demand for industrial projects in the greater Tracy area would range from 28 to 158 AFY, and also not impact the Livermore Valley groundwater basin (San Joaquin County 2025, Tracy 2025).

Two of the six energy related projects (Refer to **Appendix A**, **Table A-1**) could possibly use Zone 7 Water agency water during operations, which might impact the Livermore Valley groundwater basin (Alameda County 2025b, Alameda County 2025c, Jacobs 2025, Santa Clara 2019).

According to the Altamont Pass Wind Resource Area Repowering Program environmental impact report (PIER) and related documents, the two wind turbine repowering projects would use a minimal amount of water during operation (Alameda County 2014, Santa Clara 2019). For this analysis, water usage of 0.1 AFY is assumed for the wind repowering projects, based on the estimated water use of 0.11 for the similar Patterson Pass Wind Repowering project (Alameda County 2014). Operational

water use for the Viracocha Hills BESS project is estimated at 0.09 AFY for fire suppression (Jacobs 2025). Therefore, the total operational water demand estimated for the five energy related projects would be approximately 0.5 AFY. Added to the estimated 1 AFY water demand of the subject project, this results in a cumulative water demand of approximately 1.5 AFY. This cumulative water demand is insignificant compared to the 2,360 AF of groundwater Zone 7 Water Agency pumped from the Livermore Valley basin during the 2023/2024 fiscal year (Zone 7 Water Agency 2025).

Therefore, the cumulative impact of local energy projects on the Livermore Valley groundwater basin is less than significant.

5.16.3 Project Conformance with Applicable LORS

Table 5.16-1 below details CEC staff's determination of conformance with applicable LORS, including any proposed COCs, where applicable, to ensure the project components within the CEC's Opt-In Certification would conform with LORS. As shown in this table, CEC staff concludes that with implementation of specific COCs, the proposed project would conform with all applicable LORS. The subsection below, "Proposed Conditions of Certification," contains the full text of the referenced COCs.

TABLE 5.16-1 CONFORMANCE WITH APPLICABLE LORS

Applicable LORS	Conformance and Basis For Determination
Federal	
Clean Water Act, U.S. Code, Title 33, § 1342 (b) allows states to establish programs to issue NPDES permits.	**Yes.** During construction of the project, a storm water permit would be obtained under the General Construction NPDES program administered by the SWCRB and Colorado River Basin RWQCB as described in COC **WATER-1** per authority granted under U.S. Code, Title 33, § 1342 (b). In addition, COC **WATER-4** will ensure compliance with Sections 401 and 404 of the Clean Water Act.
State	
Sustainable Groundwater Management Act (Assembly Bill (Ab) 1739, Senate Bill (SB) 1168 & SB 1319)	**Yes.** Water supply for construction and operation would be provided by the Zone 7 Water District, who is also the GSA managing the Livermore Valley groundwater basin under SGMA. Construction and operation water use would be monitored per COC **WATER-5**.
Local Agency Management Program (LAMP) for Onsite Wastewater Treatment Systems (OWTS)	**Yes.** As the designated agency, the ACDEH has the responsibility to evaluate the septic holding tank design and site conditions to ensure the proposed facility would conform with Alameda County onsite wastewater containment unit (OWCU) requirements and would confer with the CEC per COC **WATER-3**.
Local	
Alameda County Ordinance: **15.18.** Requirements for onsite wastewater treatment systems (OWTS) and onsite wastewater containment units (OWCU) within Alameda County.	**Yes.** The ACDEH has the responsibility to evaluate the septic holding tank design and site conditions to ensure the proposed facility would conform with Alameda County onsite wastewater containment

TABLE 5.16-1 CONFORMANCE WITH APPLICABLE LORS	
Applicable LORS	**Conformance and Basis For Determination**
	unit (OWCU) requirements and would confer with the CEC per COC **WATER-3**.

5.16.4 Conclusions and Recommendations

As discussed above, with implementation of COCs and MMs, the project would have a less than significant impact related to water resources. CEC staff recommends adopting the COCs as detailed in subsection "5.16.5 Proposed Conditions of Certification" and mitigation measures identified "5.16.6 Recommended Mitigation Measures" below. The COCs below are enforceable as part of the CEC's certificate for the portions of the project constituting the site and related facilities.

5.16.5 Proposed Conditions of Certification

The following proposed conditions of certifications include measures to ensure conformance with LORS.

NPDES CONSTRUCTION PERMIT REQUIREMENTS

WATER-1 The project owner shall manage stormwater discharges from project construction activities by fulfilling the requirements contained in State Water Resources Control Board's NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit, or CGP) (Order No. 2022-0057-DWQ, NPDES No. CAS000002) and all subsequent revisions and amendments. Among the requirements of the General Permit, the project owner shall file permit registration documents electronically using the Stormwater Multiple Applications and Report Tracking Systems (SMARTS), submit a Notice of Intent (NOI), and develop and implement a construction Stormwater Pollution Prevention Plan (SWPPP) for project construction (Construction SWPPP). The SWPPP shall include all best management practices (BMPs) applicable for the project construction activities conducted in the local environment. The SWPPP must be prepared by a State-Qualified SWPPP Developer (QSD).

Verification: At least thirty (30) days prior to site mobilization, the project owner shall submit to the Compliance Project Manager (CPM) proof that an NOI was filed for the construction general permit and that a waste discharge identification number (WDID) was issued by the SWRCB. Within ten (10) days of its mailing or receipt, the project owner shall submit to the CPM any correspondence between the project owner and the SWRCB or the Central Valley Regional Water Quality Control Board (CVRWQCB) concerning the CGP. This information shall include the NOI, any updates to the construction SWPPP, and the notice of termination. The project owner shall notify the CPM in writing of any reported non-compliance and include these in the annual compliance report (ACR). Any monitoring documentation associated with the SWPPP shall be included in the ACR.

OPERATIONS DRAINAGE, EROSION AND SEDIMENTATION CONTROL PLAN

WATER-2 Prior to commencing project operations, the project owner shall obtain CPM approval of a site-specific operations Drainage, Erosion and Sedimentation Control Plan (DESCP) that addresses all project elements of stormwater management during project operations. The DESCP shall include the following:

- Discussion, site maps, plans and applicable BMPs demonstrating how stormwater and sediment erosion shall be managed during project operation.
- Discussion of BMPs deployment and materials management practices at the project site.
- Discussion and schedule of BMP inspections, storm event monitoring, and stormwater management structure maintenance.

Verification: At least thirty (30) days prior to project operation, the project owner shall submit a copy of the Operations DESCP to the CPM for review and approval. The project owner shall notify the CPM in writing of any reported non-compliance and include these in the ACR. Any monitoring documentation associated with the DESCP shall be included in the ACR.

ONSITE WASTEWATER CONTAINMENT UNIT REQUIREMENTS

WATER-3 As proposed, the project owner shall install two 5,000 gallon a below ground holding tanks to contain sanitary waste from the O&M building during project operation. As the holding tanks are considered an onsite wastewater containment unit (OWCU) and regulated under the Alameda County OWTS program administered by the Alameda County Department of Environmental Health (ACDEH). CEC certification does not supersede the authority of the SWRCB, the CVRWQCB, or the authority delegated to the ACDEH (Pub. Resources Code, § 25545.1(b)(2).) Therefore, the holding tank design shall conform with Alameda County OWCU requirements and the project owner shall obtain the applicable permit through the ACEDEH. ACDEH would confer with the CPM.

Verification: No later than 90 days prior to project operation, the project owner shall submit the holding tank design to the CPM and evidence that the design has the approval of the chief building official (CBO), and has been reviewed and approved by the ACDEH. All records and manifests of off-site transport and disposal of sanitary wastewater or correspondence from the ACDEH during project operations shall be provided to the CPM in the ACR.

COMPLIANCE WITH CLEAN WATER ACT SECTIONS 401 & 404

WATER-4 The storm drain outfall and temporary access road crossing that the project will require, are both associated with Patterson Run which has been identified as a possible Waters of the United States in the updated jurisdictional delineation report prepared for the project applicant (Dudek 2025kk). As part of the

application process, the project owner filed a Nationwide Permit Pre-Construction Notification (PCN) with the U.S. Army Corp of Engineers (USACE) pursuant to Code of Federal Regulations, Title 33, Part 330, and a dredge and fill waste discharge requirements (WDRs) with the CVRWQCB, following the *State Policy for Water Quality Control: State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* in accordance with the applicable requirements of division 7 of the Water Code and California Code of Regulations, title 23, Section 3855. The project owner shall complete both of these processes to ensure compliance with Sections 401 and 404 of the Clean Water Act.

Verification: At least sixty (60) days prior to site mobilization, the project owner shall provide to the CPM, verification that the project is covered under dredge and fill WDRs issued by the CVRWQCB, and either verification that a Nationwide Permit with the USACE pursuant to Code of Federal Regulations, Title 33, Part 330has been obtained, or a determination that the Nationwide Permit is not necessary. Within ten (10) days of its mailing or receipt, the project owner shall submit to the CPM any correspondence with the USACE, SWRCB or the CVWQCB regarding compliance with Sections 401 and 404 of the Clean Water Act. The project owner shall notify the CPM in writing of any violations and include these in the annual compliance report. Any monitoring documentation associated with these programs shall be included in the annual compliance report.

WATER USE AND REPORTING

WATER-5 Water supply during both the construction and operation phases of the project would be provided by Zone 7 Water Agency. During project operation, the water will be transported to the project by a third-party vendor. The project owner shall enter into a water agreement with Zone 7 Water Agency, or an alternative water provider approved by the CPM. The project water use shall be limited to 50 acre-feet (AF) during project construction and 2 acre-feet per year (AFY) during project operation. The third-party vendor selected to transport water to the project site during project operations shall be licensed by the California Department of Public Health (CDPH) as a potable water hauler pursuant to Health and Safety Code section 111120.

Verification: At least 30 days prior to the start of project construction or water delivery, whichever is first, the project owner shall provide verification of a water agreement secured with Zone 7 Water Agency, or an alternative water provider approved by the CPM. During project construction, the monthly compliance report shall include a daily summary of water use. At least 30 days prior to the start of project operations, the project owner shall provide evidence of a CDPH license for the selected third-party water hauler. The project owner shall include a monthly and annual summary of both construction and operations water use in the ACR.

5.16.6 Recommended Mitigation Measures

MM-WATER-1 The project owner shall manage stormwater discharges from project construction activities by fulfilling the requirements contained in State Water Resources Control Board's NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit, or CGP) (Order No. 2022-0057-DWQ, NPDES No. CAS000002) and all subsequent revisions and amendments. Among the requirements of the General Permit, the project owner shall file permit registration documents electronically using the Stormwater Multiple Applications and Report Tracking Systems (SMARTS), submit a Notice of Intent (NOI), and develop and implement a construction Stormwater Pollution Prevention Plan (SWPPP) for project construction (Construction SWPPP). The SWPPP shall include all best management practices (BMPs) applicable for the project construction activities conducted in the local environment. The SWPPP must be prepared by a State-Qualified SWPPP Developer (QSD).

Verification: At least thirty (30) days prior to site mobilization, the project owner shall submit to the Compliance Project Manager (CPM) proof that an NOI was filed for the construction general permit and that a waste discharge identification number (WDID) was issued by the SWRCB. Within ten (10) days of its mailing or receipt, the project owner shall submit to the CPM any correspondence between the project owner and the SWRCB or the Central Valley Regional Water Quality Control Board (CVRWQCB) concerning the CGP. This information shall include the NOI, any updates to the construction SWPPP, and the notice of termination. The project owner shall notify the CPM in writing of any reported non-compliance and include these in the annual compliance report (ACR). Any monitoring documentation associated with the SWPPP shall be included in the ACR.

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Section 6

Environmental Justice

6 Environmental Justice

6.1 Policy Drivers

California law defines environmental justice (EJ) as "the fair treatment of people of all races, cultures and income with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies" (Gov. Code, § 65040.12). in respective EJ Policies.[1] The California Natural Resources Agency policy directs all departments, boards, commissions, conservancies and special programs of the Resources Agency must consider EJ in their decision-making process if their actions have an impact on the environment, environmental laws, or policies. Such actions that require EJ consideration may include:

- Adopting regulations;
- Enforcing environmental laws or regulations;
- Making discretionary decisions or taking actions that affect the environment;
- Providing funding for activities affecting the environment; and
- Interacting with the public on environmental issues

The California Natural Resources Agency recognizes that EJ communities are commonly identified as those where residents are predominantly minorities or live below the poverty level; where residents have been excluded from the environmental policy setting or decision-making process; where they are subject to a disproportionate impact from one or more environmental hazards; and where residents experience disparate implementation of environmental regulations, requirements, practices, and activities in their communities. Environmental justice efforts attempt to address the inequities of environmental protection in these communities.

Beyond the fair treatment principles described in statute, CEC considers EJ during its staff assessment process. CEC has included EJ analyses in its environmental review of power plant siting cases for over two decades. CEC's goal is to ensure, through equal access to the decision-making process, everyone has equal protection from environmental and health hazards and can live, learn, play, and work in a healthy environment.

Environmental Justice in the Energy Commission Siting Process

As described above, EJ analysis is part of the CEC's site certification process. CEC uses U.S. Census data to identify minority and/or low-income populations (i.e., an EJ population) and consideration is also given to the California Environmental Protection Agency's (CalEPA) California Communities Environmental Health Screening Tool (CalEnviroScreen) to identify communities most affected by many sources of pollution, and where people are often especially vulnerable to pollution's effects (referred to as a

disadvantaged community by CalEnviroScreen). The "Environmental Justice Project Screening" subsection below presents the demographic data for those people living in a 6-mile radius of the proposed project site and a determination of presence or absence of an EJ population. When an EJ population is identified, the analyses in nine technical areas[1] consider the project's impacts on this population and if those impacts would disproportionately affect the EJ population. The "Project Outreach" subsection below discusses the CEC's outreach program specifically as it relates to the proposed project.

CEC staff typically conduct EJ analysis by taking the following steps:

- Identification of a population of minority persons and/or persons with low income (i.e., EJ community), living in an area potentially affected by the proposed project;
- Providing notice in appropriate languages (when possible) of the proposed project and opportunities for participation in public workshops for disadvantaged communities;
- Identification of areas potentially affected by various project-related emissions (e.g., air quality, hazardous materials, etc.) or other project-related nuisance effects (e.g., noise, traffic, etc.); and
- A determination of the potential for a significant adverse disproportionate impact on an identified EJ population resulting from the proposed project alone, or in combination with other existing and/or planned projects in the area (i.e., from cumulative impacts).

DACAG. California Senate Bill (SB) 350, the Clean Energy and Pollution Reduction Act of 2015, called for the formation of a statewide Disadvantaged Communities Advisory Group (DACAG), consisting of members either from or representing disadvantaged communities, to advise the CEC and the California Public Utility Commission (CPUC) regarding the development, implementation, and impacts of proposed programs related to SB 350 and other relevant clean energy programs and policies. Its purpose is to ensure that disadvantaged communities, including Tribal and rural communities, benefit from proposed clean energy and pollution reduction programs.

Consistent with the CEC's Energy Equity Indicators tool, the DACAG uses the following factors to define "disadvantaged" (including community residents, workers, and businesses) in its work: (1) CalEnviroScreen disadvantaged community, as defined by CalEPA, (2) tribal lands, (3) Census tracts where area median income is less than 80 percent of state median income, and (4) households with median income less than 80 percent of Area Median Income (AMI).

1 Typically, the nine technical areas analyzed as part of the CEC Environmental Justice analysis are Air Quality; Cultural and Tribal Cultural Resources; Hazards, Hazardous Materials and Wildfire; Water Resources; Noise and Vibration; Public Health; Solid Waste Management; Transportation; and Visual Resources. Cultural and Tribal Cultural Resources considers impacts to Native American populations.

JAEDI. The CEC's Justice Access Equity Diversity Inclusion (JAEDI) Initiative started in 2019 as part of CEC's commitment to embedding energy equity and EJ in its energy future. The JAEDI Framework is a mechanism to help establish a common understanding and approach for the CEC to address climate change and ensure all Californians have dignity, health, and prosperity.

Under the JAEDI criteria, "Justice Communities" is a broad umbrella term that encompasses the following designations: (1) disadvantaged communities, pursuant to SB 535,[2] (2) low-income communities, pursuant to Assembly Bill 1550 (Gomez, Chapter 369, Statutes of 2016),[3] (3) underserved community, pursuant to Assembly Bill 841 (Ting, Chapter 362, 2020),[4] and (4) people living with disabilities as defined by the Americans with Disabilities Act (ADA).[5]

CalEnviroScreen

In 2012, CalEPA developed CalEnviroScreen as a science-based mapping tool that provides an objective method for evaluating multiple pollutants and stressors in local communities, and ultimately for identifying disadvantaged communities pursuant to Health and Safety Code section 39711 as enacted by SB 535 (De León, Stats. 2012 Ch. 830). CalEPA released an updated designation for disadvantaged communities in May 2022 for the purposes of SB 535. As required by State law, disadvantaged communities are identified based on geographic, socioeconomic, public health, and environmental hazard criteria. CalEnviroScreen identifies impacted communities by taking into consideration pollution exposure and its effects, as well as health and socioeconomic status, at the Census-tract level (OEHHA 2021, pg. 8).

The CalEnviroScreen model incorporates 21 indicators that measure a community's exposure, environmental effects, sensitive population, and socioeconomic factors. Indicators for exposure and environmental effects comprise a Pollution Burden group,

2 The California Environmental Protection Agency, for purposes of its Cap-and-Trade Program, defines communities in terms of Census tracts and identifies four types of geographic areas as disadvantaged: (1) Census tracts receiving the highest 25 percent of overall scores in CalEnviroScreen 4.0; (2) Census tracts lacking overall scores in CalEnviroScreen 4.0 due to data gaps, but receiving the highest 5 percent of CalEnviroScreen 4.0 cumulative pollution burden scores; (3) Census tracts identified in the 2017 DAC (disadvantaged community) designation as disadvantaged, regardless of their scores in CalEnviroScreen 4.0; (4) and areas under the control of federally recognized Tribes (CalEPA 2022).
3 (1) Census tracts with median household incomes at or below 80 percent of the statewide median income or at or below the Department of Housing and Community Development designation of low-income, and (2) Households with incomes at or below 80 percent of the statewide median income or at or below the Department of Housing and Community Development designation of low-income
4 A community in which at least 75 percent of public-school students in the project area are eligible to receive free or reduced-price meals under the National School Lunch Program
5 An individual with a disability is defined by the ADA as a person who has a physical or mental impairment that substantially limits one or more major life activities, a person who has a history or record of such an impairment, or a person who is perceived by others as having such an impairment.

and indicators for sensitive populations and socioeconomic factors comprise a Population Characteristics group.

Table 6-1 lists the indicators that go into the Pollution Burden score and the Population Characteristics score to form the final CalEnviroScreen score. These indicators are used to measure factors that affect the potential for pollution impacts in communities.

TABLE 6-1 COMPONENTS THAT FORM THE CALENVIROSCREEN 4.0 SCORE

Pollution Burden	
Exposure Indicators	**Environmental Effects Indicators**
Children's lead risk from housing	Cleanup sites
Diesel particulate matter (PM) emissions	Groundwater threats
Drinking water contaminants	Hazardous waste
Ozone concentrations	Impaired water bodies
PM 2.5 concentrations	Solid waste sites and facilities
Pesticide use	
Toxic releases from facilities	
Traffic density	
Population Characteristics	
Sensitive Populations Indicators	**Socioeconomic Factors Indicators**
Asthma emergency department visits	Educational attainment
Cardiovascular disease (emergency department visits for heart attacks)	Housing burdened low-income households
Low birth-weight infants	Linguistic isolation
	Poverty
	Unemployment

Notes: PM= particulate matter. PM 2.5= fine particulate matter 2.5 microns or less.
Source: OEHHA 2021

The CalEnviroScreen model uses U.S. Census tract data as a geographic scale for identifying disadvantaged communities within California. For each Census tract, CalEnviroScreen calculates an overall score by combining the individual indicator scores within each of the two groups (i.e., Pollution Burden and Population Characteristics), then multiplying the Pollution Burden and Population Characteristics scores to produce a final score:

[Pollution Burden] x [Population Characteristics] = CalEnviroScreen Score

- Pollution Burden Score. Pollution Burden scores for each U.S. Census tract are derived from the average percentiles of the eight exposures indicators (ozone and PM2.5 concentrations, diesel PM emissions, drinking water contaminants, children's lead risk from housing, pesticide use, toxic releases from facilities, and traffic impacts) and the five environmental effects indicators (cleanup sites, impaired water bodies, groundwater threats, hazardous waste facilities and generators, and solid waste sites and facilities). Indicators from the environmental effects component are given half the weight of the indicators from the exposure's component. The calculated average Pollution Burden score (average of the indicators) is divided by 10 and rounded to one decimal place for a Pollution Burden score ranging from 0.1 to 10.

- Population Characteristics Score. Population Characteristics scores for each U.S. Census tract are derived from the average percentiles for the three sensitive populations indicators (cardiovascular disease, low birth weight infants, and asthma) and the five socioeconomic factors indicators (educational attainment, linguistic isolation, housing burden, unemployment, and poverty). The calculated average percentile is divided by 10 for a Population Characteristic score ranging from 0.1 to 10.

Since each of the two groups (i.e., Pollution Burden and Populations Characteristics) has a maximum score of 10, the maximum CalEnviroScreen Score is 100. Based on these scores, Census tracts across California are ranked relative to one another. The indicator values for the Census tracts for the entire state are ordered from highest to lowest. A percentile is calculated from the ordered values for all areas that have a score. A higher percentile indicates a higher potential relative burden. A percentile does not describe the magnitude of the difference between two tracts, but rather it simply tells the percentage of tracts with lower values for that indicator (OEHHA 2021, pg. 20).

The CalEPA, for purposes of its Cap-and-Trade Program, defines communities in terms of Census tracts and identifies four types of geographic areas as disadvantaged: (1) Census tracts receiving the highest 25 percent of overall scores in CalEnviroScreen 4.0; (2) Census tracts lacking overall scores in CalEnviroScreen 4.0 due to data gaps, but receiving the highest 5 percent of CalEnviroScreen 4.0 cumulative pollution burden scores; (3) Census tracts identified in the 2017 DAC designation as disadvantaged, regardless of their scores in CalEnviroScreen 4.0; (4) and areas under the control of federally recognized Tribes (CalEPA 2022).

CEC staff may use CalEnviroScreen to assess project effects on communities identified as disadvantaged (i.e., low-income and/or high-minority populations, SB 535-designated disadvantaged communities) by reviewing indicators (see **Table 6-1**) as they relate to particular technical areas.

There are five technical areas that could have project specific impacts that could combine with the indicators in CalEnviroScreen: Air Quality; Hazards, Hazardous Materials/Waste, and Wildfire; Public Health; Solid Waste Management; and Water Resources. CEC staff reviews the CalEnviroScreen data for the project as follows:

- For Air Quality, these indicators are ozone concentrations and PM with diameters of 2.5 micrometers or smaller (PM2.5) concentrations.
- For Hazards, Hazardous Materials/Waste, and Wildfire, these indicators are cleanup sites and hazardous waste generators and facilities.
- For Public Health, these indicators are asthma, cardiovascular disease, diesel particulate matter (PM) emissions, low birth-weight infants, pesticide use, toxic releases from facilities, and traffic impacts.
- For Solid Waste Management, these indicators are solid waste sites and facilities.

- For Water Resources, these indicators are drinking water contaminants, groundwater threats, and impaired water bodies.

When these technical areas have identified a potential project impact where an EJ population is present, CalEnviroScreen is used to better understand the baseline characteristics of the areas where the impact would occur and ensure that disadvantaged communities in the vicinity of the proposed project have not been missed when screened by race/ethnicity and low income alone.

Project Outreach

In 2016, SB 1000 (Leyva, Chapter 587, Statutes of 2016) was enacted to require local governments with disadvantaged communities, as defined in statute, to incorporate EJ into their general plans when two or more general plan elements (sections) are updated. The Governor's Office of Land Use and Climate Innovation (the state's comprehensive planning agency) worked with State agencies, local governments, and many partners to update the General Plan Guidelines in 2020 to include guidance for communities on EJ (LCI 2020). This law has several purposes, including to facilitate transparency and public engagement in local governments' planning and decision-making processes, reduce harmful pollutants and the associated health risks in EJ communities, and promote equitable access to health-inducing benefits, such as healthy food options, housing, public facilities, and recreation.

Meaningful involvement is an important part of the siting process and occurs when:

- Those whose environment or health would be potentially affected by the decision on the proposed activity have an appropriate opportunity to participate in the decision;
- The population's contribution can influence the decision; and
- The concerns of all participants involved are considered in the decision-making process.

CEC staff and the Office of the Public Advisor, Energy Equity, and Tribal Affairs (PAO+) coordinated closely on public outreach early in the review process. The PAO+ outreach consisted of emails to environmental organizations, schools and school districts, daycare centers, equestrian centers, community service organizations, vineyards and wineries, youth organizations, and religious organizations within a ten-mile radius of the proposed project.

CEC staff filed and mailed to the project mail list a Notice of Preparation (NOP) to prepare an Environmental Impact Report on September 2, 2025. The NOP was also distributed via email to those on the project's subscription list, an automated CEC system by which information about this proceeding is emailed to persons who have subscribed. Based on current U.S. Census English fluency data for the population residing in the cities and communities within a 6-mile radius of the project site, translation of the public notices was deemed appropriate. A notice of receipt was

translated to Spanish and posted in the El Observador. The meeting notice for informational and scoping meeting was translated to Spanish and filed to the project docket.

In accordance with the Governor's Executive Order B-10-11, the CEC's Tribal Consultation Policy, the CEC's Siting Regulations, and amendments to CEQA (i.e., Assembly Bill 52), CEC staff conducted outreach and consultation with regional tribal governments. Additional information regarding the outreach efforts and specific groups contacted can be found in **Section 5.4, Cultural and Tribal Cultural Resources**.

As described in **Section 2, Introduction**, CEC staff exceeded the noticing requirements under CEQA Guidelines Section 15087 by mailing the Notice of Availability of the Draft EIR to all owners and occupants not just contiguous to the project site but also to property owners within 1,000 feet of project site and 500 feet of project linear facilities.

6.2 Environmental Setting

Environmental Justice Project Screening. For EJ concerns, the CEC staff has historically used a 6-mile radius surrounding the project site based on the potential distance that air pollution emissions from a natural gas powerplant can travel. While the proposed project does not include a thermal powerplant, staff retained the 6-mile distance based on the parameters used in staff's cumulative impacts analysis for air quality.

Figure 6-1 presents the 2020 U.S. Census tracts contained within a 6-mile radius of the project site with a population greater than 50 percent (US Census 2020). The population in these census blocks represents an EJ population based on race and ethnicity.

Table 6-2 presents the income data of the 6-mile radius area surrounding the project site. The socioeconomic data source is U.S. Census Bureau's American Community Survey (ACS) 2019-2023 5-Year Estimates (ACS 2023). Because ACS estimates come from a sample population, a certain level of variability is associated with the estimates. Supporting documentation on ACS data accuracy and statistical testing can be found on the ACS website in the Data and Documentation section available here: https://www.census.gov/programs-surveys/acs.html. For purposes of this analysis, U.S. Census ACS data was utilized to provide current data, consistency between the data used to identify low-income populations, and consistency between the different geographies presented. For these reasons, U.S. Census ACS data is considered best available for representing the demographic makeup of affected communities in the project area. Use of published U.S. Census ACS data estimates is commonly used by CEQA Lead Agencies.

Consistent with CalEnviroScreen, for the purpose of this analysis, low-income people are defined as those with an income of less than 2.0 times the federal poverty threshold (EPA 2015, 2024; OEHHA 2021). Within this analysis, an EJ population of concern is identified when the percentage of low-income population of the potentially affected area (i.e., block group or Census tract) is equal to or greater than the low-income population of the greater geography (i.e., the County).

Figure 6-2 presents the low-income population for the census tracts and block groups within the 6-mile radius of the project site and of the reference geographies, Alameda and San Joaquin counties. As shown in **Table 6-2**, Alameda County has 19.61 percent low-income. There is one census tract and two block groups in Alameda County and within the 6-mile radius of the project site with a range of 3.8 to 13.7 percent low-income. The percent of the low-income in the Census Tract and block groups is less than the percentage of the low-income population in Alameda County. As shown in **Table 6-2**, San Joaquin County percent of low-income is 30.24. There are nine census tracts and 20 block groups in San Joaquin County and within the 6-mile radius with a range of 0.3 percent to 24.4 percent low-income. The percentage of the low-population in the Census Tracts and block groups within 6-mile radius of the project site is less than the percentage of the low-income population in San Joaquin County.

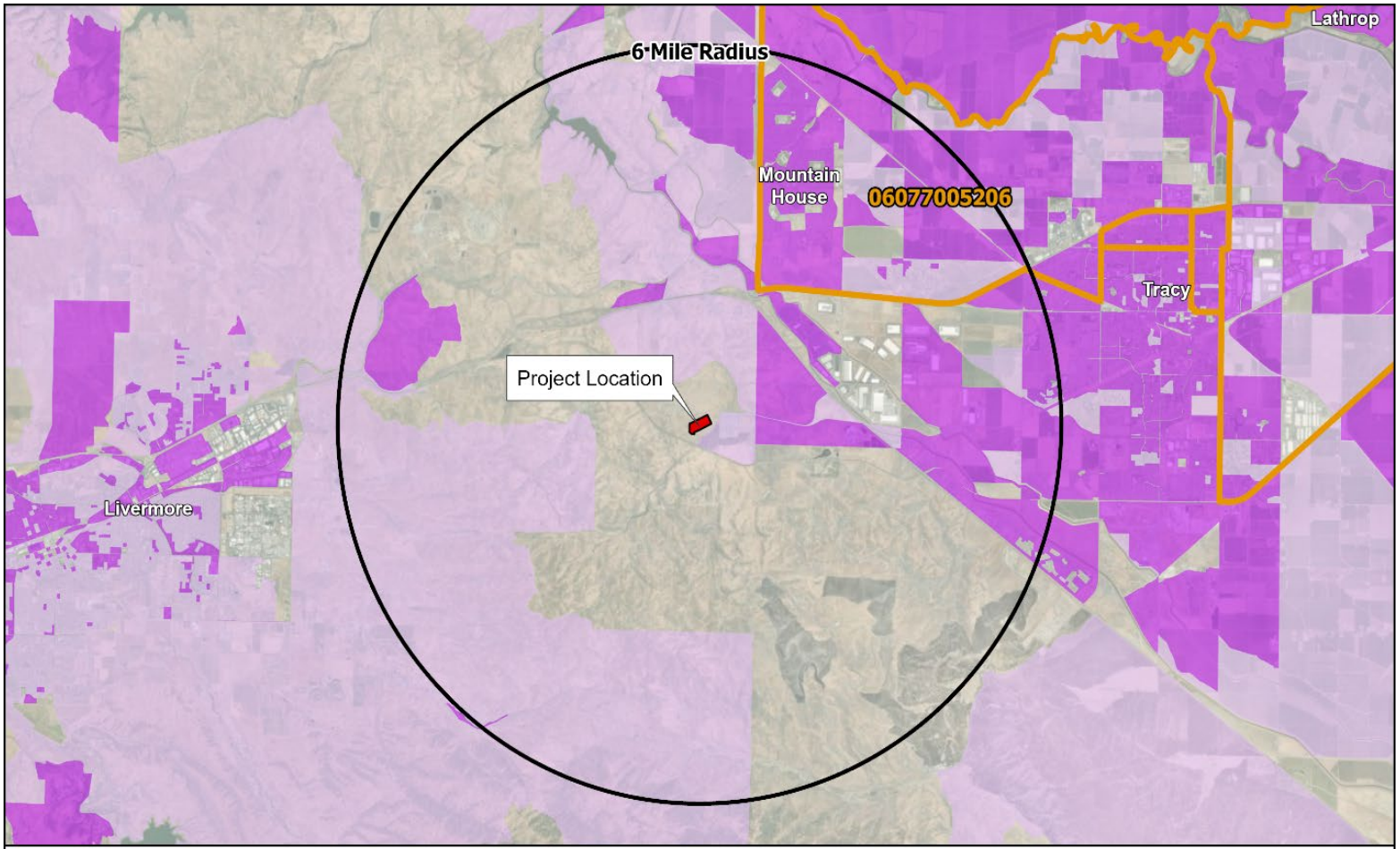
TABLE 6-2 INCOME STATISTICS FOR CALIFORNIA, ALAMEDA AND SAN JOAQUIN COUNTIES, AND PROJECT 6-MILE RADIUS

Geography	Total Population (whose poverty status is known)	People with Ratio of Income to Poverty 2.0 and under	Percent Low-Income
California	38,529,452	10,602,180	27.52
Alameda County	1,624,096	318,458	19.61
Census Tract 4511.04	6871	939	13.7
Block Group 1	1,833	70	3.8
Block Group 3	2,599	272	10.5
San Joaquin County	773,079	233,762	30.24
Census Tract 55.02	3903	544	14.2
Block Group 1	2938	133	4.5
Census Tract 52.23	10,793	1,702	15.8
Block Group 1	4,915	843	17.2
Block Group 2	3,887	419	10.8
Block Group 3	1,991	440	22.1
Census Tract 52.24	5,536	445	8.0
Block Group 1	1,280	243	19.0
Block Group 2	4,256	789	18.5
Census Tract 52.25	3,291	647	19.7
Block Group 1	537	0	-
Block Group 2	2,754	647	23.5
Census Tract 52.11	4,602	777	16.9
Block Group 1	612	79	12.9
Block Group 2	1,663	405	24.4
Block Group 3	2,327	293	12.6

TABLE 6-2 INCOME STATISTICS FOR CALIFORNIA, ALAMEDA AND SAN JOAQUIN COUNTIES, AND PROJECT 6-MILE RADIUS

Geography	Total Population (whose poverty status is known)	People with Ratio of Income to Poverty 2.0 and under	Percent Low-Income
Census Tract 52.12	7,679	609	7.9
Block Group 1	2,300	558	24.3
Block Group 2	2,933	9	0.3
Block Group 3	2,446	42	1.7
Census Tract 52.13	3,685	142	3.9
Block Group 1	1,001	65	6.5
Block Group 2	2,884	77	2.7
Census Tract 52.21	9,226	474	5.1
Block Group 1	6,942	321	4.6
Block Group 2	2,284	153	6.7
Census Tract 52.22	5,078	87	1.7
Block Group 1	2,507	17	0.7
Block Group 2	2,571	70	2.7

Notes: Low-income population is defined when the percent of a population (i.e., in a county or Census tract) in households is less than or equal to twice the poverty level. The ACS low-income information is from Table C17002, "Ratio of Income to Poverty Level in the Past 12 Months." Highlighted rows show population where low-income population percentage is greater than the larger comparative geography (Alameda and San Joaquin County).
Source: ACS 2023


6 Mile Radius
Lathrop
Mountain House
06077005206
Tracy
Project Location
Livermore
Potentia-Viridi BESS
6 Mile Radius
Disadvantaged Communities
2020 Census
Percent Minority Population by Census Block
0 - 50%
51 - 100%
Disadvantaged Communities are census tracks that; 1. have the highest 25 percent of overall scores in CalEnviroScreen 4.0 (CES 4.0); 2. lack overall scores in CES 4.0 cumulative pollution burden scores; 3. are identified in 2017 DAC designation as disadvantaged, regardless of CES 4.0 scores; and 4. are under control of federally recognized tribes (CalEPA 2022).
0
2
4
Miles
Figure 6-1
Minority Population and Disadvantaged Communities
Sources:
Census 2020 PL 94-171, and SB 535 Disadvantaged Communities, 2022

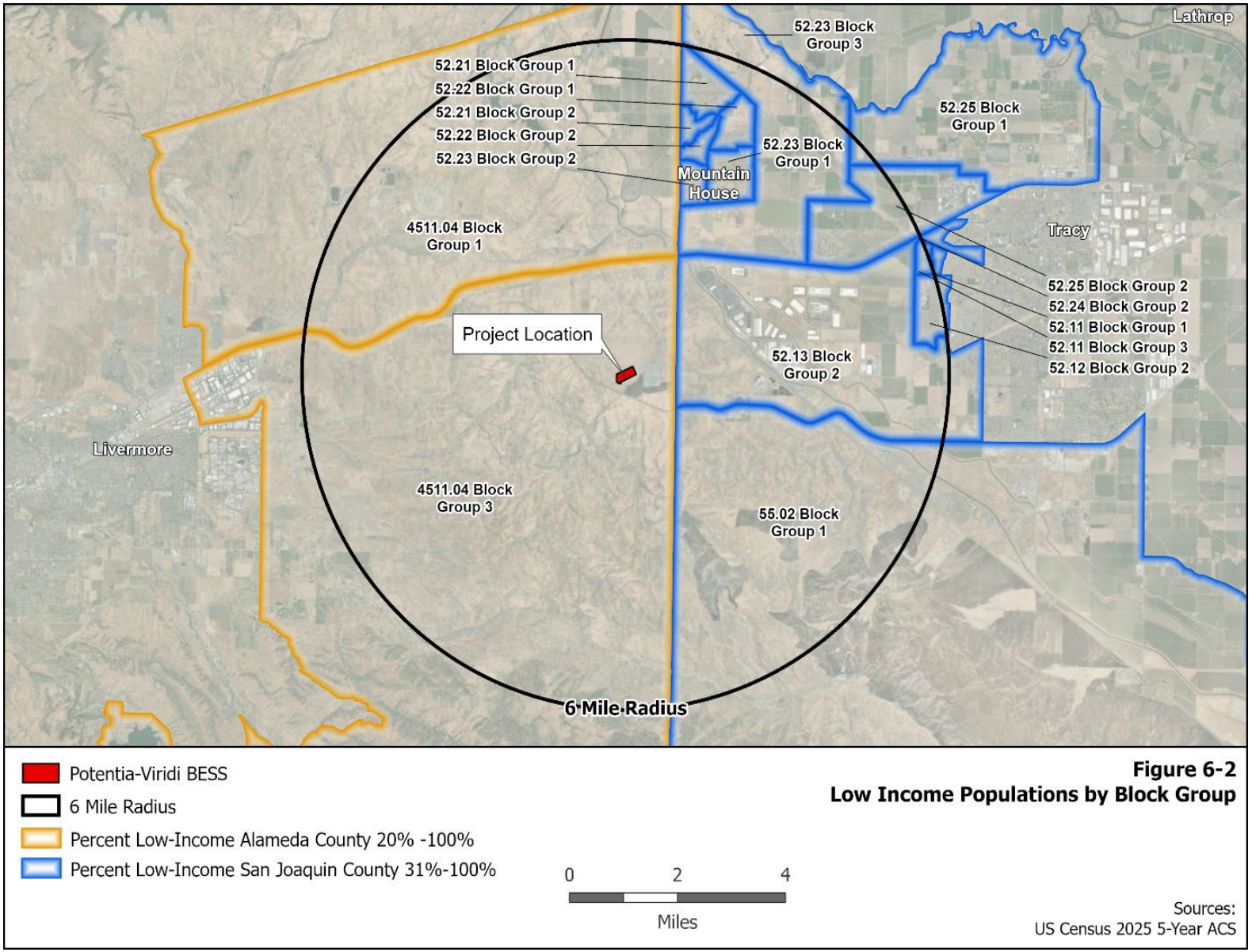


Figure 6-2
Low Income Populations by Block Group

CalEnviroScreen Results. CalEnviroScreen 4.0 was used to gather additional information about the population potentially impacted by the proposed project. The CalEnviroScreen indicators (See **Table 6-1**) are used to measure factors that affect the potential[6] for pollution impacts in disadvantaged communities, as defined by CalEnviroScreen. CEC staff used CalEnviroScreen to identify if additional disadvantaged communities[7] were in the vicinity of the proposed project and better understand the characteristics of the areas where impacts would occur.

Table 6-3 present the CalEnviroScreen overall scores of the disadvantaged community within a 6-mile radius of the project site. The location of the census tract is shown in **Figure 6-1**. **Table 6-4** presents the CalEnviroScreen percentiles for the indicators that make up the pollution burden percentile. **Table 6-5** presents the percentiles for the indicators that make up the population characteristics.[8]

TABLE 6-3 CALENVIROSCREEN SCORES FOR DISADVANTAGED COMMUNITIES

Census Tract No.	Total Population	CalEnviroScreen 4.0 Percentile	Pollution Burden Percentile	Population Characteristics Percentile	Disadvantaged Community Category
6077005206	26,742	57.77	85.61	36.89	2017 Disadvantaged Community (CalEnviroScreen 3.0 only)

Note: Disadvantaged community by Census tract in the project's 6-mile radius.
Source: CalEnviroScreen

6 It is important to note that CalEnviroScreen is not an expression of health risk and does not provide quantitative information on increases of impacts for specific sites or projects. CalEnviroScreen uses the criteria of "proximity" to a hazardous waste site, a leaking underground tank, contaminated soil, an emission stack (industry, power plant, etc.) to determine that a population is "impacted." It does not address general principles of toxicology: dose/response and exposure pathways. For certain toxic chemicals to pose a risk to the public, offsite migration pathways must exist (through ingestion, inhalation, dermal contact, etc.) and contact to a certain amount – not just any amount – must exist.
7 The CalEPA, for purposes of its Cap-and-Trade Program, defines communities in terms of Census tracts and identifies four types of geographic areas as disadvantaged: (1) Census tracts receiving the highest 25 percent of overall scores in CalEnviroScreen 4.0; (2) Census tracts lacking overall scores in CalEnviroScreen 4.0 due to data gaps, but receiving the highest 5 percent of CalEnviroScreen 4.0 cumulative pollution burden scores; (3) Census tracts identified in the 2017 DAC designation as disadvantaged, regardless of their scores in CalEnviroScreen 4.0; (4) and areas under the control of federally recognized Tribes (CalEPA 2022).
8 CalEnviroScreen uses 2010 Census tracts, which are different from the updated Census tracts used in **Table 6-2**.

TABLE 6-4 CALENVIROSCREEN INDICATOR PERCENTILES FOR POLLUTION BURDEN FOR DISADVANTAGED CENSUS TRACTS

Census Tract No.	Percentiles													
	Pollution Burden	Ozone	PM2.5	Diesel PM	Drinking Water	Lead	Pesticides	Toxic Release	Traffic	Cleanup Sites	Groundwater Threats	Hazardous Waste	Impaired Water Bodies	Solid Waste
06077020605	58.23	40.24	40.24	45.33	76.70	6.24	79.55	26.68	54.96	71.82	92.36	78.40	86.96	35.72

Source: CalEnviroScreen

TABLE 6-5 CALENVIROSCREEN INDICATOR PERCENTILES FOR POPULATION CHARACTERISTICS FOR DISADVANTAGED TRACTS

Census Tract No.	Percentiles								
	Population Characteristics	Asthma	Low Birth Weight	Cardiovascular Disease	Education	Linguistic Isolation	Poverty	Unemployment	Housing Burden
06077020605	36.89	39.23	49.28	72.06	39.21	31.30	13.27	33.58	25.73

Source: CalEnviroScreen

Summary of Environmental Justice Communities

As shown in **Table 6-2** and **EJ Figure 6-2**, there is not an EJ population based on low-income within the 6-mile radius of the project site. CEC staff compared the percentage of low-income population in the Census Tracts and block groups to the reference geographies of Alameda and San Joaquin counties. The Census Tracts and block groups had a lower percentage of low-income population than the reference geographies.

The project site is not located in a CalEnviroScreen 4.0 DAC and there is one DAC within the project site's 6-mile radius. While the DAC no longer falls within the 25 percent highest scoring census tracts statewide, the SB 535 Final Designation (May 2022) designates the census tracts scoring in the highest 25 percent in CalEnviroScreen 3.0 to be designated as a DAC in CalEnviroScreen 4.0.

Based on these demographic and environmental indicators, the project study area contains an EJ population based on race and ethnicity using 2020 Census data and contains one census tract identified as a CalEnviroScreen 4.0 DAC. The resource-specific analyses that follow considered whether the project activities could result in disproportionately high and adverse effects on minority and low-income individuals residing within the 6-mile radius.

6.3 Environmental Impacts

The following technical areas discuss impacts to EJ populations: Air Quality; Cultural and Tribal Cultural Resources; Hazards, Hazardous Materials/Waste, and Wildfire; Noise and Vibration; Public Health; Solid Waste Management; Transportation; Visual Resources; and Water Resources. As noted in subsection "6.1 Policy Drivers" above, five of these technical areas could have project impacts that could overlap with the indicators in CalEnviroScreen: Air Quality; Hazards, Hazardous Materials/Waste, and Wildfire; Public Health; Solid Waste Management; and Water Resources.

Air Quality

The project is located within the boundaries of the San Francisco Bay Area Air Basin (SFBAAB). As described in **Section 5.1, Air Quality**, the area of the SFBAAB in which the project is located, is classified as nonattainment for the one-hour state ozone standard as well as for the federal and state eight-hour ozone standards. The SFBAAB is also designated as nonattainment for the federal and state annual arithmetic mean and federal 24-hour PM2.5 standards. Additionally, the SFBAAB is classified as nonattainment for the state 24-hour and annual arithmetic mean PM10 standards. The SFBAAB is unclassified or classified as attainment for all other pollutant standards.

CEC staff evaluated potential air quality impacts that could affect the identified EJ populations by reviewing the air quality-related indicators in CalEnviroScreen shown in **Table 6-4**, including ozone concentrations and PM2.5 levels. The local cumulative concentrations of air pollutants are dominated by the combined effects of existing,

background stationary, and mobile sources. CEC staff concluded that the project's criteria pollutant emissions would not occur at rates that could be cumulatively significant after mitigation (**Section 5.1, Air Quality**). The project would contribute to temporary construction impacts, but it would not contribute considerably to the cumulative concentrations; therefore, no disproportionate impacts to an EJ population would occur.

Ozone Concentrations

The exposure indicator in CalEnviroScreen for ozone concentrations represents the potential adverse health effects, including respiratory irritation and exacerbation of lung disease, resulting from ground level ozone. This indicator is defined by the mean of summer months (May-October) of the daily maximum 8-hour ozone concentration. Those in the project area are exposed to lower ozone concentrations when compared to the rest of the state. As described in **Section 5.1, Air Quality**, project construction and operation would not produce NOx or VOCs, which are precursors of ozone, above regulatory thresholds. CEC staff concluded that the project would not contribute significantly to regional ozone concentrations, relative to baseline conditions. No disproportionate impacts to an EJ population would occur.

Particulate Matter (PM2.5 and PM10) Concentrations

Particulate matter (PM) is a complex mixture of aerosolized solid and liquid particles including such substances as organic chemicals, dust, allergens, and metals. These particles can come from many sources, including cars and trucks, industrial processes, wood burning, or other activities involving combustion. The composition of PM depends on the local and regional sources, time of year, location, and weather. Those in the project area are exposed to lower PM2.5 concentrations when compared to the rest of the state. With the implementation of Air Quality COCs and mitigation measures, PM2.5 and PM10 concentrations during construction and operation would not exceed federal or state thresholds. No disproportionate impacts to an EJ population would occur.

Cultural and Tribal Cultural Resources

As discussed in **Section 5.4, Cultural and Tribal Cultural Resources**, the project has the potential to cause significant impacts on buried or inadvertently discovered cultural or tribal cultural resources. The archaeological project area of analysis has a low to moderate probability of containing buried archaeological resources, which could meet CEQA's criteria for historical resources. If such resources were damaged during construction, it would be considered significant because of the cultural loss to affiliated California Native American tribes or other local communities and the cultural and scientific data loss to all. Ground disturbance associated with project construction could result in the inadvertent discovery of human remains and associated funerary items that meet CEQA's criteria for historical, unique archaeological, or tribal cultural resources. Damage to human remains would be a significant impact under CEQA. Therefore, COCs and MMs have been included to minimize impacts from inadvertent discoveries. Hence,

with mitigation incorporated, inadvertently discovered cultural or tribal cultural resources would be considered less than significant. No disproportionate impacts to an EJ population would occur.

Hazards, Hazardous Materials/Waste, and Wildfire

The CalEnviroScreen scores for the disadvantaged community census tracts in a 6-mile radius of the project are presented in **Table 6-4** for each of the following environmental stressors that relate to waste management: cleanup sites, hazardous waste generators and facilities, and solid waste facilities.

Hazards and Hazardous Materials. EJ populations may experience disproportionate impacts associated with hazards, hazardous materials, and wildfire impacts if the storage and use of hazardous materials within or near EJ communities occurs to a greater extent than within the community at large or if the project would contribute to or exacerbate the effects of cleanup sites, hazardous waste generators and facilities, and solid waste facilities.

As described in **Section 5.7, Hazards, Hazardous Materials/Waste, and Wildfire**, hazardous material brought onto the project site during construction and operation would be used and stored in accordance with local, state and federal regulations. Therefore, CEC staff determined that the likelihood of a spill or release of sufficient quantity to impact the surrounding community would be very unlikely and considered less than significant with mitigation incorporated. Since the overall CalEnviroScreen score reflects the collective impacts of multiple pollutants and factors, staff examined the individual contributions to indicators as they relate to hazardous materials presented in its analysis. Hazardous materials of concern in this analysis are those used and generated during construction and operational activities. Neither construction nor operation of the project is expected to generate significant quantities hazardous waste, other than those generated during construction activities such as fuels, lubricating and waste oils and solvents. The handling and disposal of each type of hazardous material depends on the hazardous properties of its constituent materials. CEC staff determined that existing LORS ensure the desired handling and disposal of hazardous material and hazardous waste materials to prevent potential public or environmental health impacts. No disproportionate impacts to an EJ population would occur.

Operation of the battery energy storage system (BESS) would include the use of lithium-ion batteries, which could increase the risk of a fire that could emit toxic gases. **Section 4.4, Worker Safety and Fire Protection**, includes COCs and procedures to protect workers from exposure to hazardous material. CEC staff concluded that the implementation of COCs and the Worker Safety programs would reduce the risk of accidental release of hazardous materials and waste, and exposure to hazardous materials and waste, to less than significant. CEC staff determined that the potential effects of hazardous materials accidents would be less than significant with mitigation incorporated from **Section 4.4, Worker Safety and Fire Protection**, and **Section**

5.7, Hazardous, Hazardous Materials/Waste and Wildfire. No disproportionate impacts to an EJ population would occur.

Cleanup Sites and Hazardous Waste Generators and Facilities. The CalEnviroScreen indicator is calculated by considering the number of cleanup sites including Superfund sites on the National Priorities List, the weight of each site, and the distance to the census tract. Sites undergoing cleanup actions by government authorities or property owners, have suffered environmental degradation due to the presence of hazardous substances. Of primary concern is the potential for exposure to these substances.

As described in **Section 5.7, Hazards, Hazardous Materials/Waste, and Wildfire**, the project site is not included on the databases maintained by the Department of Toxic Substances Control's Envirostor or the State Water Resources Control Board's (SWRCB) Geotracker as the location of any hazardous material sites. SWRCB database shows one case of a leaking underground storage tank (LUST) within a 0.5-mile radius, however the case was closed in 1994, indicating regulatory oversight has concluded (SWRCB, 2025). Therefore, CEC staff determined that impacts related to Government Code section 65962.5 would be less than significant. To further reduce the risk of exposure to unknown environmental contamination, staff proposed COCs would require a Soils Management Plan be prepared to identify procedures to address the handling, disposal, and assessment of such materials.

Existing LORS, and the implementation of COCs for hazardous materials and worker safety, would ensure the desired handling and disposal of hazardous material and waste , preventing potential public or environmental impacts. No disproportionate impacts to an EJ population would occur.

Wildfire. As described in **Section 5.7, Hazards, Hazardous Materials/Waste, and Wildfire**, the project site is within a State Responsibility Area (SRA) and has a High Fire Hazard Safety Zone (FHSZ) designation from the California Department of Forestry and Fire Protection (CAL FIRE (CAL FIRE, 2025)

The project would implement a Construction and Operations and Maintenance (O&M) Fire Protection and Prevention Program, a construction worker Health and Safety Plan, and Construction Fire Prevention Program as required by COCs. The Fire Protection and Prevention Program would reduce construction-related risks of wildfire, such as those associated with vehicles and equipment that could ignite dry vegetation. Additionally, the project would implement vegetation management at the project site during operations and would annually verify compliance, as required by the COCs. CEC staff concluded that the potential risk associated with wildfires would be less than significant with the implementation of the staff-proposed COCs. No disproportionate impacts to an EJ population would occur.

Noise and Vibration

Environmental Justice populations may experience disproportionate noise impacts if the siting of unmitigated industrial facilities occurs within or near EJ communities to a greater extent than within the community at large. The nearest residence is about 1,550 feet southeast of the project site and 550 feet south of the proposed gen-tie line. Noise levels due to construction activities would be temporary and intermittent. Alameda County Ordinance exempts noise from construction, provided that construction is limited to between 7 a.m. and 7 p.m., except on Saturdays and Sundays where it is limited to between 8 a.m. and 5 p.m. The CEC staff proposed COCs **NOISE-1, NOISE-2, NOISE-4**, and **NOISE-5** would ensure that noise generated by project construction activities would be reduced and would not result in a disproportionate impact for the EJ community.

The BESS operations and maintenance activities and associated infrastructure would be the primary sources of operational noise. The estimated noise levels from the operation of the proposed stationary noise sources on-site are projected to be 44 dBA L_{eq} at the nearby residence. Consequently, these estimated noise levels would fall below the existing daytime ambient noise levels (70 dBA L_{eq}) and the thresholds outlined in Section 6.60.040 of the County's Noise Ordinance (50 dBA L_{50} for daytime hours and 45 dBA L_{50} for nighttime hours). Since the projected noise emissions from the operational phase are not expected to exceed the County's Noise Ordinance, no noise reduction measures would be required, and operation of the project would not result in any disproportionate effects on the EJ population. Furthermore, COC **NOISE-3** would ensure measurement and verification so that the operational noise performance criteria are met.

Public Health

Section 5.10, Public Health, identified that the potential risks to public health during construction would be associated with exposure to diesel particulate matter (DPM) emissions from diesel-fueled engines. DPM is expected to be the predominant toxic air contaminant (TAC) emitted during construction and is the main contaminant of concern for this project.

Diesel PM Emissions. The exposure indicator in CalEnviroScreen for diesel PM emissions represents the adverse health effects, such as irritation to the eyes, throat, and nose, cardiovascular and pulmonary disease, and lung cancer from concentrated sources of PM emissions. This indicator is defined by the spatial distribution of diesel PM emissions from on-road and non-road sources.

CEC staff conducted a public health assessment by evaluating the information and data provided by the applicant (see **Section 5.10, Public Health**). Staff relied upon the expertise and guidelines of the CalEPA Office of Environmental Health Hazard Assessment (OEHHA) to identify contaminants that cause cancer or other noncancer health effects and to identify the toxicity, cancer potency factors, and non-cancer

Reference Exposure Levels (RELs). The health effects of exposure to toxic emissions are based on impacts to the maximum exposed individual.

CEC staff evaluated health risks primarily in relation to DPM, because it identified DPM as the TAC expected to be emitted in the largest quantity during project construction. Since OEHHA has not developed an acute REL for DPM, acute non-cancer health effects could not be evaluated.

The results of the health risk assessment indicated that, with implementation of Air Quality COCs, cancer risk and chronic noncancer risk hazard index would be below Bay Area Air District (BAAD) thresholds for construction and operation (see **Section 5.10, Public Health**). The health risks would be less than significant with mitigation incorporated. No disproportionate impacts to an EJ population would occur.

Pesticide Use. The exposure indicator in CalEnviroScreen for pesticide use represents certain high-hazard, high-volatility substances that may lead to unintended environmental damage. This indicator is defined by the total mass of active pesticide ingredients (filtered for hazard and volatility) used in production-agriculture areas. The proposed project would not use pesticides in areas that are available to the public, and the risk to the public would be less than significant. No disproportionate impacts to an EJ population would occur.

Toxic Releases from Facilities. The exposure indicator in CalEnviroScreen for chemical releases is defined by the toxicity-weighted concentrations of modeled chemical releases to air from facility emissions and off-site incineration.

According to the results of the health risk assessment conducted for the project in **Section 5.10, Public Health**, impacts associated with toxic releases from construction and operation activities (diesel-fueled equipment) would be less than significant with mitigation incorporated. The project would not have a significant cumulative contribution to toxic releases and there would not be any disproportionate impacts on the EJ population.

The BESS would include the use of lithium-ion batteries that could emit toxic gases in the event of a fire during operations or after disposal. CEC staff concluded that the project would result in a less than significant risk to the public during any potential BESS thermal runaway or fire event and through the disposal of hazardous materials or waste, including batteries. All battery disposals would be conducted in accordance with applicable LORS, COCs and the development of a Worker Safety Program to reduce the risks associated with on-site fire and the disposal of hazardous materials. The potential risk associated with project-related toxic emissions would be less than significant. No disproportionate impacts to an EJ population would occur.

Traffic Impacts. The exposure indicator in CalEnviroScreen for traffic impacts is the number of the vehicles in a specified area, that result in human exposure to chemicals

that are released into the air by vehicle exhaust. Communities in the project area are exposed to average traffic impacts as compared to the rest of the state. This indicator is defined by the sum of traffic volumes adjusted by road segment length. The project would temporarily generate vehicle trips to the site during project construction. These trips include workers, material, and equipment deliveries.

Analyzed in **Section 5.14, Transportation**, roads in the vicinity of the project area sufficient capacity to support temporary construction-related traffic while not violating the applicable level of service (LOS) standards. On-going operations of the project would not cause a material increase in traffic volumes within the transportation system affecting the efficiency of the transportation system, including transit, roadway, bicycle, and pedestrian facilities. Any effect of project-generated traffic during construction would be temporary in nature and is not expected to result in any long-term impacts to the transportation system. Therefore, the project's traffic impact would not have a significant cumulative contribution to the traffic density for the local general population. No disproportionate impacts to an EJ population would occur.

Asthma. The sensitive population indicator in CalEnviroScreen for asthma represents the number of emergency department visits for asthma per 10,000 people. As shown in **Table 6-5**, the census track near the project area has the number of ED visits for asthma per 10,000 people in 2020 was higher than 39 percent of tracts statewide. As described in **Section 5.1, Air Quality**, project construction and operation would not produce any criteria pollutants above regulatory thresholds. CEC staff concluded that air quality impacts would be less than significant with mitigation incorporated. Furthermore, CEC staff concluded that the project would not result in a cumulatively considerable net increase of any criteria pollutant, and the project's potential to contribute to the cumulative impact of criteria pollutant concentrations would be less than significant with mitigation incorporated.

Furthermore, according to the results of the health risk assessment conducted for the project cited in **Section 5.10, Public Health**, impacts associated with emissions from construction and operation activities would be less than significant with mitigation incorporated. Health effects of air contaminants emitted by the project would be less than significant for the project. No disproportionate impacts to an EJ population would occur.

Low Birth Weight Infants. This indicator measures the percentage of babies born weighing less than 2500 grams (about 5.5 pounds) out of the total number of Census tract births. Data for the project area indicates that the percentage of low birthweights is lower than the state average; the census tract in the project area shows a low-birth-weight percentile of 49.28, meaning the percent low birth weight is higher than 49 percent of tracts statewide. As described in **Section 5.1, Air Quality**, project construction and operation would not produce any criteria pollutants above regulatory thresholds. CEC staff concluded that air quality impacts would be less than significant with mitigation incorporated. Furthermore, CEC staff concluded that the project would

not result in a cumulatively considerable net increase of any criteria pollutant, and the project's potential to contribute to the cumulative impact of criteria pollutant concentrations would be less than significant with mitigation incorporated.

Furthermore, according to the results of the health risk assessment conducted for the project cited in **Section 5.10, Public Health**, impacts associated with emissions from construction and operation activities would be less than significant with mitigation incorporated. Health effects of air contaminants emitted by the project would be less than significant for the project. No disproportionate impacts to an EJ population would occur.

Cardiovascular Disease. This indicator represents the rate of heart attacks. It measures the number of emergency department (ED) visits for acute myocardial infarction (AMI) (or heart attack) per 10,000 people. As shown in **Table 6-5**, CalEnviroScreen data indicates that the census tract near the project area experiences a comparatively greater number of ED visits for cardiovascular disease. The census tract included a percentile of 72 percent, indicating that the number of ED visits for AMI per 10,000 people is higher than 72 percent of tracts statewide.

As described in **Section 5.1, Air Quality**, project construction and operation would not produce any criteria pollutants above regulatory thresholds. CEC staff concluded that air quality impacts would be less than significant with mitigation incorporated. Furthermore, staff concluded that the project would not result in a cumulatively considerable net increase of any criteria pollutant, and the project's potential to contribute to the cumulative impact of criteria pollutant concentrations would be less than significant with mitigation incorporated.

Furthermore, according to the results of the health risk assessment conducted for the project cited in **Section 5.10, Public Health**, impacts associated with emissions from construction and operation activities would be less than significant with mitigation incorporated. Health effects of toxic air contaminants emitted by the project would be less than significant for the project. No disproportionate impacts to an EJ population would occur.

Solid Waste Management

CalEnviroScreen considers data in the State's Solid Waste Information System and the number of solid waste facilities, operations, and disposal sites within 1,000 meters of a census tract, including closed landfills and disposal sites that have not met minimum state standards for closure. Data from the State's Hazardous Waste Tracking System is also considered (OEHHA, 2021). It should be noted that the subject disadvantaged community census tract (06077005206) is over 2 miles from the project site (Refer to Figure 6-1).

Nevertheless, CalEnviroScreen scores for the subject census tract regarding the Solid Waste category (Refer to Table 6-6) indicates a rank in the 36th percentile based on

the number and types of solid waste facilities in the vicinity, which is lower than average for tracts statewide. The handling and disposal of each type of project related construction and operation is dependent on the hazardous ranking of its constituent materials. Existing LORS ensure the desired handling and disposal of solid waste without potential public or environmental health impacts. CEC staff evaluated the project to identify whether it would generate solid waste in quantities that would exceed the capacity of existing facilities or impair the attainment of waste-reduction goals.

CEC staff also considered whether the amount of solid waste generated during construction or operation would comply with federal, state and local management and reduction statutes and regulations. CEC staff concluded that the quantity of solid waste generated could be disposed of in the two available landfills that have adequate capacity. In addition, COCs require the preparation of a Construction Waste Management Plan, which would ensure recycling to the greatest extent possible. Construction and operation of the proposed project would comply with applicable LORS. Staff concluded that there would be no increase in solid waste generators and facilities in the area due to project construction or operation because there is adequate capacity to dispose of project-related solid waste, and no existing solid waste sites would be affected by the project; therefore, the project would have a less than significant impact associated with the generation or disposal of solid waste with mitigation incorporated. No disproportionate impacts to an EJ population would occur.

Transportation

As discussed in **Section 5.14** the project is expected to have a less than significant transportation impact with mitigation incorporated. The extent of the identified transportation impact is related to construction and involves the project's driveways on Patterson Pass Road, Patterson Pass Road between the project site and Interstate 580, and the Patterson Pass Road/Interstate 580/International Parkway interchange. The project would have a less than significant impact related to transportation and with implementation of CEC staff's proposed COCs, the project would conform with applicable LORS. The COCs require the development and implementation of detailed Construction Traffic Management Plan (CMP). As presented in **Table 6-2** and **Figure 6-1** the areas of potential transportation impact are not within or adjacent to an EJ community. No disproportionate impacts to an EJ population would occur.

Visual Resources

According to the analysis conducted for the project cited in Section 5.15, Visual Resources, visual impacts associated with the introduction of the proposed project facilities into the existing landscape would be significant and unavoidable. However, the extent of these impacts would be limited to the viewshed surrounding the project and would primarily affect travelers on Patterson Pass Road, which passes adjacent to the south and eastern boundaries of the BESS facility, and would be spanned by the interconnecting (to Tesla Substation) gen-tie line.

According to the ACS data, there are EJ populations within the 6-mile radius of the project site including one Census tract and two block groups in Alameda County and nine Census tracts and 20 block groups in San Joaquin County (Table 6-2). However, among those tracts and groups, there is only one residence (approximately 0.28 mile southeast of the project boundary), within Alameda County Census Tract 4511.04, Group 3, that would have a view of the project. That project view would be partially obstructed by terrain and the visible project facilities would present as subordinate landscape features in the structural context established by the existing Tesla Substation. Although there are several other rural residences near the eastern boundary of Alameda Census Tract 4511.04 Block Group 3 and near the western boundary of San Joaquin County Census Tract 55.02 Block Group 1 (approximately 0.62 to 0.82 mile east of the project site), the views of the project from those residences would be substantially screened from view by terrain, vegetation, and the intervening Tesla Substation and connecting transmission lines. Therefore, no disproportionate visual impacts to an EJ population would occur.

Water Resources

The project would be required to comply with LORS such as the Clean Water Act (CWA) and California's Porter-Cologne Water Quality Control Act by controlling the discharge of pollutants during its construction and operation phases. The project would implement modern storm water and containment controls that would improve upon the site's potential to release contaminants to the environment. The project's water resources impacts would be less than significant with mitigation incorporated.

Disproportionate water resource impacts to an EJ population could occur if the project contributes to drinking water degradation, exacerbates groundwater contamination, or discharges additional pollutants to impaired surface water bodies. However, it should be noted that the subject disadvantaged community census tract (06077005206) is over 2 miles from the project site (Refer to **Figure 6-1**), and some CalEnviroScreen categories may not be as applicable. Since the overall CalEnviroScreen score reflects the collective impacts of multiple pollutants and factors, CEC staff examined the individual contributions to indicators as they relate to water resources. The pollutants of concern in this analysis are those from construction and operational activities. The CalEnviroScreen scores for the subject disadvantaged community census tract are presented in **Table 6-6** for each of the following environmental stressors that relate to water resources: Drinking Water Contaminants, Groundwater Threat, and Impaired Water Bodies.

Drinking Water Contaminants. CalEnviroScreen aggregates drinking water quality data from the California Department of Public Health, the U.S. EPA, and the SWRCB. The score provided by the Drinking Water Contaminant metric calculation is intended to rank water supplies relative to their history or likelihood to provide water that exceeds drinking water standards. Low-income rural communities, particularly those served by

small community water systems, can be disproportionately exposed to contaminants in their drinking water.

There are two water service agencies within the subject disadvantaged community census tract; 1) the Mountain House Community Service District (CSD), and 2) the Los Ranchos San Joaquin County Service Area (CSA) 35. Water for the Mountain House CSD is provided by the Byron Bethany Irrigation District (BBID), which diverts water from the Sacramento-San Joaquin Delta. Water for the Los Ranchos CSA 35 is extracted from local groundwater wells operated by the San Joaquin County Public Works Department (SJCPWD). Water for the project would be provided by the Alameda County Flood Control and Water Conservation Zone 7 Water Agency (Zone 7 Water Agency). During the 2023/2024 fiscal year, Zone 7 Water Agency supply consisted of 80 percent surface water from the State Water Project, 15.5 percent surface water from Del Valle reservoir, and 4.5 percent groundwater from the Livermore Valley basin (Zone 7 Water Agency 2025). Therefore, the project water supply would not have an influence on the drinking water of the subject disadvantaged community census tract.

In addition, as described in **Section 5.16, Water Resources**, prior to any ground-disturbing construction activity, the applicant would prepare a construction Stormwater Pollution Prevention Plan (SWPPP) to comply with the Construction General Permit. With the implementation of the SWPPP, development of the site would not cause substantial degradation in the quality, or an increase in the rate or volume, of stormwater runoff from the site during construction. A project operations Drainage, Erosion, and Sedimentation Control Plan (DESCP) would be prepared to monitor stormwater events and deploy associated best management practices (BMP). No disproportionate impacts to an EJ population would occur.

Groundwater Threats. Common groundwater pollutants found at contaminant release sites in California include gasoline and diesel fuels; chlorinated solvents and other volatile organic compounds; heavy metals such as lead, chromium, and arsenic; polycyclic aromatic hydrocarbons; persistent organic pollutants like polychlorinated biphenyls and pesticides; and perchlorate.

As described in **Section 5.16, Water Resources** and the previous section, groundwater from the Livermore Valley Groundwater Basin would be a small component of the water supplies for the project and would be transported by truck during both construction and operation. Zone 7 Water Agency is the Groundwater Sustainability Agency (GSA) that manages the Livermore Valley Groundwater Basin groundwater resource in compliance with the Sustainable Groundwater Management Act (SGMA). The project would not be expected to overdraft this resource, and impacts would be less than significant with mitigation. No disproportionate impacts to an EJ population would occur.

Impaired Water Bodies. As described in **Section 5.16, Water Resources**, the following five waterways within the Old River watershed are listed as impaired according to Section 303(d) List of the Clean Water Act:

- Delta Waterways (Southern Portion) – Water quality is affected by mercury and pesticides.
- Grant Line Canal (Included in Delta Waterways, Southern Portion) – Water quality is affected by low oxygen and salts.
- Holland Cut (Included in Delta Waterways, Central Portion) - Water quality is affected by acidity.
- Mountain House Creek (Included in Delta Waterways, Southern Portion) – Water quality is affected by salts.
- Tom Paine Slough (Included in Delta Waterways, Southern Portion) - Water quality is affected by low oxygen and salts.

However, these waterways are in the Sacramento-San Joaquin Delta, more than six miles northeast of the project site, which is located within the Coast Range. The area of the project site currently drains into Patterson Run, which flows northeast under Interstate 580, the California Aqueduct, and the Delta-Mendota Canal, then disappears south of Interstate 205 (USGS 2021). Listing of a water body as impaired does not necessarily suggest that the water body cannot support the beneficial uses; rather, the intent is to identify the water body as requiring future development of a Total Maximum Daily Load (TMDL) to maintain water quality and reduce the potential for future water quality degradation.

Prior to any ground-disturbing construction activity, the applicant would prepare a construction SWPPP to comply with the Construction General Permit. With the implementation of the SWPPP, development of the site would not cause substantial degradation in the quality, or an increase in the rate or volume, of stormwater runoff from the site during construction. A project operations DESCP would be prepared to monitor stormwater events and associated BMPs. No disproportionate impacts to an EJ population would occur.

6.4 References

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Section 7

Public Benefits

7 Public Benefits

7.1 Regulatory Setting

Public Resources Code section 24454.8 incorporates Public Resources Code section 25523(h), which states: "The commission shall prepare a written decision after the public hearing on an application, which includes …[a] discussion of any public benefits from the project including, but not limited to, economic benefits, environmental benefits, and electricity reliability benefits." Such identified benefits may be discussed in detail in various sections of staff's environmental assessment such as **Section 5.11, Socioeconomics** and **Section 10, Mandatory Opt-In Requirements**. A qualitative discussion addressing public benefits is appropriate as there is no specific threshold of benefit necessary under this section for project approval. Consistent with this directive, staff describes, in summary form, the key benefits of the project relating to economic, environmental, and reliability benefits of the project.

7.2 Economic, Environmental and Electric Reliability Public Benefits

Economic

As detailed in **Section 5.11, Socioeconomics**, the project's public benefits include economic benefits typical for a large-scale industrial project with an extended construction period. These benefits include construction employment and associated payrolls, sales and use taxes, equipment rentals, and local spending generated by the project and its workforce. Following construction, the project would employ a minimal number of staff and continue to contribute tax revenues to the state and local community.

The project would be in Alameda County, therefore an ad-valorem tax would be levied by the Alameda County Assessor on the assessed valuation of the parcel. Resulting tax revenues would be allocated among county agencies in accordance with standard distribution formulas, including Lammersville Unified School District, Alameda County Fire Department, and the County Library. The project is located within the Lammersville Joint Unified School District and would be required to pay a one-time school facility development fee, which is calculated based on square footage of covered, enclosed space constructed.

Construction and operation of the project would generate state and county sales tax revenue. Sales tax liability would depend on the point of sale and the location from which equipment and materials are purchased. In addition to direct revenues, the project would generate indirect and induced fiscal benefits as summarized in the applicant's Opt-In Application, Confidential Appendix 3.10A.

Environmental

As discussed in **Section 3, Project Description**, the project's renewable generation would contribute to meeting the State of California's renewable energy policy objectives as described by the interim targets in Clean Energy, Jobs, and Affordability Act of 2022

(Senate Bill 1020, Laird, Chapter 361, Statute of 2022) that require renewable energy and zero-carbon resources to supply 90 percent of all retail electricity sales by 2035 and 95 percent of all retail electricity sales by 2040.

The project's battery storage system would also contribute to the state's 100 Percent Clean Energy Act of 2018 (Senate Bill 100, De León, Chapter 312, Statute of 2018) policy objectives with a 2045 goal of California's electricity system to be carbon free by capturing and storing renewable energy when generation is plentiful and dispatching energy for use when it is scarce.

Reliability

Reliability is an evaluation of the robustness of the state's electrical system, the grid, and the project's impact on that system. As discussed in **Section 3, Project Description**, BESS facilities can assist grid operators in more effectively integrating intermittent renewable resources into the statewide grid. The project would include a battery storage system capable of storing up to 400 MW of electricity for eight hours (up to 3,200 megawatt-hours).

As discussed in **Section 4.3, Transmission System Engineering,** the project is designed to enhance grid reliability by absorbing electricity during periods of low demand or high renewable generation and discharging it during peak hours when the system is most stressed. By shifting energy from off-peak to on-peak periods, the project helps reduce congestion on the transmission system, mitigates curtailment of renewable resources, and supports a more balanced and stable supply profile.

Overall, the state would benefit from the project's reliability contributing to the diversity of renewable generation. In addition, the state's electrical grid reliability would increase with the project providing electricity during increased load demand.

Conclusions

Consistent with Public Resources Section 25523(h), this section provides a summary description of the economic, environmental, and reliability benefits of the project. Information regarding community benefits (Pub. Resources Code, § 25545.10) and net positive economic benefit to the local government (Pub. Resources Code, § 25545.9, which applies under the Opt-In program established by Assembly Bill 205 and Senate Bill 254) is discussed in **Section 10, Mandatory Opt-In Requirements**.

Section 8

Alternatives

8 Alternatives

8.1 Introduction

This section evaluates alternatives to the Potentia-Viridi Battery Energy Storage System (Potentia-Viridi BESS or proposed project). CEC staff reviewed the alternatives analysis in the application, using that as a starting point for the alternatives analysis in this staff assessment.

These alternative technologies were initially considered and not evaluated further by CEC staff, mostly due to potential feasibility and reliability issues or an inability to attain the basic project objectives: fuel cells, alternative battery energy storage technologies, and a 100 percent hydrogen-fueled power plant.

Regarding alternative sites, several properties in the project area were evaluated as possible sites for the Potentia-Viridi BESS before being rejected, primarily due to non-viable generation tie (gen-tie) line routes to the Tesla Substation and an inability to negotiate easements or lease agreements with landowners. A reduced capacity version of the project was considered by CEC staff and rejected due to an inability to avoid or substantially lessen any of the project's significant impacts.

No project alternatives were identified that would 1) feasibly attain the key project objectives to develop an energy storage facility with a planned interconnection at the Tesla Substation; and 2) avoid or substantially lessen any of the project's significant impacts. Therefore, other than the No Project Alternative, no alternatives were identified for full analysis and comparison to the project. No comments on potential project alternatives were submitted by the public or interested parties during project scoping.

CEC staff members who contributed to the alternatives analysis are listed at the end of this Alternatives section.

8.2 Summary of Conclusions

CEC staff initially considered a range of potential alternatives to the project. Other than the No Project Alternative, no other potentially feasible alternative is known that could provide a basis for an impact comparison with the proposed project. CEC staff considered what would be the most likely outcome of the No Project Alternative should the Potentia-Viridi BESS fail to move forward. Under the No Project Alternative, it is assumed that the site would be developed for another renewable energy project in the foreseeable future. The relatively confined area that potentially could be developed means that such a project would likely be a BESS development with a similar orientation on the site and with the same or similar gen-tie development area. CEC staff's analysis of the No Project Alternative shows that the impacts of the Potentia-Viridi BESS would be the same or similar to the impacts of another BESS facility on the site. Given the similarities of impacts between the Potentia-Viridi BESS and the No Project Alternative,

staff concludes that no environmentally superior alternative can reasonably be identified.

8.3 CEQA Requirements

As the California Environmental Quality Act (CEQA) lead agency for the project, the California Energy Commission (CEC) is required to consider and discuss alternatives to the project. The CEQA Guidelines provide the regulatory requirements for an alternatives analysis in an environmental impact report (EIR) (Cal. Code Regs., tit. 14, § 15000 et seq.). Section 15126.6 of the CEQA Guidelines provides that the alternatives analysis must:

- describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project;
- evaluate the comparative merits of the alternatives;
- focus on alternatives that would avoid or substantially lessen any significant effects of the project, even if these alternatives would impede to some degree attainment of the project objectives, or would be more costly; and
- describe the rationale for selecting alternatives to be discussed and identify alternatives that were initially considered but then rejected from further evaluation.

CEQA requires that an EIR "consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation" (Cal. Code Regs., tit. 14, § 15126.6, subd. (a)). Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are failure to meet most of the basic project objectives, infeasibility, or inability to avoid significant environmental impacts (Cal. Code Regs., tit. 14, § 15126.6, subd. (c)). The range of potentially feasible alternatives selected for analysis is governed by a "rule of reason," requiring evaluation of only those alternatives "necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project" (Cal. Code Regs., tit. 14, § 15126.6, subd. (f)).

An EIR is not required to consider alternatives that are infeasible (Cal. Code Regs., tit. 14, § 15126.6, subd. (a)). In addressing feasibility of alternatives, factors that may be considered are site suitability; economic viability; availability of infrastructure; general plan consistency; other plans or regulatory limitations; jurisdictional boundaries; and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site (Cal. Code Regs., tit. 14, § 15126.6, subd. (f)(1)). An EIR "need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative" (Cal. Code Regs., tit. 14, § 15126.6, subd. (f)(3)). CEQA defines feasible to mean "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors" (Pub. Resources Code, § 21061.1, and Cal. Code Regs., tit. 14, § 15364).

The lead agency is also required to evaluate the "no project" alternative along with its impact. Analyzing a no project alternative allows decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project (Cal. Code Regs., tit. 14, § 15126.6, subd. (e)(1)). "The 'no project' analysis shall discuss the existing conditions at the time the notice of preparation is published…as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives" (Cal. Code Regs., tit. 14, § 15126.6, subd. (e)(2)).

8.4 Project Objectives and Alternatives Screening

The process of selecting alternatives for analysis begins with establishing project objectives. Section 15124(b) of the CEQA Guidelines addresses the requirement for an EIR to contain a statement of objectives, as follows:

> *A clearly written statement of objectives will help the lead agency develop a reasonable range of alternatives to evaluate in the EIR and will aid the decision makers in preparing findings or a statement of overriding considerations, if necessary. The statement of objectives should include the underlying purpose of the project and may discuss the project benefits.*

The applicant's primary purpose is to assist the State of California in meeting its goal of reducing statewide annual greenhouse gas emissions from the electric sector to 25 million metric tons by 2035 (Levy Alameda 2025a). The Potentia-Viridi BESS would store excess generation from intermittent renewable sources (wind and solar) to deliver back to the grid when electrical demand exceeds generation.

The applicant's project objectives are as follows:

- Construct and operate an economically viable, and commercially financeable, 400-MW battery energy storage facility in Alameda County with an interconnection at the Tesla Substation.
- Assist California electric utilities in meeting obligations under California's Renewables Portfolio Standard (RPS) program and Senate Bills 100 and 1020, which require renewable energy sources and zero-carbon resources to supply 60 percent of all retail sales of electricity to California end-use customers by December 31, 2030, 90 percent of all retail sales of electricity to California end-use customers by December 31, 2035, 95 percent of all retail sales of electricity to California end-use customers by December 31, 2040, and 100 percent of all retail sales of electricity to California end-use customers by December 31, 2045.
- Assist California utilities in meeting obligations under the California Public Utilities Commission (CPUC) Mid-Term Reliability Procurement Requirements.

- Develop an electricity storage facility in proximity to a utility grid-connected substation with existing capacity available for interconnection to minimize environmental impacts.
- Relieve grid congestion, and enhance electricity reliability, without requiring the construction of new regional transmission infrastructure or substantial network upgrades.
- Construct and operate a battery energy storage facility in Alameda County, resulting in economic benefits to the County, creating prevailing wage construction jobs, and facilitating local community benefits.

A key project objective specifies assisting California electric utilities needing to comply with the CPUC mid-term reliability procurement requirements. This is in reference to the CPUC's 2021 reliability decision for 2023–2026 (D.21-06-035), which was designed to achieve greenhouse gas (GHG) reduction targets for 2030 and meet the ultimate goal of 100 percent zero-carbon electricity resources by 2045. D.21-06-035 includes a requirement to procure at least 1,000 megawatts of long-duration storage resources by 2026. The CPUC specifies that long-duration storage must be able to discharge at maximum capacity over at least an 8-hour period from a single resource (CPUC 2021). D.23-02-040 extended the required year for bringing these resources online from 2026 to 2028. (D.24-02-047 allows for an extension to June 1, 2031, provided certain conditions are met.) The applicant proposes that initial mobilization and site preparation for the project would begin by Quarter 4 2026 and testing and commissioning would conclude by Quarter 2 2028 (Levy Alameda 2025a).

8.5 Environmental Impacts of the Project

Throughout this staff assessment, CEC staff evaluates the impacts of implementing the Potentia-Viridi BESS and recommends conditions of certification (COCs) and mitigation measures to reduce potentially significant impacts to less-than-significant levels. For impacts on visual resources, CEC staff evaluated the potential for the project to substantially degrade the existing visual character or quality of public views of the site and its surroundings. CEC staff concluded that this impact remains significant even after implementation of COCs (see **Section 5.15, Visual Resources**, in this staff assessment).

For project issues in sections covering **Solid Waste Management, Transmission Line Safety and Nuisance, Transportation, Facility Design, Facility Reliability, Transmission System Engineering**, and **Worker Safety and Fire Protection**, conformance with applicable laws, ordinances, regulations, and standards (LORS) would provide reasonable assurances that project construction and operation would be done in a manner that protects public health and safety; the recommended COCs primarily require fulfillment of permitting requirements, preparation and implementation of plans and programs, and oversight of regulatory processes to help ensure compliance with LORS.

CEC staff has identified no potentially significant impacts on resources evaluated in sections covering **Efficiency and Energy Resources**; **Land Use, Agriculture, and Forestry**; and **Socioeconomics**; therefore, these topics are not included in the impact summaries below. For the other topics covered in **Section 5, Environmental Impact Assessment**, COCs are recommended for a mix of project-specific resource impacts and to satisfy applicable permitting and regulatory requirements in accordance with CEQA. Later sections in this analysis discuss whether any of the project's significant impacts could be substantially lessened or avoided by a project alternative. Potentially significant impacts associated with the project are summarized as follows:

- **Air Quality** – Project construction air emissions would result from 1) onsite earth movement work, vehicle emissions, equipment exhaust, asphalt pavement application, and gen-tie line and pole construction, and 2) offsite vendor and truck hauling travel and worker vehicle trips. The analysis of project construction emissions on the ambient air pollutant concentrations indicates that the project could expose sensitive receptors to substantial pollutant concentrations of 1-hour nitrogen dioxide (NO_2), annual NO_2, and 24-hour PM2.5 (particulate matter of 2.5 micrometers and smaller in diameter). Air quality COCs (AQ-SCs) and mitigation measures are recommended to ensure that impacts of criteria pollutant emissions, including fugitive dust, would be less than significant during project construction. Implementation of all AQ-SCs and mitigation measures for air quality would reduce potentially significant construction impacts to less than significant. Air quality impacts during project operations would be less than significant.

  Implementation of all COCs and mitigation measures in **Section 5.1, Air Quality**, would reduce potentially significant impacts to less than significant and the project would be in compliance with applicable federal, state, and local LORS.

- **Biological Resources** – The project area is in Conservation Zone (CZ) 10 of the East Alameda County Conservation Strategy (EACCS) planning area. Conservation priorities include protection of upland habitat, movement corridors, and species specific goals. EACCS focal species applicable to this project within CZ 10 include Crotch's bumble bee, California red-legged frog, California tiger salamander, San Joaquin kit fox, American badger, golden eagle, tri-colored blackbird, Western burrowing owl, and big tarplant.

  The project site provides potential habitat for a variety of special-status wildlife species. Direct impacts on special-status wildlife species could occur during construction and indirectly due to permanent or temporary effects on suitable habitat in the project area.

  No state or federally listed plants were detected during botanical surveys on the project site. Surveys confirmed the presence of the special-status plant species, big tarplant, near the Pacific Gas and Electric Company (PG&E) Tesla Substation. Several impact avoidance and minimization measures would be imposed to reduce potential direct and indirect impacts on common and special-status species to less than significant.

No threatened, endangered, candidate, proposed for listing, or other special-status invertebrates were observed in the project area during biological surveys conducted by the applicant, including Crotch's bumble bee and monarch butterfly. Crotch's bumble bee is a candidate for listing under the California Endangered Species Act (CESA). Should Crotch's bumble bee be present, direct and indirect significant impacts on this species could occur. The applicant has requested take authorization for Crotch's bumble bee. CEC staff has incorporated incidental take permit conditions in CEC staff's recommended COCs for potential impacts on Crotch's bumble bee, in accordance with California Department of Fish and Wildlife (CDFW) requirements.

The project site is outside of monarch butterfly overwintering range. However, surveys in 2023 and 2024 confirmed the presence of milkweed, which is a required host plant for larvae. The project site offers potential foraging resources, and the monarch has a moderate potential to be an infrequent migrant and forager due to available nectar resources.

There are two special-status amphibians with a high potential to occur in the project area. The EACCS CZ 10 is a high priority area for protecting habitat for California tiger salamander; two ponds within 0.3 mile northwest of the project site provide high-quality breeding habitat for the species, and grassland in the area provides upland refuge and dispersal habitat. If California tiger salamander were present on the site, direct and indirect impacts on the species could occur. The applicant has requested take authorization for the species and will provide compensatory mitigation according to requirements of the U.S. Fish and Wildlife Service (USFWS) and CDFW. CEC staff has incorporated incidental take permit conditions in the recommended COCs for potential impacts on this species, in accordance with USFWS and CDFW requirements, to reduce potential impacts on this species to less than significant. The EACCS CZ 10 is a high priority area for protecting a substantial portion of potential breeding ponds for California red-legged frog. Although no frogs were observed during field surveys, there is one aquatic feature within 0.3 mile northwest of the project site considered to provide high-quality breeding habitat for the species. The proposed project would cause a permanent loss of 60.7 acres of potential upland and dispersal habitat. The applicant will provide compensatory mitigation according to requirements of the USFWS. CEC staff has incorporated incidental take permit conditions in the recommended COCs for potential impacts on both species, in accordance with CDFW and USFWS requirements.

Foraging birds were detected in the project area during surveys, including tricolored blackbird and California horned lark. These and other special-status species might use the project site during winter migration along with other common wildlife. Suitable nesting habitat for white-tailed kite and Swainson's hawk is limited to the few trees within the Patterson Run Creek riparian corridor; however, due to a recent fire satellite imagery indicates fire damage to these trees. Non-native annual grassland habitat at the project site could provide prey for raptors. Direct and

indirect significant impacts on special-status and common species could occur during construction.

The golden eagle is a special-status species in California and it is a covered focal species under the EACCS. Transmission towers and trees within a mile of the project area could provide nesting habitat for this species. CEC staff and the USFWS have coordinated to set a 1-mile nest protection buffer during the breeding season during all project construction phases.

The burrowing owl is a state candidate for listing under CESA, and it is protected under the federal Migratory Bird Treaty Act and the Fish and Game Code. The EACCS CZ 10 is identified as an important nesting area for burrowing owls. Direct and indirect impacts on this species could occur during project construction. Any action that causes direct impacts on burrowing owl and that result in harm would constitute take under CESA. The applicant has requested take authorization for burrowing owl, which is a protected species under CESA. CEC staff and CDFW have coordinated to develop compensatory mitigation to meet the full mitigation standard required by CESA.

The project site is at the northern extent of the San Joaquin kit fox range. Although no kit fox were observed during daytime surveys, kit foxes might explore and forage in the project area. The U.S. Army Corps of Engineers initiated Section 7 consultation with the USFWS regarding potential impacts on the federally endangered kit fox and other species; the USFWS determined that the project *may affect, but is not likely to adversely affect* the kit fox. Even so, the applicant has requested take authorization for San Joaquin kit fox, which is a protected species under CESA. CEC staff and CDFW have coordinated to develop compensatory mitigation to meet the mitigation standard required by CESA.

American badger has a high potential to occur in the project area, although the species was not detected during the applicant's surveys. Direct and indirect significant impacts on the species could occur during project construction.

A complete aquatic resources jurisdictional delineation was conducted on the project site to identify and map resources that could be subject to state and federal regulation. Activities affecting Patterson Run Creek are regulated under Sections 404 and 401 of the Clean Water Act and by CDFW. Project work and construction features associated with the gen-tie alignment (low water crossing and placement of riprap) would directly impact Patterson Run Creek. The implementation of best management practices and compensatory mitigation are recommended to reduce impacts on jurisdictional waters to less than significant, according to the requirements of applicable state and federal regulations.

Implementation of all COCs for biological resources and all other COCs referenced in **Section 5.2, Biological Resources** would reduce potentially significant impacts to

less than significant and would be in compliance with applicable state and federal regulatory requirements.

- **Climate Change and Greenhouse Gas (GHG) Emissions** – The quantity of construction-related GHG emissions would be limited due to procedures concerning waste minimization and recycling of construction materials along with the use of Tier 4 engines, which would ensure GHG impacts are less than significant. CEC staff recommends a mitigation measure in **Section 5.1, Air Quality** to further reduce GHG emissions during construction of the components outside the CEC's Opt-In certification. The project's BESS enclosures would have a heating, ventilation, and air conditioning system for thermal management, and a refrigerant would be used in the thermal management system. Use of refrigerants with high global warming potential (GWP) would cause a significant impact on the environment. High-GWP refrigerants are subject to state regulations prohibiting the use of certain hydrofluorocarbons in stationary refrigeration and other end uses. A COC is recommended to ensure the project would remain in compliance with state regulations and reduce the potential impact to less than significant. The project's operational emissions from the emergency diesel engines would be minimized through the use of Tier 4 engines fueled by biodiesel required in a COC. Because the project would provide overall beneficial effects of displacing GHG emissions from fossil-fueled power plants used for energy generation, the operational impact would be less than significant. Implementation of all COCs and mitigation measures for GHG in **Section 5.3, Climate Change and Greenhouse Gas Emissions**, would reduce potentially significant impacts to less than significant, and the project would be in compliance with applicable federal, state, and local LORS.
- **Cultural and Tribal Cultural Resources** –There is one built-environment historical resource (500-kilovolt Transmission Lines), and no known archaeological historical resources in the project area. A geoarchaeological assessment of the project site concluded there is low to moderate archaeological sensitivity for buried archaeological resources, although ground visibility during pedestrian surveys was low due to extensive coverage by non-native grasses. Background record searches and document reviews, archaeological surveys, and consultation with local tribes have not identified any tribal cultural resources in the project area. If unknown or buried archaeological resources were inadvertently discovered and damaged during construction, it would be considered a significant impact. No cemeteries or human remains interred outside of cemeteries are known to exist in the project area. However, ground disturbance during project construction could result in the inadvertent discovery of human remains and associated funerary items that would meet CEQA's criteria for historical, unique archaeological, or tribal cultural resources. Damage to human remains would be a significant impact under CEQA. With implementation of several recommended COCs/MMs for historical, cultural and tribal cultural resources, impacts to the built-environment historical resource and any potentially significant impacts on yet undiscovered resources would be reduced to less than significant.

- **Geology, Paleontology, and Minerals** – No known active or potentially active faults intersect the project; however, regional earthquakes could subject the project site to strong seismic ground shaking. Regional geologic mapping shows that part of the project site is underlain by Holocene alluvium, which is considered highly susceptible to liquefaction. The applicant's geotechnical investigation shows a lack of shallow groundwater at the site. However, CEC staff assumes that future fluctuations in groundwater levels could cause liquefiable materials to become saturated, potentially increasing the risk of seismically induced ground failure, including liquefaction and lateral spreading.

  The sloped topography in the western part of the project site is underlain by soils and a geologic formation with moderate to high susceptibilities to landslides or slope creep. The earthwork to prepare the site would cut and fill onsite slopes, and project construction would require placement of natural soils and engineered fill across the site. The potential failure of natural and artificial slopes, especially from soil creep, is a potential geologic hazard at the site. The risk of soil settlement from seismic shaking, including differential soil settlement, is a potential geologic hazard. Also, the geotechnical investigation identified expansive soils (medium to high plasticity clays) at the project site that can cause foundations to crack or become uneven when the soils experience wetting and drying. Implementation of the recommended COCs would reduce potential impacts from geologic hazards on project construction and operation, including the safety of people, property, and grid reliability, to less than significant through use of appropriate design, grading, and construction methods.

  Project construction and operation could increase the potential for water and wind to erode the soil. Implementation of recommended COCs would reduce these potential impacts to less than significant.

  Several of the geologic units underlying the project site have a "high sensitivity" for potential paleontological resources, and invertebrate fossil specimens and shell beds have been recorded in nearby areas with geologic deposits similar to those underlying the project site. COCs are recommended to address the potential for the discovery of paleontological resources during excavation in native materials and to reduce potential impacts to less than significant.

- **Hazards, Hazardous Materials/Waste, and Wildfire** – Project construction, operation, and maintenance would include transport of hazardous substances to the project site that would be used and stored at the project site. Hazardous material use would present a relatively low public health risk but could contaminate subsurface soils or ground water if a release or incident occurred. Hazardous waste would be generated during construction that would be collected by a licensed hazardous waste hauler for transfer to authorized management facilities. COCs are recommended to ensure secure transport, storage, and offsite disposal, treatment, or recycling of hazardous materials. Hazardous waste at the project site would be managed according to state and federal regulatory requirements.

With implementation of COCs recommended in **Section 5.7, Hazards, Hazardous Materials/Waste, and Wildfire**, and **Section 4.4, Worker Safety and Fire Protection**, potential impacts of improper management of hazardous material on the public and the environment would be reduced to less than significant.

The project site is within an area designated by the state as a high fire hazard severity zone. The main fire hazard would be caused by the use of vehicles and equipment, which could ignite dry vegetation and result in a fire. Use of construction equipment that could cause sparks from welding or grading work have a greater potential to result in an ignition. COCs recommended in **Section 4.4, Worker Safety and Fire Protection**, would reduce potential impacts from wildland fires to less than significant, including a COC to ensure access to the site by emergency responders.

Project site preparation and excavation would disturb the ground, and this work could encounter contaminated groundwater or soil; implementation of COCs for hazards and hazardous materials and waste would ensure worker protection from potential toxicant exposure and reduce potentially significant impacts to less than significant.

- **Noise and Vibration** – Use of certain equipment during construction would increase ambient noise levels in the surrounding community. The gen-tie construction phase would occur closest to sensitive receptors (residences) compared to the other project construction. With implementation of several COCs, potentially significant construction-related noise impacts would be reduced to less than significant. During project operations, noise levels would be below the ambient noise levels and the Alameda County Noise Ordinance threshold; however, CEC staff recommends a COC to ensure the project would not distinctly increase the ambient noise level and to ensure the project meets operational noise performance criteria.
- **Public Health** – Project construction emissions would result from the combustion of fuel in vehicles and equipment, fugitive dust emissions from wind erosion, land clearing and materials movement, and travel on paved and unpaved roads. These emissions have the potential to expose sensitive receptors to substantial pollutant concentrations or cause other public health impacts. Construction impacts relating to fugitive dust (particulate matter of 10 micrometers or less in diameter) and exposure to diesel particulate matter would be reduced to less than significant with implementation of COCs in **Section 5.1, Air Quality**. Public health impacts during project operations would be less than significant.
- **Visual Resources** – The project would substantially degrade the existing visual character or quality of public views of the site, and staff concluded that this impact remains significant even after implementation of COCs/MMs. Given the existing physical environment, the prominence of the project structures (design element contrast, scale dominance, spatial dominance) in the existing physical landscape was rated "severe" for key observation point (KOP) 2 and "strong" for KOP 3 and KOP 4. The project's visible elements would command the landscape views for KOP 2 and

KOP 3. For these KOPs, it was concluded that the color, form, texture, scale, and structure heights of equipment that would be constructed on the project site could not be camouflaged, disguised, screened, or exterior surface coated, or colored or finished such that the impact could be reduced to less than significant.

The project would cause a new source of substantial light that could adversely affect nighttime views in the area. With implementation of a COC/MM to manage night lighting of project structures, this potentially significant impact would be reduced to less than significant.

- **Water Resources** – Ground-disturbing construction activity could cause degradation of water quality or an increase in rate or volume of stormwater runoff. There is also a potential for offsite flooding to occur during project construction. Implementation of COCs addressing all project elements of stormwater management during project construction and operation would reduce potentially significant impacts to less than significant.

  Site construction would require excavations from three high points on the project site, and if groundwater was encountered during excavation dewatering would be necessary. If dewatering discharge was determined to be contaminated, a special permit through the Central Valley Regional Water Quality Control Board would be necessary depending on the nature of the contamination. Recommended COCs would ensure compliance with the water quality control plan during project construction and operation.

  The proposed project's water demand is estimated at 49.1 acre-feet for construction (over 1.5 years; 32.7 acre-feet per year [AFY]) and 1 AFY for project operations. Based on data from the Zone 7 Water Agency urban water management plan and the revised water supply assessment for the project, water supplies during normal and drought conditions were concluded to be sufficient to serve the project. (See **Section 5.16, Water Resources**, of this staff assessment for details.)

  With implementation of all recommended COCs, potentially significant impacts on water resources would be reduced to less than significant.

8.6 Alternatives Considered and Not Evaluated Further

CEQA provides that the range of alternatives to the project, or to the location of the project, is to include those that would feasibly attain most of the basic project objectives but would avoid or substantially lessen any of the project's significant effects.

The alternatives initially considered by CEC staff for this analysis were eliminated from detailed consideration due to potential feasibility issues, failure to meet key project objectives, or failure to reduce any of the project's significant environmental impacts, especially the significant and unavoidable impacts on visual resources. CEC staff evaluated the characteristics of other renewable electrical energy generating and BESS

technologies compared to the lithium-ion BESS (lithium iron phosphate chemistry) proposed by the applicant.

The applicant evaluated other potential sites for the project. CEC staff reviewed the alternative sites that were evaluated by the applicant before concluding that those sites would be unlikely to feasibly accommodate construction and operation of the project. CEC staff considered whether a reduced capacity version of the project could substantially lessen significant impacts on biological resources, cultural and tribal cultural resources, paleontological resources, and visual resources before concluding that such a project alternative would make a marginal difference in the overall effects of impacts on those resources.

On September 18, 2025, CEC staff held the Informational and Environmental Scoping Meeting for the Potentia-Viridi BESS. No comments relating to the scope and content of the Alternatives analysis were presented during or after the meeting, and no written comments were submitted to the CEC project docket. (See **Section 2, Introduction**, of this staff assessment for information on public outreach and notification for the Potentia-Viridi BESS.)

The following discussions provide staff's reasons for eliminating these alternatives from further analysis and comparison to the project.

8.6.1 Fuel Cell Technology Alternative

Fuel cells convert chemical energy into electrical energy. There are several types of fuel cells, which vary according to the types of electrochemical reactions that take place in the cells, the types of catalysts required, the operating temperature ranges, the fuel requirements, and other factors affecting the applications suitable for the fuel cells.

Solid Oxide Fuel Cells (SOFCs)

SOFCs are electrochemical devices that convert the chemical energy of a fuel and oxidant directly into electrical energy. They operate at high temperatures, as high as 2,100 degrees Fahrenheit (°F) or 1,149 degrees Celsius (°C). Operating at high temperatures enables these fuel cells to use a variety of fuels to produce hydrogen (H2). According to the U.S. Department of Energy (U.S. DOE), SOFCs most commonly use natural gas as fuel but can also use biogas and gases made from coal as fuel (U.S. DOE 2025a). Carbon monoxide (CO) is a product of the chemical reaction created by the fuel and steam molecules.

SOFCs are resilient and not susceptible to CO poisoning, which affects the voltage output of other types of fuel cells, such as polymer electrolyte membrane (PEM) fuel cells (also called proton exchange membrane fuel cells). SOFCs can reform fuel internally due to their resiliency against CO poisoning and because they operate at extremely high temperatures. This reduces the cost associated with adding an external reformer to the balance of plant. However, SOFCs require long start-up time to reach

operating temperature, generate electricity, and they are typically configured, and more suitable, to serve as a prime base load power.

Potential Feasibility Issues

SOFC applications include serving base load power for data centers, retail, healthcare, and critical manufacturing facilities. A commercial application includes eBay's data center in Utah, which uses thirty 200-kilowatt (kW) SOFCs to provide continuous base load power to the information technology, or IT load (6 megawatts [MW]), 8,760 hours per year, with the electric grid as its backup power supply. Additionally, some data centers (e.g., Apple and Equinix) have supplemented their base load power demand (IT and cooling systems) with SOFCs, but they rely on the electric grid to support other loads while retaining traditional uninterruptible power supply (UPS) and generators for emergency power (Data Center Knowledge 2013).

As mentioned, SOFCs have slow startup times, because it takes time to reach critical operating temperatures—start-up times can take up to 60 minutes (GenCell 2018). The California Independent System Operator (California ISO) real-time market (RTM) can issue dispatch instructions with as little as 5–15 minutes' notice. (The California ISO Real-Time Market Activities provides guidelines for running the RTM process and for procuring ancillary services in the RTM.) Start-up times should be quick enough so that a project can be dispatched with little notice. (Subsection 8.4, above, states the project's primary purpose.) The Potentia-Viridi BESS would be designed to discharge 3,200 megawatt-hours (MWh) of stored electrical energy back to the transmission grid when the energy is needed.

SOFCs could use the underground natural gas pipeline system for fuel. At least one pipeline connection would be needed to supply the project with natural gas, and the project site has a nearby gas distribution line available for connection. For SOFCs to meet the project objective of assisting with the state's regulatory requirements for supplying electricity with renewable energy sources, it would need to be fueled by H2. The H2 pipeline infrastructure is currently limited (approximately 1,600 miles of H2 pipelines in the U.S.), and no pipeline exists near the project site; therefore, H2 would need to be stored onsite, or generated and stored onsite. See the subsections, "Onsite Fuel Storage" and "Onsite Generation," below, for further discussion.

PEM Fuel Cells

PEM fuel cells are typically used for low-power applications that require intermittent power, such as mobile services or small stationary applications, like backup generators for communication towers. Their power capacity range between 10 and 125 kW. PEM fuel cell capacity has increased to up to 1 MW delivered in the size of a 40-foot International Organization for Standardization (ISO) container (Plug Power 2024).[1] The width of each container is 8 feet, making the total area occupied by each container 320

1 An ISO container is a container which has been built in accordance with the International Organization for Standardization regulations.

square feet (sq. ft.). For a 400-MW generation system, which is approximately the capacity of the project, the footprint required would be approximately 128,000 square feet (sq. ft.) (approximately 3 acres). Should onsite fuel storage be needed, which would be likely, the footprint would increase.

PEM fuel cells operate at low temperatures and require fuels that are carbon-free and rich in H2 content, preferably pure H2, for maximum voltage output and quick start-up times. H2 can be stored onsite via pressure vessels, piped to the site, or made onsite from a methane source, such as natural gas or from water through electrolysis. These options are discussed in more detail below. Unlike SOFCs, CO poisoning is an important issue for PEM fuel cells because they cannot tolerate large amounts of CO (Fuel Cell Store 2019).

Potential Feasibility Issues

Potential feasibility issues associated with using PEM fuel cells for utility-scale generation include the supply of H2 fuel. The H2 pipeline infrastructure is nonexistent; therefore, H2 would need to be stored onsite, or generated and stored onsite, as described below.

Onsite Fuel Storage. Both a 1-MW PEM fuel cell and a 1-MW SOFC consume 66–69 kilograms (kg) of H2 fuel per MWh (Plug Power 2023). The project would need fuel to power generation for up to 8 hours. The amount of H2 needed per 1-MW fuel cell for 8 hours of operation would be approximately 540 kg.[2] Thus, the project would need approximately 216,000 kg of H2 for 400 MW of fuel cells to operate for 8 hours (not including redundant fuel cells).

The simplest way to store large volumes of H2 would be to compress it. H2 can be compressed to less than 0.42 percent of its gas volume at atmospheric pressure. The gauge pressure of H2 stored as a high-pressure gas is approximately 3,600 pounds per square inch (psi) (U.S. DOE 2001). Compressed H2 could be transported and stored onsite on a Type IV trailer, which is approximately 53 feet long, 8½ feet wide, and 13 feet tall, and would support eight, 25-foot-long H2 cylinders with a total capacity of approximately 1,100 kg (Gardner Cryogenics 2022). The project would need approximately 197 trailers and 89,000 sq. ft. (approximately 2 acres) of space onsite to store fuel for 400 MW of fuel cells for up to 8 hours of operation.

Alternatively, the project could construct a storage system that includes one large or several small pressure vessels to store such a large amount of compressed H2. The project site would need storage for approximately 381,000 cubic feet,[3] or about 8.7 acre-feet (AF) of compressed H2 for 400 MW of fuel cells (not including redundant fuel cells).

2 Hydrogen fuel calculation: 67.5 kg per hour x 8 hours = 540 kg of hydrogen per 1-MW fuel cell.
3 Compressed hydrogen fuel conversion calculation: 67.5 kg per hour x 8 hours x 1/240 compression ratio x 423.3 cubic feet per kg x 400 MW = 381,000 cubic feet for 400-MW fuel cell.

H2 can also be stored in liquid form, known as liquid hydrogen gas (LHG), to reduce its volume and thus its storage footprint. LHG storage requires a smaller footprint than compressed H2 gas for the same H2 fuel capacity. LHG could be transported and stored on the same trailer type as compressed H2. However, LHG would have a larger volume of H2 capacity, approximately 4,400 kg, stored in a single H2 cylinder (Gardner Cryogenics 2022). To store the fuel needed for 400 MW of fuel cell capacity for 8 hours of operation, the project would need approximately 50 trailers for LHG storage, which would require 23,000 sq. ft. (approximately 0.5 acre) of space onsite.

Alternatively, as mentioned above, the project could include construction of a storage system with one to several pressure vessels to store large amounts of LHG. The project would need approximately 107,800 cubic feet[4] (approximately 2.5 AF) of LHG for 400 MW of fuel cells (as compared to 381,000 cubic feet [approximately 8.7 AF] for compressed H2 gas).

Although LHG has the benefit of requiring a smaller footprint than compressed H2, problems exist with storing the liquid. LHG would need to be stored and distributed in specialized equipment, including insulated storage tanks, to keep the fuel in liquid state at atmospheric pressure, which requires a temperature of minus 423 °F. For LHG to remain at a constant temperature and pressure, it must allow for natural evaporation known as boil-off gas (BOG). BOG is a loss of stored fuel that occurs when the ambient temperature heats the insulated tanks. LHG must release this gas to maintain its liquid state. The release in gas occurs at a rate of approximately 1 percent per day (Army Logistician 2000).

Other constraints exist for both compressed and liquified H2 storage systems. Safely managing these systems would require special expertise and equipment, which would add to the cost and complexity of the project. Fuel storage equipment must comply with the standards specified by the National Fire Protection Association along with the local codes to protect against hazardous material release, fire, and explosions during natural disasters and accidents. Additionally, permits for the storage of hazardous materials would be needed pursuant to the local codes. The presence of such storage systems would also likely raise concerns of public safety (for example, due to the flammability of H2) and introduce new compliance and potential safety impacts that would not occur under the project.

Onsite Generation. Alternatively, H2 for both PEM fuel cells and SOFCs can be supplied using other methods, such as electrolysis. Electrolysis is a promising option for carbon-free H2 production, using electricity to cause the chemical reaction of splitting water into H2 and oxygen (O_2). The reaction takes place in a unit called an electrolyzer. Like fuel cells, electrolyzers consist of an anode and a cathode separated by an electrolyte. There are different types of electrolyzers mainly due to the different

4 Liquid hydrogen fuel conversion calculation: 67.5 kg per hour x 8 hours x 1/848 compression ratio x 423.3 cubic feet per kg x 400 MW = 107,800 cubic feet for 400-MW fuel cell.

electrolyte materials, such as PEM, alkaline, and solid oxide, but their function is essentially the same—generating H2 (U.S. DOE 2025b).

A 1-MW PEM electrolyzer, with an approximate size of a 40-foot ISO container, can generate 18 kg of H2 per hour. For a 400-MW system, the footprint required for the system would be 128,000 sq. ft. (approximately 3 acres). For every 1 kg of H2 produced, the electrolyzer would need 10 kg of water and 49.9 kilowatt-hour (kWh) of energy (Plug Power 2022). H2 would need to be produced and stored onsite for future use during power generation. As discussed under "Onsite Fuel Storage," above, onsite storage of H2 has feasibility issues, including storage space, BOG, the need for specialized equipment, and concerns about public safety.

Reliability Issues for Fuel Cell Technology – Summary of Conclusions

Fuel cells for large-scale peak power demand are not fully proven and have various feasibility constraints, including storage space, BOG, the need for specialized equipment, concerns about public safety, and undetermined reliability. Securing fuel for the cells and storing it is a challenge requiring specialized expertise and increased costs for installing and maintaining systems. Because of the limitations described above, fuel cell technology is currently not a feasible alternative to the project's proposed technology.

8.6.2 Alternative Battery Energy Storage Technologies

Storage systems that can provide electricity for at least 8 hours are considered long-duration energy storage (LDES) systems.[5] The project objectives for the Potentia-Viridi BESS specify construction of a 400-MW facility. It would have an energy storage capacity of up to 3,200 MWh, making it an LDES system capable of discharging for approximately 8 hours. The applicant proposes using lithium iron phosphate (LFP) or a similar battery chemistry. Energy storage technologies are categorized based on the type of energy they store, which is ultimately converted to electrical energy, such as electrochemical storage, mechanical storage, or thermal storage. CEC staff has considered non-lithium-ion electrochemical (battery) LDES technologies as alternatives to the proposed project. Among this type of LDES technology, staff considered aqueous redox flow batteries (RFBs) and metal-air flow batteries. CEC staff also considered sodium-sulfur, lead-acid, and sodium-ion batteries. Staff reviewed other types of lithium-ion battery chemistries as potential alternatives to LFP, including nickel manganese cobalt oxide (NMC) and lithium titanate (LTO).

Aqueous Redox Flow Batteries (RFBs)

Aqueous redox flow batteries (RFBs) convert chemical energy into electrical energy by pumping an aqueous electrolyte solution between two storage tanks (positively and negatively charged) with one or more battery cell stacks in between. The battery cells

5 In its Decision Requiring Procurement to Address Mid-term Reliability for 2023–2026 and subsequent decisions (D. 21-06-035), the CPUC specifies that long-duration storage means a resource that can deliver at maximum capacity for at least 8 hours.

consist of electrodes (anode and cathode) and are divided by an ion-exchange membrane which permit ions to pass during reduction and oxidation chemical reactions (redox reactions). Also, the battery cells are connected to an external electrical circuit which allows for charging and discharging. The design of RFBs allows for the separation of power generation at the battery cell stacks and energy capacity at the electrolyte storage tanks (Adeniran et al. 2022).

Various RFB technologies have been developed with different chemistries, which include vanadium, iron, and zinc. RFB technology can discharge almost 100 percent of its stored energy without impacting system performance or damaging the battery. Because the active electrolytic material is separated from the reactive electrodes in the battery, RFBs have a higher level of safety relative to other electrochemical energy storage technologies. The separation also means that the energy and power capacity of RFBs are independently scalable and modular. The flexibility in design means that RFBs can be configured for specific needs and applications (NREL 2021). CEC staff considered the vanadium RFBs and iron RFBs since these technologies have demonstrated the ability to provide electricity for 8 or more hours.

Vanadium Redox Flow Batteries

The vanadium RFB technology takes advantage of the properties of vanadium as vanadium may exist in four different oxidation states in solution. As a result, vanadium electrolyte is used in both tanks of the RFB. Vanadium RFB technology offers several advantages, including no permanent contamination from the diffusion of vanadium ions across the membrane, simple regeneration of ion crossover through normal battery operation, and lower levels of gas evolution during rapid charge cycles compared to other flow batteries. Additionally, there is potential for electrolyte recycling between applications. However, there are some disadvantages, such as the need for thermal regulation systems to maintain temperatures between 10°C and 40°C to prevent thermal precipitation of vanadium species (Lourenssen et al. 2019).

Potential Feasibility Issues

Vanadium RFB applications include provision of peak power and end-of-line voltage support, deferral of conventional transmission and distribution upgrades, and load leveling at substations. More recently, vanadium RFBs have been used as battery storage coupled with renewable power generation. A microgrid application planned by Indian Energy (a Native American-owned microgrid developer) in San Diego County includes a total of 70 MWh of vanadium flow and zinc hybrid cathode battery technologies capable of discharging over a 10-hour duration (CEC 2025). The microgrid system was expected to be fully operational in 2025. Although vanadium RFBs have demonstrated the capability of providing LDES of 8 or more hours, there have not yet been proven demonstrations at the scale of the proposed project. It could take several years for this technology to be proven as a reliable, safe, and operationally dependable option for a utility-scale energy storage project.

Iron Redox Flow Batteries

The iron RFB technology that utilizes an all-iron construction contains iron in different valance states for both electrodes and aqueous ferrous chloride solutions for the two tanks of electrolyte.

Iron RFBs are cost-effective due to the affordability of iron salts, which are abundant and cheaper than vanadium used in other flow batteries. Graphite electrodes and less expensive electrolytes contribute further to reduced costs. Overall, the design and materials make all-iron redox flow batteries an economical alternative to vanadium-based systems (Dinesh et al. 2018). ESS Tech, Inc. offers its Energy Center™ flexible and modular system for utility-scale applications using iron flow batteries with up to 8 hours of continuous discharge (ESS 2025a). The first commercial deliveries of demonstration Energy Center™ products occurred at the end of 2024 (ESS 2025b).

Potential Feasibility Issues

Similar to vanadium RFBs, the iron RFB technology has not yet been proven at the scale of the proposed project. In July 2024, the Sacramento Municipal Utility District (SMUD) announced its partnership with ESS Tech, Inc. to implement an iron RFB demonstration project in Sacramento that will provide 3.6 MW over an 8-hour duration. Successful completion of the project will enable SMUD to scale the deployment of iron flow LDES up to 200 MW (SMUD 2024). The demonstration project is in its early phases at SMUD's Sacramento Power Academy. It will take some years for this large-scale facility to prove its operational reliability. Commercially available iron RFBs are designed for standard containerized constructions and would likely require a larger footprint for the LDES system than the vanadium RFBs.

Metal-air Flow Batteries

Metal-air flow batteries (MABs) transform chemical energy into electrical energy through redox reactions, forming solid metal oxides that can be recycled. MABs use oxygen from the surrounding air as a cathode source and include an electrolyte which can be either aqueous or non-aqueous depending on the anode material. Additionally, their anodes can be made from affordable materials such as iron. The iron-air MAB utilizes an aqueous electrolyte solution.

In MABs, metal at the anode converts into ions, while oxygen at the cathode forms hydroxide ions. Oxygen diffuses through a gas diffusion layer, interacting differently with aqueous and non-aqueous electrolytes. During discharge, electrons are released as metal ions dissolve into the electrolyte; these processes are reversed during charging. However, non-ideal conditions may lead to the precipitation of solid discharge products, consuming active electrolytes and reducing energy density (Olabi et al. 2021).

Potential Feasibility Issues

MAB applications include a Form Energy, Inc. demonstration iron-air LDES system being installed next to the PG&E substation in Redwood Valley in Mendocino County. It is

designed to produce 1.5 MWs for up to 100 hours (150 MWh). Form Energy received a grant from the CEC in 2023 to build a 5-MW battery system at the site; the smaller system was chosen for installation based on the charging capacity of the substation. This system is expected to be operational in 2026 (The Press Democrat 2025, CEC 2025). There have not yet been proven demonstrations of this type of system at the scale of the proposed project. Additionally, MABs have lower round-trip efficiencies between charging and discharging compared to other electrochemical storage options. The MAB technology would require battery replacement, which would not support the proposed project's objective of a technology with a long-term commercial lifespan of at least 30 years.

While non-lithium BESS technologies are progressing, scalability, cost, and storage duration remain key barriers. As a result, while non-lithium solutions are advancing, they are not yet a feasible alternative to the proposed project. Continued innovation, cost reductions, and technological breakthroughs will determine their future viability for large-scale deployment.

Sodium-sulfur Batteries

Sodium-sulfur batteries are a type of high-temperature battery that relies on a reversible redox reaction between molten sodium and sulfur to charge and discharge electricity. Sodium-sulfur batteries have high energy densities, which can make them advantageous for areas with space constraints. Sodium-sulfur batteries are in the initial commercialization phase, marked by high energy density, low levels of self-discharge (which correspond to higher efficiencies), and relatively long cycle life. These storage systems rely on common, abundant, and cheap materials, which may help drive down costs relative to storage systems reliant on scarce minerals (NREL 2021). In addition, sodium-sulfur batteries have high reliability and can be easily installed, relocated, and maintained.

Potential Feasibility Issues

These batteries operate at high temperatures, which presents certain safety issues that could limit applications. Several notable safety failures of deployed sodium-sulfur systems, which caused fires, combined with declining lithium-ion costs, have led to declining deployments (NREL 2021). However, sodium-sulfur battery technology was rejected from further analysis primarily because it is not a proven technology at the scale of the Potentia-Viridi BESS.

Lead-acid Batteries

Lead-acid battery storage is a mature, widely commercialized technology driven by its applications in transportation. Lead-acid battery storage serves both stationary and automotive applications and is widely used in microgrid systems. The basic components of a typical rechargeable lead-acid battery system include a lead dioxide (PbO2) positive electrode, a spongy lead (Pb) negative electrode, an electrolyte solution made of higher concentration of aqueous sulfuric acid solution (H2SO4[aq]) and water. There are

several subtypes of lead-acid batteries, each with unique advantages and challenges, including: vented lead-acid, valve-regulated lead-acid, absorbent glass mat, and hybrid systems (NREL 2021). Lead-acid batteries have low upfront costs relative to newer battery technologies, including lithium-ion.

Potential Feasibility Issues

Several characteristics, such as their short cycle life and inability to remain uncharged for long periods or to be deeply discharged without permanent damage, have limited their use in utility-scale power system applications. Lead-acid batteries are likely better suited in off-grid applications such as in isolated microgrids, particularly where upfront costs can be a barrier. Lead-acid battery technology was rejected from further analysis because it is not suitable for large, utility-scale power systems (NREL 2021).

Sodium-ion Batteries

Sodium-ion batteries (SIBs) are a battery type that functions similarly to lithium-ion batteries wherein sodium ions leave the cathode to carry electric charge through the internal liquid electrolyte to the anode and are stored there as electrical energy to be discharged (U.S. DOE 2023). SIBs have some advantages, including the abundance of its primary resource, sodium, as well as a relatively wide set of safe operational temperature ranges (IMI 2025). SIBs have a significantly lower risk of catastrophic thermal runaway due to lower intrinsic reactivity and a lower heat of reaction compared to most lithium-ion cells, which leads to a decreased risk of propagation in the event of failure.

Potential Feasibility Issues

SIBs are not a mature technology and there are no SIB grid-scale projects. There were two promising companies working on SIB technology deployment that ceased operations in 2025 due to high costs and supply chain inadequacies (Natron Energy and Bedrock Materials). Most grid-scale projects have been implemented in China, where performance data is not readily available. SIBs can also have sensitivity to moisture which leads to a faster degradation rate in addition to generally having a lower cycle life compared to most lithium-ion batteries. This chemistry also typically has a much lower energy density, making it less space efficient compared to other alternatives such as some lithium-ion battery types.

Nickel Manganese Cobalt Oxide Batteries

Nickel Manganese Cobalt Oxide (NMC) batteries are a lithium-ion sub-chemistry that functions similarly to most other lithium-ion batteries; lithium ions leave the cathode during charge and travel through the internal liquid electrolyte to the anode and are stored there as electrical energy to be discharged. NMC batteries offer a few advantages, including high energy density (Evro et al. 2024). The higher energy density also allows for a smaller physical footprint compared to more traditional lithium-ion battery chemistries. NMC has been used in projects of multiple sizes in the U.S., meaning there is proven use of the technology (Mitsubishi Electric 2023).

Potential Feasibility Issues

NMC batteries require stricter safety measures as they have some disadvantages that can lead to decreased stability and a higher risk of thermal runaway, including a smaller safe temperature window and high release of heat and gas during failure. There have been multiple examples of runaway events including an explosion in the 2-MW APS McMicken BESS in Arizona and a major fire in the 750-MW Vistra Moss Landing BESS facility in California. In addition, NMC batteries have a lower cycle life than other chemistries and wear out quickly.

Lithium Titanate Batteries

Lithium titanate (LTO) batteries are another lithium-ion sub-chemistry used in BESS technology that function similarly to its other sub-chemistries (Global Batteries 2025). The advantages of LTO batteries include a high-cycle life span due to an inherent resistance to lithium plating at the anode, as well as a low degradation rate even at partial charge (Tycorun 2025). This chemistry also has a very low risk of thermal runaway in comparison to other lithium-ion battery types as it has a wide range of safe operable temperatures and has a very low risk of lithium plating (Nichicon 2025).

Potential Feasibility Issues

Some of the disadvantages of LTO batteries include a relatively low energy density, causing the system to require a larger footprint to match the output of other systems. Also, current BESS implementations of LTO batteries are mostly at low MW capacity and more focused on short duration energy supply rather than serving the grid for long durations.

8.6.3 100 Percent Hydrogen-fueled Power Plant

The 100 percent hydrogen-fueled power plant technology uses combustion turbines and heat exchangers to burn up to 100 percent hydrogen (H2) as a fuel source to generate power. H2 is abundant but not a readily available resource and would need to either be produced onsite in a separate facility or provided from an offsite source. In addition, 100 percent H2-capable turbines require specialized equipment that is only recently becoming commercially available and is not yet a proven technology for large-scale applications.

100 percent H2-fueled power plants use combustion turbines to burn pure H2 to cleanly generate electricity. Burning pure H2 only produces electricity, heat, and water vapor as byproducts as this is a carbon-free fuel. In addition, though not renewable, H2 is plentiful in the environment and effectively limitless, with its primary source being the atoms in water.

Simple cycle natural gas-fueled turbines demonstrate higher energy conversion efficiencies of around 40–42 percent. For combined cycle natural gas-fueled turbine units, the efficiency is around 54–56 percent. In comparison, combined cycle H2-fueled combustion turbines are expected to reach roughly 60 percent efficiency. However,

similarly, with higher combustion temperatures, some combined cycle natural gas combustion turbines equipped with advanced turbine blade materials can also reach an efficiency of 59–60 percent. Assuming a favorable 60 percent efficiency rate and using the lower heating value of H2 of 33,330 kWh/metric ton, a 100 percent hydrogen-fueled power plant would require 160 metric tons of H2 per day to meet the same 3,200-MWh expected energy storage capacity as the proposed project.[6]

H2 has a very high flame temperature (2,045 °C in air) as well as a much higher flame speed (approximately 3 meters/second [m/s]) compared to natural gas (1,960 °C and approximately 0.3 m/s, respectively). These factors greatly increase the risk of flashback in a combustion turbine due to the risk of the flame propagating backward into other zones inside the turbine. Blowback is also possible as the high flame speed can cause the fluid to move at high velocity during combustion and possibly push the reacting H2 out of the combustor or extinguish the flame outright. Due to these risks, turbines designed to burn 100 percent H2 are required to safely use this fuel as measures must be included to mitigate flashback and blowback. Standard natural gas turbines cannot be used for this project without retrofitting to minimize the risks.

According to combustion turbine manufacturers, certain new models can be constructed that will soon have pre-planned upgrades available to install, reportedly allowing them to align to turbine compatibility with up to 100 percent H2 combustion (U.S. EPA 2023). In addition, the world's three largest turbine manufacturers have made commitments to develop advanced technologies by 2030 or sooner that will enable additional models of new heavy-duty combustion turbines to fire 100 percent H2. For certain existing larger models, manufacturers are developing retrofits that will allow those units to safely increase their levels of H2 co-firing up to 100 percent.

Pure H2 burning also provides pathways for nitrous oxide (NOx) emissions to form as a byproduct of the fuel burning process. Although pure H2 creates no chemical byproducts, the high temperature that is required to burn H2 causes reactions with air that can oxidize free nitrogen in the air and form NOx emissions. The primary way to mitigate this issue is to mix in air to bring the reaction temperature down to a value where these reactions are less likely to occur, but that is not currently an option when using 100 percent H2.

Potential Feasibility Issues

Pure H2, while abundant, is not a readily available resource. To use 100 percent H2, it must be produced either on or offsite for use in a facility, as described above for the fuel cell technology alternative. Furthermore, carbon-free H2 production methods are not widely implemented, and the resulting emissions can be significant. More than 95 percent of H2 production in the United States is through the steam-methane reforming process which requires natural gas and yields carbon-based byproducts (U.S. EPA 2023). The reliance on carbon-producing H2 production methods would not be

6 Calculated as: (3,200-MWh) / (60 percent) / (33.33-MWh/metric ton) = 160 metric tons of H2.

compatible with the project purpose and basic objectives to reduce statewide greenhouse gas emissions (see subsection "8.4 Project Objectives and Alternatives Screening," above).

The proposed project's 400-MW BESS facility would occupy approximately 60 acres. The 100 percent hydrogen-fueled power plant alternative would require infrastructure comparable to those found in combined cycle natural gas-fueled power plants, such as a water treatment plant, combustion turbines and heat exchangers. A project proposed by the Los Angeles Department of Water and Power (LADWP) plans to retrofit the existing approximately 50-acre LADWP Scattergood Generating Station with a 346-MW gross capacity 30-percent H2-fueled, rapid-response, combined-cycle generation system (CCGS), with the goal to burn 100 percent H2 by 2035. However, the acreage of the LADWP CCGS project does not account for the necessary production, transportation, and storage infrastructure for "green" H2 (carbon-free H2) (LADWP 2025). The Potentia-Viridi BESS would be on an undeveloped site with no existing H2 pipeline nearby.

In addition, onsite production of green H2 would not be suitable either since it would require significantly more acreage compared to the project's proposed total acreage. For example, in 2025, the CEC certified the Darden Clean Energy Project which proposed, but ultimately eliminated, a green H2 facility. The Darden Clean Energy Project's green H2 facility was proposed on up to 225 acres, capable of producing up to 140 metric tons gaseous H2 per day from 1,000 acre-feet per year of water, and consisting of an electrolyzer, water treatment plant, and ancillary equipment. The Potentia-Viridi BESS' total available acreage is only approximately 70 acres. There would be significant additional costs associated with building the infrastructure needed for the 100-percent hydrogen fueled power plant, both for offsite transportation via a hydrogen pipeline or an onsite green H2 facility. Therefore, the alternative would likely be economically infeasible.

Part of the project purpose is to use a BESS to store excess generation from renewable sources, such as wind and solar, when the electrical energy from those sources exceeds demand. The 100 percent hydrogen-fueled power plant alternative would need to be coupled with hydrogen production via electrolysis to use excess renewable generation. The processes involved with H2 production via electrolysis would introduce additional inefficiencies compared to directly storing and discharging excess generation with a BESS. For example, a typical PEM electrolyzer has an electrical efficiency of up to 60 percent (U.S. EPA 2023). A BESS would be a more efficient use of excess generation with its approximately 85 percent round-trip efficiency. Because of the limitations described above, the 100 percent hydrogen-fueled power plant technology is not a feasible alternative to the project's proposed technology.

8.6.4 Alternative Sites

The applicant considered sites on several parcels that were rejected from further analysis due to non-viable gen-tie line routes to the Tesla Substation, inability to obtain

site control from the landowners, and construction challenges posed by variable and steep terrain (Levy Alameda 2024a). Undeveloped properties around the Tesla Substation, some with a history of agricultural use, are attracting proposals for renewable energy projects (Levy Alameda 2024b). The availability of potential sites in this area is constrained by a push for similar projects. **Table 8-1** summarizes the applicant's reasons for rejecting alternative sites from further analysis.

TABLE 8-1 ALTERNATIVE SITES CONSIDERED BUT REJECTED BY THE APPLICANT

Site Number	County	Assessor's Parcel Numbers	Approximate Distance to Tesla Substation	Reasons Rejected
1	San Joaquin	251-320-01 251-320-002	2 miles	No viable gen-tie line route (blocked by competitors through control of intervening properties).
2	Alameda	99A-1780-1-5 99B-6500-2-1 99B-6425-2-4 99B-6300-3-3 99B-6300-3-1 99B-6300-3-2	5 miles	No viable gen-tie line route (blocked by competitors through control of intervening properties and inability to negotiate easements or consent agreements). Also, site terrain would pose construction challenges.
3	San Joaquin	209-100-35	1.75 miles	No viable gen-tie line route (blocked by competitors through control of intervening properties).

Source: Levy Alameda 2024a

The applicant has leased an approximately 70-acre area for the project from a private landowner. The selected site has sufficient acreage to support development of the project, nearby access to existing electrical infrastructure and a planned interconnection at the Tesla Substation, and existing roadways to facilitate project construction and access for operations and maintenance (Levy Alameda 2024b). CEC staff knows of no other potentially feasible alternative site; therefore, no alternative site was selected for full analysis and comparison to the Potentia-Viridi BESS.

8.6.5 Reduced Capacity Alternative

CEC staff considered whether a Reduced Capacity Alternative at the project site could avoid or substantially lessen any of the project's significant impacts, including impacts on biological resources, cultural and tribal cultural resources, geologic and paleontologic resources, and visual resources. The applicant proposes the Potentia-Viridi BESS as a 400-MW facility with an energy storage capacity of up to 3,200 megawatt-hours (Levy Alameda 2025a). Project implementation would permanently disturb 58.8 acres of the total approximately 70-acre lease area. (An additional 1.9 acres would be permanently disturbed for installation of the transmission and interconnection facilities.)

CEC staff requested information from the applicant on a description and conceptual site plan for a smaller facility and an analysis of impacts on biological resources compared to the proposed project. The applicant responded with a site plan concept and analysis of an alternative with a reduced energy storage capacity of up to 1,600 megawatt-hours (4 hours of storage) (Levy Alameda 2025b). Under this alternative, the permanent disturbance area for the BESS facility would be 55.8 acres (a 3-acre reduction).

Revisions to the original project design and site plan to meet requirements of participating agencies expanded the overall project footprint. The revisions would also apply to the Reduced Capacity Alternative, and they are as follows:

- Addition of two water tanks to meet requirements of the California Department of Forestry and Fire Protection.
- Additional stormwater facilities following site grading refinements.
- Additional access roads along the south side of the project site to increase site safety, and additional space between the double access roads for security fencing.
- Addition of two operations and maintenance buildings (for a total of three) to satisfy potential BESS manufacturer requirements.
- Expanded substation area based on actual design parameters.
- Additional laydown areas for safe maintenance of BESS units.

The applicant's site plan concept for this alternative shows a reduced project area in the southwest portion of the site. The approximately 3-acre area that would be removed from the site is part of an "upland vegetation community habitat (wild oats and annual brome grassland)" (Levy Alameda 2025b). The impact on the ephemeral drainage (Patterson Run) in the gen-tie evaluation area would be the same under this alternative compared to the proposed project.

CEC staff independently compared biological resource impacts of the proposed project and the Reduced Capacity Alternative based on the applicant's revised site plan. While there would be approximately 3 acres less of permanent direct impacts on potential special-status species habitat, indirect impacts could still occur within this area. Compensatory mitigation, as described in CEC staff's recommended COCs, would still be required although the acreage amount would be 3 acres less. This small decrease in acreage would not substantially lessen the potential for impacts on biological resources. The biological resources COCs recommended by CEC staff for the proposed project would also apply to the Reduced Capacity Alternative, and impacts would be reduced to less than significant.

CEC staff also considered whether this alternative might substantially lessen potential impacts on cultural and tribal cultural resources. Staff's research and analysis indicates there is one built-environment historical resource that would not be affected and no known archaeological historical resources in the project area. The site is considered to

have a "low to moderate" sensitivity for buried archaeological resources. Under this alternative, the site footprint would be reduced by approximately 3 acres. Compared to the proposed project, this small decrease in acreage would not substantially lessen the potential for undiscovered buried archaeological resources or human remains to be damaged during construction. The same COCs recommended by cultural resources CEC staff would also apply to this alternative, and potential impacts would be reduced to less than significant.

CEC staff determined that the potential risks from geologic hazards on people and property might be marginally lessened under the Reduced Capacity Alternative. Although several of the geologic units underlying the project site have a "high sensitivity" for potential paleontological resources, the small reduction in acreage under this alternative would make no appreciable difference in the potential for project construction to discover or damage paleontological resources during excavation in native materials. CEC staff concluded that the same COCs recommended for the proposed project relating to geologic and paleontologic resources would also apply to this alternative, and impacts would be reduced to less than significant.

For visual resources, staff concluded that the proposed project would substantially degrade the existing visual character or quality of public views of the site for KOP 2, KOP 3, and KOP 4. The impact on visual resources for the three KOPs remains significant even after implementation of the recommended COCs/MMs. The southwestern portion of the project site is within approximately 470 feet of KOP 2 looking north from eastbound Patterson Pass Road. Reducing the project footprint by approximately 3 acres would not change the locations and massing of BESS enclosures to any noticeable degree, as shown in the applicant's conceptual site plan for a reduced capacity alternative (Levy Alameda 2025b). Impacts on visual resources would not be substantially lessened under the Reduced Capacity Alternative.

CEC staff also notes that the Potentia-Viridi BESS would permanently disturb close to 59 acres of the 70-acre lease area, and the site plan shows a 100-foot setback to the BESS enclosures (Levy Alameda 2025a). Given the full use of the project area, there is no other potentially feasible site plan modification that could mitigate the impact of degrading the existing visual character or quality of views of the site and its surroundings from KOP 2, KOP 3, and KOP 4.

The Reduced Capacity Alternative would likely meet most of the project objectives. However, for all topics covered in this staff assessment, a Reduced Capacity Alternative at the project site would not change conclusions for any of the significant impacts (see subsection "8.5 Environmental Impacts of the Project," above). A Reduced Capacity Alternative was not fully analyzed and compared to the Potentia-Viridi BESS because none of the project's significant impacts would be substantially lessened by such an alternative.

8.7 Alternatives Selected for Analysis and Comparison to the Project

No project alternatives were identified that would 1) feasibly attain the key project objectives to develop an energy storage facility with a planned interconnection at the Tesla Substation; and 2) avoid or substantially lessen any of the project's significant impacts, which are all mitigated below the level of significance except for visual resources. Therefore, no alternative was identified for full analysis and comparison to the project other than the no project alternative. The No Project Alternative (Alternative 1) is discussed below.

8.7.1 Alternative 1: No Project Alternative

Under Alternative 1, the CEC would not issue a license to the applicant to construct and operate the Potentia-Viridi BESS. CEQA requires the "no project" analysis to discuss "what would be reasonably expected to occur in the foreseeable future if the project were not approved…" (Cal. Code Regs., tit. 14, § 15126.6, subd. (e)(2)). CEQA provides that the no project alternative can be "the circumstance under which the project does not proceed…If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this 'no project' consequence should be discussed" (Cal. Code Regs., tit. 14, § 15126.6, subd. (e)(3)(B)).

In considering the assumptions for a No Project alternative, CEQA outlines a couple of approaches, including the following (Cal. Code Regs., tit. 14, § 15126.6, subd. (e)(3)(B)):

> *In certain instances, the no project alternative means 'no build' wherein the existing environmental setting is maintained. However, where failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project's non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment.*

CEC staff considered what would be the most likely outcome of the No Project Alternative. Given how the site is situated in an area that is nearly surrounded by other renewable energy development and near a substation with capacity to serve this or a similar project, staff concluded that the site would probably be the subject of a new BESS proposal if the Potentia-Viridi BESS failed to move forward.

The Potentia-Viridi BESS would interconnect to the electrical grid at the Tesla Substation directly east of the project site. As described under subsection "8.6.4 Alternative Sites," above, the area near the Tesla Substation is attracting other renewable energy development applications. Projects being installed include the Mulqueeney Ranch Wind Repowering Project, which covers 4,589 acres and wraps around most of the Potentia-Viridi BESS site. The Griffith Energy Storage Project, a 400-MW BESS covering approximately 106 acres, is being installed directly south and east of

the Tesla Substation, next to the proposed project site. (**Appendix A, Cumulative Scenario**, in this staff assessment describes these projects.) The push to develop renewable energy projects on potentially available properties near the substation is expected to continue. Under the No Project Alternative, the project site is unlikely to remain in its existing state.

A high voltage transmission corridor parallels the long, northern edge of the approximately 70-acre Potentia-Viridi BESS site. The Union Pacific rail line runs east-west approximately 900 feet south of the lower end of the project site. A different renewable energy project would be limited to the same area between Patterson Pass Road, the transmission corridor, and the railroad. The applicant has a lease agreement with the property owner for the 70-acre project area. The schedule and outcome of a new lease negotiation between the property owner and a new developer cannot be accurately estimated. The approximate schedule for submittal of a potential new BESS proposal is unknown. Even with these uncertainties, if the Potentia-Viridi BESS fails to move forward, under the No Project Alternative it is reasonable to predict that a different developer would propose construction and operation of a BESS that would resemble the proposed project in acreage and orientation on the site. CEC staff determined that the Potentia-Viridi BESS would be consistent with the Alameda County General Plan in part because it meets the definition of "infrastructure," which "includes public facilities and all structures and development necessary for the provision of public services and utilities." (See **Section 5.8, Land Use, Agriculture, and Forestry** in this staff assessment for the analysis details.) It is assumed that a similar BESS facility on the site would also be consistent with Alameda County plans and policies. It is also assumed that a similar BESS facility would have a pathway to interconnect to the grid at the same PG&E switchyard.

If the CEC did not issue a license to the applicant to construct and operate the Potentia-Viridi BESS, the basic project objectives would not be attained. As discussed under subsection "8.4 Project Objectives and Alternatives Screening," above, a key project objective is to assist California in complying with the CPUC's 2021 reliability decision for 2023–2026 (D.21-06-035), which includes a requirement to procure at least 1,000 megawatts of long-duration storage resources by 2026. D.23-02-040 extended the schedule for bringing these resources online to 2028. D. 24-02-047 provides that load serving entities (LSEs) (e.g., public utilities) meeting specific requirements be allowed to request an extension to no later than June 1, 2031, for resources to come online. The applicant proposes to complete testing and commissioning for the Potentia-Viridi BESS by Quarter 2 2028. A new developer of a future BESS project at the site could not meet CPUC filing requirements and be included in the resources planned for procurement under D.21-06-035 and subsequent decisions (part of CPUC Rulemaking 20-05-003). Even so, under the No Project Alternative, a different developer would likely also specify an intention to assist California electric utilities in meeting obligations for deployment of renewable energy sources, including long-duration energy storage, to meet the long-term target calling for 100 percent clean electricity by 2045.

As discussed under subsection "8.5 Environmental Impacts of the Project," above, CEC staff recommends COCs and mitigation measures to reduce the potentially significant impacts identified in this staff assessment to less-than-significant levels. (CEC staff concluded that the impact regarding the potential for the project to substantially degrade the existing visual character or quality of public views of the site and its surroundings remains significant even after implementation of visual resource COCs/MMs.)

It is reasonable to conclude that due to various environmental and land use requirements, as well as technological parameters and site conditions, all of which drive the equipment selected and design and layout of a BESS facility, if the Potentia-Viridi BESS failed to move forward, a near-term future BESS project proposed for the site would be substantially similar to the Potentia-Viridi BESS facility. Thus, CEC staff's conclusions regarding impacts and mitigation set forth in the various technical areas would largely apply to this hypothetical future BESS. No additional comparisons are necessary.

8.8 Environmentally Superior Alternative

CEQA requires that an EIR identify the *environmentally superior alternative* and discuss the facts supporting that selection. CEC staff initially considered a range of potential alternatives to the project, including other renewable electrical energy generating and BESS technologies. Alternative sites initially considered by the applicant and reviewed by staff were rejected from further analysis primarily due to non-viable gen-tie line routes to the Tesla Substation and the applicant's inability to obtain site control. CEC staff considered a Reduced Capacity Alternative and concluded that it would make a marginal difference in the overall effects of impacts on biological resources, cultural and tribal cultural resources, paleontological resources, and visual resources. (See subsection "8.6 Alternatives Considered and Not Evaluated Further," above.) All these alternatives were eliminated from detailed consideration due to potential feasibility issues, failure to meet key project objectives, or failure to reduce any of the project's significant environmental impacts. This alternatives analysis shows there are no other potentially feasible alternatives that could attain the project objectives while avoiding or substantially lessening any of the project's significant impacts. CEC staff knows of no potentially feasible alternative that could reasonably be compared to the proposed Potentia-Viridi BESS. As discussed under subsection "8.6 Alternatives Considered and Not Evaluated Further," above, no comments relating to the scope and content of the Alternatives analysis were presented during or after the project scoping meeting, and no written comments were submitted to the CEC project docket.

Under the No Project Alternative for this project, it is assumed that the site would be developed for renewable energy in the foreseeable future (subsection 8.7.1, above). The relatively confined area that potentially could be developed means that such a project would likely be a BESS development with a similar orientation on the site and the same or similar gen-tie development area. In CEC staff's analyses of the No Project Alternative, CEC staff reasonably concluded that the impacts of the Potentia-Viridi BESS

would be the same or similar to the impacts of another BESS facility on the site because external factors such as environmental and land use requirements and technological limitations would direct facility design and layout of a hypothetical project just as is true for the proposed Potentia-Viridi BESS. As previously discussed, no other potentially feasible alternative is known that could provide a basis for an impact comparison with the proposed project. Given the similarities of impacts between the Potentia-Viridi BESS and the No Project Alternative, CEC staff concludes that no environmentally superior alternative can reasonably be identified.

Table 8-2 lists staff members who contributed to this Alternatives analysis.

TABLE 8-2 STAFF CONTRIBUTORS TO THE ALTERNATIVES ANALYSIS

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Section 9

Compliance Conditions and Compliance Monitoring Plan

9 Compliance Conditions and Compliance Monitoring Plan

9.1 Introduction

The Potentia-Viridi Battery Energy Storage System (project) Compliance Conditions of Certification (COCs), including a Compliance Monitoring Plan (Compliance Plan), are established as required by Public Resources Code section 25532. The Compliance Plan provides a means for assuring that the facility is constructed, operated, and closed in compliance with public health and safety and environmental law; all other applicable laws, ordinances, regulations, and standards (LORS); and the conditions adopted by the California Energy Commission (CEC) Final Decision (Decision) on the project's Opt-In application (OPT), or otherwise required by law. This Compliance Plan pertains only to those components within the CEC's Opt-In Certification (See **Section 2, Introduction** for a complete description of components).

The Compliance Plan is composed of elements that:

- set forth the duties and responsibilities of the compliance project manager (CPM), the project owner or operator, delegate agencies, and others;
- set forth the requirements for handling confidential records and maintaining the compliance record;
- state procedures for settling disputes and making post-certification changes;
- state the requirements for periodic compliance reports and other administrative procedures that are necessary to verify the compliance status for all CEC-approved COCs;
- establish contingency planning, facility non-operation protocols, and closure requirements; and
- establish a tracking method for the technical area COCs that contain measures required to mitigate potentially adverse project impacts associated with construction, operation, and closure below a level of significance; each technical COCs also includes one or more verification provisions that describe the means of assuring that the condition has been satisfied.

9.2 Key Project Event Definitions

The following terms and definitions help determine when various COCs are implemented.

Project Certification

Project certification occurs on the day the CEC dockets its decision after adopting it at a publicly noticed Business Meeting or hearing. At that time, all CEC COCs become binding on the project owner and the proposed facility. Also at that time, the project enters the compliance phase. It retains the same docket number it had during its siting

review, but the letter "C" is added at the end (for example, 19-OPT-8C) to differentiate the compliance phase activities from those of the Opt-in application proceeding.

Site Assessment and Pre-Construction Activities

The below-listed site assessment and pre-construction activities may be initiated or completed prior to the start of construction, subject to the CPM's approval of the specific site assessment or pre-construction activities.

Site assessment and pre-construction activities include the following, but only to the extent the activities are minimally disruptive to soil and vegetation and will not affect listed or special-status species or other sensitive resources:

1. the installation of environmental monitoring equipment;
2. a minimally invasive soil or geological investigation;
3. a topographical survey;
4. any other study or investigation to determine the environmental acceptability or feasibility of the use of the site for any particular facility;
5. any minimally invasive work to provide safe access to the site for any of the purposes specified in 1 through 4, above; and
6. removal of small surface structures and equipment that is minimally invasive such as sheds, trailers, and similar sized structures.

Site Mobilization and Construction

When a COC requires the project owner to take an action or obtain CPM approval prior to the start of construction, or within a period of time relative to the start of construction, that action must be taken, or approval must be obtained, prior to any site mobilization or construction activities, as defined below.

Site mobilization and construction activities are those necessary to provide site access for construction mobilization and facility installation, including both temporary and permanent equipment and structures, as determined by the CPM.

Site mobilization and construction activities include, but are not limited to:

1. ground disturbance activities like grading, boring, trenching, leveling, mechanical clearing, grubbing, and scraping;
2. site preparation activities, such as access roads, temporary fencing, trailer and utility installation, construction equipment installation and storage, equipment and supply laydown areas, borrow and fill sites, temporary parking facilities, chemical spraying, and controlled burns; and
3. permanent installation activities for all facility and linear structures, including access roads, fencing, utilities, parking facilities, equipment storage, mitigation and landscaping activities, and other installations, as applicable.

Commissioning

Commissioning activities test the functionality of the installed components and systems to ensure the facility operates safely and reliably. Commissioning provides a multistage, integrated, and disciplined approach to testing, calibrating, and proving all of the project's systems, software, and networks. For compliance monitoring purposes, examples of commissioning activities include interface connection and utility pre-testing, "cold" and "hot" electrical testing, system pressurization and optimization tests, grid synchronization, and combustion turbine "first fire" and tuning.

Start of Commercial Operation

For compliance monitoring purposes, "commercial operation" or "operation" begins once commissioning activities are complete, the certificate of occupancy has been issued, and the power plant has reached reliable steady-state electrical production. At the start of commercial operation, plant control is usually transferred from the construction manager to the plant operations manager. Operation activities can include a steady state of electrical production, or, for "peaker plants," a seasonal or on-demand operational regime to meet peak load demands.

Non-Operation and Closure

Non-operation is time-limited and can encompass part or all of a facility. Non-operation can be a planned event, usually for equipment maintenance or repair, or unplanned, usually the result of unanticipated events or emergencies.

Closure is a facility shutdown with no intent to restart operation. It may also be the cumulative result of unsuccessful efforts to re-start over an increasingly lengthy period of non-operation. Facility closures can occur due to a variety of factors, including, but not limited to, irreparable damage and/or functional or economic obsolescence.

9.3 Roles and Responsibilities

Provided below is a generalized description of the compliance roles and responsibilities for CEC staff (staff) and the project owner for the construction and operation of the Project.

Compliance Project Manager Responsibilities

The CPM's compliance monitoring and project oversight responsibilities include:

1. ensuring that the design, construction, operation, and closure of the project facilities are in compliance with the terms and conditions of the Decision;
2. resolving complaints;
3. processing post-certification project amendments for changes to the project description, COCs and ownership or operational control, and requests for extension of the deadline for the start of construction (see COM-10 for instructions on filing a Petition to Amend (PTA) or to extend a construction start date);

4. documenting and tracking compliance filings; and
5. ensuring that the compliance files are maintained and accessible.

The CPM is the central contact person for the CEC during project preconstruction, construction, operation, emergency response, and closure. The CPM will consult with the appropriate responsible parties when handling compliance issues, disputes, complaints, and amendments.

All project compliance submittals are submitted to the CPM for processing. Where a submittal requires CPM approval required by a condition of certification, the approval will involve appropriate staff and management. All submittals must include searchable electronic versions (.pdf, MS Word, or equivalent files).

Pre-Construction and Pre-Operation Compliance Meeting

The CPM usually schedules pre-construction and pre-operation compliance meetings prior to the projected start-dates of construction, plant operation, or both. These meetings are used to assist the CEC and the project owner's technical staff in the status review of all required pre-construction or pre-operation COCs, and facilitate staff taking proper action if outstanding conditions remain. In addition, these meetings shall ensure, to the extent possible, that CEC's COCs do not delay the construction and operation of the plant due to last-minute unforeseen issues, or a compliance oversight. Pre-construction meetings held during the certification process must be publicly noticed unless they are confined to administrative issues and processes.

Energy Commission Record

The CEC maintains the following documents and information as public record, in either the Compliance file or Dockets Unit files, for the life of the project (or other period as specified):

1. all documents demonstrating compliance with any legal requirements relating to the construction, operation, and closure of the facility;
2. all Monthly and Annual Compliance Reports (MCRs, ACRs) and other required periodic compliance reports (PCRs) filed by the project owner;
3. all project-related formal complaints of alleged noncompliance filed with the CEC; and
4. all petitions for project or COC changes and the resulting action by staff or the CEC.

Chief Building Official Delegation and Agency

Public Resources Code section 25532 requires the CEC to establish a monitoring system to assure that any facility it certifies is constructed and operated in a manner consistent with law and the CEC's Decision. In carrying out these responsibilities through monitoring construction and operation of the project, the CEC has the responsibilities of the chief building official (CBO) consistent with Health and Safety Code section

18949.27 and Title 24, part 2, section 104 (commonly referred to as the California Building Code, or CBC). Staff may delegate some CBO responsibility to either an independent third-party contractor or a local building official, as per section 103.3 of part 2 of the CBC. However, staff retains CBO authority when selecting a delegate CBO (DCBO), including the interpretation and enforcement of state and local codes, and the use of discretion, as necessary, in implementing the various codes and standards. (See section 104.1 of part 2 of the CBC).

The DCBO will be responsible for the implementation of all appropriate codes, standards, and CEC requirements. The DCBO will conduct on-site (including linear facilities) reviews and inspections at intervals necessary to fulfill these responsibilities. The project owner will pay all DCBO fees necessary to cover the costs of these reviews and inspections.

Project Owner Responsibilities

Should the project be approved, the project owner is responsible for ensuring that all COCs and applicable LORS in the project Decision are satisfied. The project owner will submit all compliance submittals to the CPM for processing unless the conditions specify another recipient. The Compliance conditions regarding post-certification changes specify measures that the project owner must take when modifying the project's design, operation, or performance requirements, or to transfer ownership or operational control. Failure to comply with any of the COCs or applicable LORS may result in a non-compliance report, an administrative fine, certification revocation, or any combination thereof, as appropriate.

9.4 Compliance Enforcement

The CEC's legal authority to enforce the terms and conditions of its Decision are specified in Public Resources Code sections 25545.11 and 25900. The CEC may amend or revoke a project certification and may impose a civil penalty for any significant failure to comply with the terms or conditions of the Decision. The CEC's actions and fine assessments would take into account the specific circumstances of the incident(s).

Periodic Compliance Reporting

Many of the COCs require submittals in the MCRs and ACRs. All compliance submittals assist the CPM in tracking project activities and monitoring compliance with the terms and conditions of the project Decision. During construction, the project owner or an authorized agent will submit compliance reports on a monthly basis. During operation, compliance reports are submitted annually; though reports regarding compliance with various technical area COCs may be required more often (e.g. Biological Resources), and if the project is operating with a temporary permit to occupy. Further detail regarding the MCR/ACR content and the requirements for an accompanying compliance matrix are described below.

Investigation Requests and Complaint Procedures

Any person may file a Request for Investigation alleging noncompliance with the COCs, CEC regulations, or orders. Such a request shall be filed with and reviewed by the Executive Director. The provisions setting forth the Request for Investigation process can be found in Title 20, California Code of Regulations, sections 1230 through 1232.5. The Request for Investigation may result in the Executive Director bringing a complaint against the alleged violator under section 1233 and seeking administrative penalties. The California Office of Administrative Law provides on-line access to the California Code of Regulations at http://www.oal.ca.gov/.

9.5 Post-Certification Changes to the Energy Commission Decision

The project owner must petition the CEC pursuant to Title 20, California Code of Regulations, section 1882, to amend the Final Decision to modify the design, operation, or performance requirements of the project and/or the linear facilities, or to transfer ownership or operational control of the facility. It is the responsibility of the project owner to contact the CPM to determine if a proposed project change should be considered a project modification pursuant to section 1882, and the CPM will determine whether staff approval will be sufficient, or whether CEC approval will be necessary.

A project owner is required to submit a $5,000 dollar fee for every petition to amend the license for a previously certified facility, pursuant to Public Resources Code section 25806(e). If the actual amendment processing costs exceed $5,000.00, the total PTA reimbursement fees owed by a project owner will not exceed the maximum filing fee, which is $1,068,853 adjusted annually. Current amounts for PTA fees are available at https://www.energy.ca.gov/programs-and-topics/topics/power-plants/licensing-and-compliance-fees-facilities. Implementation of a project modification without first securing CEC approval may result in an enforcement action including civil penalties in accordance with Public Resources Code, section 25545.11.

Below is a summary of the criteria for determining the type of approval process required, reflecting the provisions of Title 20, California Code of Regulations, section 1882, at the time this compliance plan was drafted. If the CEC modifies this regulation, the language in effect at the time of the requested change shall apply. Upon request, the CPM can provide sample formats of these submittals.

Changes to the Design, Operation or Performance of the Project

The project owner shall submit a Petition to Amend the CEC Decision, pursuant to Title 20, California Code of Regulations, section 1882 (b), when proposing changes to the design, operation, or performance requirements of the project and/or the linear facilities. All project changes that do not require the preparation of a subsequent or supplemental environmental impact report as set forth in California Code of Regulations, title 14, sections 15162 and 15163 are subject to staff approval. Project changes that do require the preparation of a subsequent or supplemental environmental impact report shall be submitted to the CEC for consideration.

Change of Ownership and/or Operational Control

Changes of ownership or operational control shall be approved by staff. Upon approval, the new owner/operator is obligated to follow all project conditions of certification and applicable laws. Failure to do so subjects the new owner/operator to enforcement actions and civil penalties under Public Resources Code section 25534.

9.6 Emergency Response Contingency Planning and Incident Reporting

To protect public health and safety and environmental quality, the COCs include contingency planning and incident reporting requirements to ensure compliance with necessary health and safety practices. A well-drafted contingency plan avoids or limits potential hazards and impacts resulting from serious incidents involving personal injury, hazardous spills, flood, fire, explosions, or other catastrophic events and ensures a comprehensive timely response. All such incidents must be reported immediately to the CPM and documented. These requirements are designed to protect the public, build from "lessons learned," limit the hazards and impacts, anticipate and prevent recurrence, and provide for the safe and secure shutdown and restart of the facility.

9.7 Facility Closure and Certification Termination

The CEC cannot reasonably foresee all potential circumstances in existence when a facility permanently closes. Therefore, the closure conditions provided herein strive for the flexibility to address circumstances that may exist at some future time. Most importantly, facility closure must be consistent with all applicable CEC COCs and the LORS in effect at that time.

Prior to submittal of the facility's Final Closure Plan to the CEC, the project owner and the CPM will hold a meeting to discuss the specific contents of the plan. In the event that significant issues are associated with the plan's approval, the CPM will hold one or more workshops and/or the CEC may hold public hearings as part of its approval procedure.

With the exception of measures to eliminate any immediate threats to public health and safety or to the environment, facility closure activities cannot be initiated until the CEC approves the Final Closure Plan and Cost Estimate, and the project owner complies with any requirements the CEC may incorporate as conditions of approval of the Final Closure Plan.

Upon approving the project owner's final closure plan, the CEC may direct that the facility's certification be terminated at the time staff finds the closure process contained in the plan has been completed.

9.8 Compliance Conditions of Certification

COM-1 Unrestricted Access. The project owner shall take all steps necessary to ensure that the CPM, responsible CEC staff, and delegate agencies or consultants, have unrestricted access to the facility site, related facilities, project-related staff, and the records maintained on site for the purpose of conducting audits, surveys, inspections, or general or closure-related site visits. Although the CPM will normally schedule site visits on dates and times agreeable to the project owner, the CPM reserves the right to make unannounced visits at any time, whether such visits are by the CPM in person or through representatives from CEC staff, delegated agencies, or consultants.

COM-2 Compliance Record. The project owner shall maintain electronic copies of all project files and submittals accessible on site, or at an alternative site approved by the CPM, for the operational life and closure of the project. The files shall also contain at least one hard copy of:

1. the facility's Opt-In Application;
2. all amendment petitions and CEC orders;
3. all site-related environmental impact and survey documentation;
4. all appraisals, assessments, and studies for the project;
5. all finalized original and amended structural plans and "as-built" drawings for the entire project;
6. all citations, warnings, violations, or corrective actions applicable to the project, and
7. the most current versions of any plans, manuals, and training documentation required by the COCs or applicable LORS.

The CEC staff and delegate agencies shall, upon request to the project owner, be given unrestricted access to the files maintained pursuant to this condition which includes electronic submission of records to the CEC.

COM-3 Compliance Verification Submittals. Verification lead times associated with the start of construction may require the project owner to file submittals during application or amendment processing, particularly if construction is planned to commence shortly after certification. The verification procedures may be modified as necessary by the CPM after notice to the project owner.

A cover letter from the project owner or an authorized agent is required for all compliance submittals and correspondence pertaining to compliance matters. The cover letter subject line shall identify the project by docket number, cite the appropriate condition of certification number(s), and give a brief description of the subject of the submittal. When submitting supplementary or corrected information, the project owner shall reference the date of the submittal and the condition(s) of certification applicable.

All reports and plans required by the project's COCs shall be submitted in a searchable electronic format (.pdf, MS Word or Excel, etc.) and include standard formatting elements such as a table of contents identifying by title and page number each section, table, graphic, exhibit, or addendum. All report and/or plan graphics and maps shall be adequately scaled and shall include a key with descriptive labels, directional headings, a bar scale, and the most recent revision date.

The project owner is responsible for the content and delivery of all verification submittals to the CPM showing that the actions required by the verification were satisfied by the project owner or an agent of the project owner. All submittals shall be submitted electronically by email.

COM-4 Pre-Construction Matrix and Tasks Prior to Start of Construction. Prior to construction, the project owner shall submit to the CPM a compliance matrix including only those conditions that must be fulfilled before the start of construction. The matrix shall be included with the project owner's first compliance submittal or prior to the first pre-construction meeting, whichever comes first, and shall be submitted in a format similar to the description below.

Site mobilization and construction activities shall not start until the following have occurred:

1. the project owner has submitted the pre-construction matrix and all compliance verifications pertaining to pre-construction COCs; and
2. the CPM has issued an authorization-to-construct letter to the project owner.

The deadlines for submitting various compliance verifications to the CPM allow staff sufficient time to review and comment on, and, if necessary, also allow the project owner to revise the submittal in a timely manner. These procedures help ensure that project construction proceeds according to schedule. Failure to submit required compliance documents by the specified deadlines may result in delayed authorizations to commence various stages of the project.

If the project owner anticipates site mobilization immediately following project certification, it may be necessary for the project owner to file compliance submittals prior to project certification. In these instances, compliance verifications can be submitted in advance of the required deadlines and the anticipated authorizations to start construction. The project owner must understand that submitting items required in compliance verifications prior to these authorizations is at the owner's own risk. Any approval by CEC staff prior to project certification is subject to change based upon the Commission Decision, or amendment thereto, and early staff compliance approvals do not imply that the CEC will certify the project for actual construction and operation.

COM-5 Compliance Matrix. The project owner shall submit a compliance matrix to the CPM with each MCR and ACR. The compliance matrix shall identify:

1. the technical area (e.g., biological resources, facility design, etc.);

2. the condition number;
3. a brief description of the verification action or submittal required by the condition;
4. the date the submittal is required (e.g., 60 days prior to construction, after final inspection, etc.);
5. the expected or actual submittal date;
6. the date a submittal or action was approved by the Delegate Chief Building Official (DCBO), CPM, or delegate agency, if applicable;
7. the compliance status of each condition (e.g., "not started," "in progress" or "completed" (include the date)); and
8. if the condition was amended, the updated language and the date the amendment was proposed or approved.

The CPM can provide a template for the compliance matrix upon request.

COM-6 Monthly Compliance Report. The first MCR is due one month following the docketing of the project's Decision unless otherwise agreed to by the CPM. The first MCR shall include the docket number and an initial list of dates for each of the events identified on the Key Events List. (The Key Events List form is found at the end of this **Compliance Conditions and Compliance Monitoring Plan** section.) During pre-construction, construction, or closure, the project owner or authorized agent shall submit an electronic searchable version of the MCR to the CPM within 10 business days after the end of each reporting month.

MCRs shall be submitted each month until construction is complete and the final certificate of occupancy is issued by the DCBO. MCRs shall be clearly identified for the month being reported. The MCR shall contain, at a minimum:

1. a summary of the current project construction status, a revised/updated schedule if there are significant delays, and an explanation of any significant changes to the schedule;
2. documents required by specific conditions to be submitted along with the MCR. Each of these items shall be identified in the transmittal letter, as well as the conditions they satisfy, and submitted as attachments to the MCR;
3. an initial, and thereafter updated, compliance matrix showing the status of all COCs;
4. a list of conditions that have been satisfied during the reporting period, and a description or reference to the actions that satisfied the condition;
5. a list of any submittal deadlines that were missed, accompanied by an explanation and an estimate of when the information will be provided;
6. a cumulative listing of any approved changes to COCs;
7. a listing of any filings submitted to, and permits issued by, other governmental agencies during the month;

8. a projection of project compliance activities scheduled during the next two months; the project owner shall notify the CPM as soon as any changes are made to the project construction schedule that would affect compliance with COCs;
9. a listing of the month's additions to the on-site compliance file; and
10. a listing of incidents, complaints, notices of violation, official warnings, and citations received during the month; a list of any incidents that occurred during the month, a description of the actions taken to date to resolve the issues; and the status of any unresolved actions noted in the previous MCRs.

COM-7 Periodic and Annual Compliance Reports. After construction is complete, the project must submit searchable electronic ACRs to the CPM, as well as other periodic compliance reports (PCRs) required by the various technical disciplines. ACRs shall be completed for each year of commercial operation and are due each year on a date agreed to by the CPM. Other PCRs (e.g. quarterly reports or decommissioning reports to monitor closure compliance), may be specified by the CPM. The searchable electronic copies may be filed on an electronic storage medium or by e-mail, subject to CPM approval. Each ACR must include the docket number, identify the reporting period, and contain the following:

1. an updated compliance matrix which shows the status of all COCs (fully satisfied conditions do not need to be included in the matrix after they have been reported as completed);
2. a summary of the current project operating status and an explanation of any significant changes to facility operations during the year;
3. documents required by specific conditions to be submitted along with the ACR; each of these items shall be identified in the transmittal letter with the condition(s) it satisfies, and submitted as an attachment to the ACR;
4. a cumulative list of all post-certification changes approved by the Energy Commission or the CPM;
5. an explanation for any submittal deadlines that were missed, accompanied by an estimate of when the information will be provided;
6. a listing of filings submitted to, or permits issued by, other governmental agencies during the year;
7. a projection of project compliance activities scheduled during the next year;
8. a listing of the year's additions to the on-site compliance file;
9. an evaluation of the Site Contingency Plan, including amendments and plan updates; and
10. a listing of complaints, incidents, notices of violation, official warnings, and citations received during the year, a description of how the issues were resolved, and the status of any unresolved complaints.

COM-8 Confidential Information. Any information that the project owner designates as confidential shall be submitted to the Energy Commission's Executive Director with an application for confidentiality, pursuant to Title 20, California Code of Regulations, section 2505(a). Any information deemed confidential pursuant to the regulations will remain undisclosed, as provided in Title 20, California Code of Regulations, section 2501 *et seq*.

COM-9 Annual Energy Facility Compliance Fee. Pursuant to the provisions of section 25806(b) of the Public Resources Code, the project owner is required to pay an annually adjusted compliance fee. Current compliance fee information is available on the CEC's website at http://www.energy.ca.gov/siting/filing_fees.html. The project owner may also contact the CPM for the current fee information. The initial payment is due on the date the CEC dockets its final Decision. All subsequent payments are due by July 1 of each year in which the facility retains its certification.

COM-10 Amendments, Staff-Approved Project Modifications, and Ownership/Operational Control Changes. The project owner shall petition the CEC, pursuant to Title 20, California Code of Regulations, section 1882, to modify the design, operation, or performance requirements of the project or linear facilities. The CPM will determine whether staff approval will be sufficient, or whether CEC approval will be necessary. It is the project owner's responsibility to contact the CPM to determine if a proposed project change triggers the requirements of section 1882. Section 1882 details the required contents for a petition to amend a CEC Decision.

For changes in ownership or operational control the existing owner/operator and incoming owner/operator shall jointly in writing notify the CPM, 30 days in advance of the pending change in ownership or operational control, the fact of the change and all relevant contact information. Upon the transition, the new owner/operator will be obligated to comply with all requirements of the certification and will be subject to enforcement actions.

A project owner is required to submit a $5,000 fee for every petition to amend a previously certified facility, pursuant to Public Resources Code section 25806 (e). If the actual amendment processing costs exceed $5,000.00, the total PTA reimbursement fees owed by a project owner will not exceed the OPT cap of $1,050,850, adjusted annually. Current amendment fee information is available on the CEC's website at http://www.energy.ca.gov/siting/filing_fees.html.

COM-11 Reporting of Complaints, Notices, and Citations. Prior to the start of construction or closure, the project owner shall send a letter to property owners and residences within one mile of the project boundaries, notifying them of a telephone number to contact project representatives with questions, complaints or concerns. All notifications and complaint forms shall be provided in both English and Spanish to ensure effective communication with Spanish-speaking residents. If the telephone is not staffed 24 hours per day, it must include automatic answering with date and time stamp recording.

The project owner shall respond to all recorded complaints within 24 hours or the next business day. The project owner shall post the telephone number onsite and make it easily visible to passersby during construction, and first year of project operation, and closure. The project owner shall provide the contact information to the CPM and promptly report any disruption to the contact system or telephone number change to the CPM, who will provide it to any persons contacting him or her with a complaint.

Within five business days of receipt, the project owner shall report, and provide copies to the CPM, all complaints, including, but not limited to, noise and lighting complaints, notices of violation, notices of fines, official warnings, and citations. Complaints shall be logged and numbered. Noise complaints shall be recorded on the form provided in the Noise and Vibration conditions of certification. All other complaints shall be recorded on the complaint form at the end of this compliance plan. Additionally, the project owner must include in the next MCR, ACR or PCR, copies of all complaints, notices, warnings, citations and fines, a description of how the issues were resolved, and the status of any unresolved or ongoing matters.

COM-12 Emergency Response Site Contingency Plan. No less than 60 days prior to the start of construction (or other CPM-approved) date, the project owner shall submit, for CPM review and approval, an Emergency Response Site Contingency Plan (Contingency Plan). Subsequently, no less than 60 days prior to the start of commercial operation, the project owner shall update (as necessary) and resubmit the Contingency Plan for CPM review and approval. The Contingency Plan shall evidence a facility's coordinated emergency response and recovery preparedness for a series of reasonably foreseeable emergency events. The CPM may require Contingency Plan updating over the life of the facility. Contingency Plan elements include, but are not limited to:

1. a site-specific list and direct contact information for persons, agencies, and responders to be notified for an unanticipated event;
2. a detailed and labeled facility map, including all fences and gates, the windsock location (if applicable), the on and off-site assembly areas, and the main roads and highways near the site;
3. a detailed and labeled map of population centers, sensitive receptors, and the nearest emergency response facilities;
4. a description of the on-site, first response and backup emergency alert and communication systems, site-specific emergency response protocols, and procedures for maintaining the facility's contingency response capabilities, including a detailed map of interior and exterior evacuation routes, and the planned location(s) of all permanent safety equipment;
5. an organizational chart including the name, contact information, and first aid/emergency response certification(s) and renewal date(s) for all personnel regularly on-site;

6. a brief description of reasonably foreseeable, site-specific incidents and accident sequences (on- and off-site), including response procedures and protocols and site security measures to maintain twenty-four-hour site security;
7. procedures for maintaining contingency response capabilities; and
8. the procedures and implementation sequence for the safe and secure shutdown of all non-critical equipment and removal of hazardous materials and waste (see also specific conditions of certification for the technical areas of **Public Health, Solid Waste Management, Hazards, Hazardous Materials, and Wildfire, and Worker Safety and Fire Protection**).

COM-13 Incident-Reporting Requirements. The project owner shall notify the CPM within one hour after it is safe and feasible, of any incident at the facility that results in any of the following:

1. An event of any kind that causes a "Forced Outage" as defined in the CAISO tariff;
2. The activation of onsite emergency fire suppression equipment to combat a fire;
3. Any chemical, gas or hazardous materials release that could result in potential health impacts to the surrounding population; or create an offsite odor issue; and
4. Notification to, or response by, any off-site emergency response federal, state or local agency regarding a fire, hazardous materials release, onsite injury, or any physical or cyber security incident.

Notification shall describe the circumstances, status, and expected duration of the incident. If warranted, as soon as it is safe and feasible, the project owner shall implement the safe shutdown of any non-critical equipment and removal of any hazardous materials and waste that pose a threat to public health and safety and to environmental quality (also, see specific conditions of certification for the technical areas of **Hazards, Hazardous Materials and Wildfire, and Solid Waste Management**).

Within six business days of the incident, the project owner shall submit to the CPM a detailed incident report that includes, as applicable, the following information:

1. A brief description of the incident, including its date, time, and location;
2. A description of the cause of the incident, or likely causes if it is still under investigation;
3. The location of any off-site impacts;
4. Description of any resultant impacts;
5. A description of emergency response actions associated with the incident;
6. Identification of responding agencies;
7. Identification of emergency notifications made to federal, state, and local agencies;

8. Identification of any hazardous materials released and an estimate of the quantity released;
9. A description of any injuries, fatalities, or property damage that occurred as a result of the incident;
10. Fines or violations assessed or being processed by other agencies;
11. Name, phone number, and e-mail address of the appropriate facility contact person having knowledge of the event; and
12. Corrective actions to prevent a recurrence of the incident.

The project owner shall maintain all incident report records for the life of the project, including closure. After the submittal of the initial report for any incident, the project owner shall submit to the CPM copies of incident reports within 48 hours of a request.

If the project owner requests that an incident notification or report be designated as a confidential record and not publicly disclosed, the project owner shall submit copies of notices or reports with an application for confidential designation in accordance with California Code of Regulations, Title 20, section 2505 et seq.

COM-14 Non-Operation and Repair/Restoration Plans.

a. If the facility ceases operation temporarily (excluding planned and unplanned maintenance for longer than one week (or other CPM approved date), but less than three months (or other CPM-approved date), the project owner shall notify the CPM. Notice of planned non-operation shall be given at least two weeks prior to the scheduled date. Notice of unplanned non-operation shall be provided no later than one week after non-operation begins.

For any non-operation, a Repair/Restoration Plan for conducting the activities necessary to restore the facility to availability and reliable and/or improved performance shall be submitted to the CPM within one week after notice of non-operation is given. If non-operation is due to an unplanned incident, temporary repairs and/or corrective actions may be undertaken before the Repair/Restoration Plan is submitted. The Repair/Restoration Plan shall include:

1. Identification of operational and non-operational components of the plant;
2. A detailed description of the repair and inspection or restoration activities;
3. A proposed schedule for completing the repair and inspection or restoration activities;
4. An assessment of whether or not the proposed activities would require changing, adding, and/or deleting any COCs, and/or would cause noncompliance with any applicable LORS; and
5. Planned activities during non-operation, including any measures to ensure continued compliance with all COCs and LORS.

b. Written monthly updates (or other CPM-approved intervals) to the CPM for non-operational periods, until operation resumes, shall include:
    1. Progress relative to the schedule;
    2. Developments that delayed or advanced progress or that may delay or advance future progress;
    3. Any public, agency, or media comments or complaints; and
    4. Projected date for the resumption of operation.
c. During non-operation, all applicable COCs and reporting requirements remain in effect. If, after one year from the date of the project owner's last report of productive repair/restoration plan work, the facility does not resume operation or does not provide a plan to resume operation, the Executive Director may assign suspended status to the facility and recommend commencement of permanent closure activities. Within 90 days of the Executive Director's determination, the project owner shall do one of the following:
    1. If the facility has a closure plan, the project owner shall update it and submit it for CEC review and approval; or
    2. If the facility does not have a closure plan, the project owner shall develop one consistent with the requirements in this Compliance Plan and submit it for CEC review and approval.

COM-15 Facility Closure Planning. To ensure that a facility's eventual permanent closure and maintenance do not pose a threat to public health and safety and/or to environmental quality, the project owner shall coordinate with the CEC to plan and prepare for eventual permanent closure.

Final Closure Plan and Cost Estimate

a. No less than one year (or other CPM-approved date) prior to initiating a permanent facility closure, or upon an order compelling permanent closure, the project owner shall submit for CEC review and approval a Final Closure Plan and Cost Estimate, which includes any site maintenance and monitoring.

    Prior to submittal of the facility's Final Closure Plan to the CEC, the project owner and the CPM will hold a meeting to discuss the specific contents of the plan. In the event that significant issues are associated with the plan's approval, the CPM may hold one or more workshops and/or the CEC may hold public hearings as part of its approval procedure.
b. Final Closure Plan and Cost Estimate contents include, but are not limited to:
    1. a statement of specific Final Closure Plan objectives;
    2. a statement of qualifications and resumes of the technical experts proposed to conduct the closure activities, with detailed descriptions of previous power plant closure experience;

3. identification of any facility-related installations or maintenance agreements not part of the CEC certification, designation of who is responsible for these, and an explanation of what will be done with them after closure;
4. a comprehensive scope of work and itemized budget for permanent plant closure and site maintenance activities, with a description and explanation of methods to be used, broken down by phases, including, but not limited to:
    a. dismantling and demolition;
    b. recycling and site clean-up;
    c. impact mitigation and monitoring;
    d. site remediation and/or restoration;
    e. exterior maintenance, including paint, landscaping and fencing;
    f. site security and lighting; and
    g. any contingencies.
5. a final cost estimate for all closure activities, by phases, including site
    a. monitoring and maintenance costs, and long-term equipment
    b. replacement;
6. a schedule projecting all phases of closure activities for the power plant site and all appurtenances constructed as part of the CEC-certified project;
7. an electronic submittal package of all relevant plans, drawings, risk assessments, and maintenance schedules and/or reports, including an above and below-ground infrastructure inventory map and registered engineer's or DCBO's assessment of demolishing the facility;
8. additionally, for any facility that permanently ceased operation prior to submitting a Final Closure Plan and Cost Estimate and for which only minimal or no maintenance has been done since, a comprehensive condition report focused on identifying potential hazards;
9. all information additionally required by the facility's COCs applicable to plant closure;
10. an equipment disposition plan, including:
    a. recycling and disposal methods for equipment and materials; and
    b. identification and justification for any equipment and materials that will remain on-site after closure.
11. a site disposition plan, including but not limited to proposed rehabilitation, restoration, and/or remediation procedures, as required by the COCs and applicable LORS, and site maintenance activities;
12. identification and assessment of all potential direct, indirect, and cumulative impacts and proposal of mitigation measures to reduce significant adverse

impacts to a less-than-significant level. Potential impacts to be considered shall include, but not be limited to:

a. traffic;
b. noise and vibration;
c. soil erosion;
d. air quality degradation;
e. solid waste;
f. hazardous materials;
g. waste water discharges; and
h. contaminated soil;

13. identification of all current conditions of certification, LORS, federal, state, regional, and local planning efforts applicable to the facility, and
14. proposed strategies for achieving and maintaining compliance during closure;
15. updated mailing list and Listserv of all responsible agencies, potentially interested parties, and property owners within one mile of the facility;
16. identification of alternatives to plant closure and assessment of the feasibility and environmental impacts of these; and
17. description of and schedule for security measures and safe shutdown of all non-critical equipment and removal of hazardous materials and waste (see COCs **Public Health, Solid Waste Management, Hazards, Hazardous Materials, and Wildfire, and Worker Safety and Fire Protection**).

If the CEC-approved Final Closure Plan and Cost Estimate procedures are not initiated within one year of the plan approval date, it shall be updated and re-submitted to the CEC for supplementary review and approval. If a project owner initiates but then suspends closure activities, and the suspension continues for longer than one year, the CEC may initiate corrective actions against the project owner to complete facility closure. The project owner remains liable for all costs of contingency planning and closure.

Upon approving the project owner's final closure plan, the CEC may direct that the facility's certification be terminated at the time staff finds the closure process contained in the plan has been completed.

KEY EVENTS LIST

PROJECT: _____

DOCKET #: _____

COMPLIANCE PROJECT MANAGER:

EVENT DESCRIPTION	DATE
Certification Date	
Obtain Site Control	
On-line Date	
POWER PLANT SITE ACTIVITIES	
Start Site Assessment/Pre-construction	
Start Site Mobilization/Construction	
Begin Pouring Major Foundation Concrete	
Begin Installation of Major Equipment	
Completion of Installation of Major Equipment	
Obtain Building Occupation Permit	
Start Commercial Operation	
Complete All Construction	
TRANSMISSION LINE ACTIVITIES	
Start Transmission Line Construction	
Complete Transmission Line Construction	
Synchronization with Grid and Interconnection	
FUEL SUPPLY LINE ACTIVITIES	
Start Gas Pipeline Construction and Interconnection	
Complete Gas Pipeline Construction	
WATER SUPPLY LINE ACTIVITIES	
Start Water Supply Line Construction	
Complete Water Supply Line Construction	
Start Recycled Water Supply Line Construction	
Complete Recycled Water Supply Line Construction	

ATTACHMENT A

COMPLAINT REPORT AND RESOLUTION FORM

COMPLAINT LOG NUMBER:_____ DOCKET NUMBER:_____

PROJECT NAME:_____

COMPLAINANT INFORMATION

NAME:_____ PHONE NUMBER:_____

ADDRESS:_____

COMPLAINT

DATE COMPLAINT RECEIVED:_____ TIME COMPLAINT RECEIVED:_____

COMPLAINT RECEIVED BY: _____ ☐ TELEPHONE ☐ IN WRITING (COPY ATTACHED)

DATE OF FIRST OCCURRENCE:_____

DESCRIPTION OF COMPLAINT (INCLUDING DATES, FREQUENCY, AND DURATION):_____

FINDINGS OF INVESTIGATION BY PLANT PERSONNEL:_____

DOES COMPLAINT RELATE TO VIOLATION OF A CEC REQUIREMENT? ☐ YES ☐ NO

DATE COMPLAINANT CONTACTED TO DISCUSS FINDINGS:_____

DESCRIPTION OF CORRECTIVE MEASURES TAKEN OR OTHER COMPLAINT RESOLUTION:_____

DOES COMPLAINANT AGREE WITH PROPOSED RESOLUTION? ☐ YES ☐ NO

IF NOT, EXPLAIN:_____

CORRECTIVE ACTION

IF CORRECTIVE ACTION NECESSARY, DATE COMPLETED:_____

DATE FIRST LETTER SENT TO COMPLAINANT (COPY ATTACHED):_____

DATE FINAL LETTER SENT TO COMPLAINANT (COPY ATTACHED):_____

OTHER RELEVANT INFORMATION:_____

"This information is certified to be correct."

PLANT MANAGER SIGNATURE:_____ DATE: _____

(ATTACH ADDITIONAL PAGES AND ALL SUPPORTING PHOTO/DOCUMENTATION, AS REQUIRED)

COMPLIANCE CONDITIONS OF CERTIFICATION

Compliance Table 1:
Summary of Compliance Conditions of Certification

Condition Number	Subject	Description
COM-1	Unrestricted Access	The project owner shall grant CEC staff and delegate agencies or consultants unrestricted access to the power plant site.
COM-2	Compliance Record	The project owner shall maintain project files on-site or at an alternative site approved by the CPM. The CEC staff and delegate agencies shall be given unrestricted access to the files.
COM-3	Compliance Verification Submittals	The project owner is responsible for the delivery and content of all verification submittals to the CPM, regardless of whether the conditions were satisfied directly by the project owner or by an agent.
COM-4	Pre-construction Matrix and Tasks Prior to Start of Construction	Construction shall not commence until all of the following activities/submittals have been completed: Project owner has submitted a pre-construction matrix identifying conditions to be fulfilled before the start of construction; Project owner has completed all pre-construction conditions to the CPM's satisfaction; and CPM has issued a letter to the project owner authorizing construction.
COM-5	Compliance Matrix	The project owner shall submit a compliance matrix (in a spreadsheet format) with each Monthly and Annual Compliance Report, which includes the current status of all Compliance conditions of certification.
COM-6	Monthly Compliance Reports and Key Events List	During construction, the project owner shall submit Monthly Compliance Reports (MCRs) which include specific information. The first MCR is due 1 one month following the docketing of the CEC's Decision on the project and shall include an initial list of dates for each of the events identified on the Key Events List.
COM-7	Periodic and Annual Compliance Reports	After construction ends, and throughout the life of the project, the project owner shall submit Annual Compliance Reports (ACRs) instead of MCR's.
COM-8	Confidential Information	Any information the project owner designates as confidential shall be submitted to the CEC's Executive Director with a request for confidentiality.
COM-9	Annual Fees	Required payment of the Annual Energy Facility Compliance Fee.
COM-10	Post-certification Changes	The project owner shall petition the CEC to delete or change a condition of certification, modify the project design or operational requirements, and/or transfer ownership or operational control of the facility. Petitions to Amend require the payment of amendment processing fees.
COM-11	Reporting of Complaints, Notices, and Citations	Prior to the start of construction, the project owner shall provide all property owners within a one-mile radius a telephone number to contact project representatives with questions, complaints, or concerns. The project owner shall respond to all recorded complaints within 24 hours. Within five days of receipt, the project owner shall report to the CPM all notices, complaints, violations, and citations.

Condition Number	Subject	Description
COM-12	Site Contingency Plan	No less than 60 days prior to the start of commercial operation, the project owner shall submit an on-site Contingency Plan to ensure protection of public health and safety and environmental quality during a response to an emergency.
COM-13	Incident-Reporting Requirements	The project owner shall notify the CPM within one hour of an incident and submit a detailed incident report within one week, maintain records of incident report, and submit public health and safety documents with employee training provisions.
COM-14	Non-Operation	No later than two weeks prior to a facility's planned non-operation, or no later than one week after the start of unplanned non-operation, the project owner shall notify the CPM, interested agencies and nearby property owners of this status. During non-operation, the project owner shall provide written updates to the CPM.
COM-15	Facility Closure Planning	No less than one year prior to planned permanent closure, or upon an order compelling permanent closure, the project owner shall submit a Final Closure Plan and Cost Estimate.

Section 10

Mandatory Opt-In Requirements

10 Mandatory Opt-In Requirements

10.1 "Facility" Definition Met

Summary of Requirements

The California Energy Commission (CEC) has jurisdiction to certify certain non-fossil-fueled power plants, energy storage facilities, the electric transmission lines from these facilities to the first point of interconnection, and related manufacturing facilities.[1] A developer with an eligible project may optionally file with the CEC to obtain a certification to construct and operate the project. The CEC is the "lead agency" under the California Environmental Quality Act (CEQA) and is required to prepare an environmental impact report, mitigated negative declaration, or negative declaration, for any facility that elects to opt-in to the CEC's jurisdiction. With exceptions, the issuance of a certificate by the CEC for an eligible facility is in lieu of any permit, certificate, or similar document required by any state, local, or regional agency, or federal agency to the extent permitted by federal law, and supersedes any applicable statute, ordinance, or regulation of any state, local, or regional agency, or federal agency to the extent permitted by federal law.

An eligible Opt-In project must meet one or more of the definitions of a "facility"[2]:

1. A solar photovoltaic or terrestrial wind electrical generating powerplant with a generating capacity of 50 megawatts or more and any facilities appurtenant thereto.
2. An energy storage system[3] that can store 200 megawatt hours or more of electrical energy.
3. A stationary electrical generating powerplant using any source of thermal energy, with a generating capacity of 50 megawatts or more, excluding any powerplant that burns, uses, or relies on fossil or nuclear fuels.
4. A discretionary project[4] for which the applicant has certified that a capital investment of at least two hundred fifty million dollars will be made over a period of five years.[5] The applicant must additionally provide what the facility would manufacture, produce, or assemble, and how the facility's products or services would be used in the manufacture, production, or assembly of the following:
   a. Energy storage systems or component manufacturing;
   b. Wind systems or component manufacturing;

1 Pub. Resources Code, § 25545.1
2 Pub. Resources Code, § 25545(b)
3 Pub. Util. Code, § 2835
4 Pub. Resources Code, § 21080
5 Pub. Resources Code, § 25545(b)(4)

c. Solar photovoltaic energy systems or component manufacturing; or

d. Specialized products, components, or systems that are integral to renewable energy or energy storage technologies.[6]

5. An electric transmission line carrying electric power from a facility described in paragraph (1), (2), or (3) that is located in the state to a point of junction with any interconnected electrical transmission system.

6. A hydrogen production facility and associated onsite storage and processing facilities that do not derive hydrogen from a fossil fuel feedstock and that receive funding from any of the following:

   a. The Hydrogen Program established pursuant to Section 25664.1.

   b. Section 91530, as added by the Safe Drinking Water, Wildfire Prevention, Drought Preparedness, and Clean Air Bond Act of 2024 (Section 2 of Chapter 83 of the Statutes of 2024 (Senate Bill (SB) 867), if that act is approved by the voters at the November 5, 2024, statewide general election.

   c. The Alliance for Renewable Clean Hydrogen Energy Systems (ARCHES) authorized by Article 15 (commencing with Section 12100.160) of Chapter 1.6 of Part 2 of Division 3 of Title 2 of the Government Code, as awarded by the United States Department of Energy Office of Clean Energy Demonstrations.

7. A geothermal powerplant or a project that comprises multiple geothermal powerplants on a single site.

Proposed Findings of Fact

Based on the information provided in the application, and additional evidence and information as described below and contained in the record of this proceeding, staff concludes the following fact is supported by substantial evidence in the record:

1. The project is an up to 3,200 megawatt-hour (MW-hour) battery energy storage system thus exceeding the minimum 200 MW-hour threshold required to meet the definition of a facility.

Conclusions

Based on the foregoing findings, staff concludes the project meets one or more of the definitions of a "facility," as required under Public Resources Code section 25545(b) and recommends the CEC may adopt these proposed findings and conclusions as they are supported by substantial evidence in the record.

6 Cal. Code Regs., tit. 20, § 1877(b)

10.2 Requirements for Covered Project Under the Labor Code

Summary of Requirements

Public Resources Code section 25545.3.3 requires the applicant to certify that either the entirety of the construction of the project is a public work for purposes of Chapter 1 (commencing with section 1720) of Part 7 of Division 2 of the Labor Code, or the construction of the project is not in its entirety a public work for which prevailing wages must be paid, but all construction workers employed on the project will be paid at least the general prevailing rate of per diem wages. In addition, Public Resources code section 25545.3.5 requires the applicant to certify that a skilled and trained workforce will be used to perform all construction work.

Proposed Finding of Fact

Based on the information provided in the application, and additional evidence and information as described below and contained in the record of this proceeding, staff concludes the following facts are supported by substantial evidence in the record:

1. In Appendix 1D of the Opt-In application (AMLGMN 2024ff), the applicant has certified that all construction workers employed on the project will be paid at least the general prevailing rate of per diem wages for the type of work and geographic area, as determined by the Director of Industrial Relations pursuant to Sections 1773 and 1773.9 of the Labor Code, except that apprentices registered in programs approved by the Chief of the Division of Apprenticeship Standards may be paid at least the applicable apprentice prevailing rate.
2. Applicant further certifies that, for the portion(s) of the project that are not a public work for which prevailing wages must be paid under Article 1 (commencing with Section 1720) of Chapter 1 of Part 7 of Division 2 of the Labor Code, it will comply with the following statutory requirements, as applicable:
    a. Applicant shall ensure that the prevailing wage requirement is included in all contracts for the performance of all construction work.
    b. All contractors and subcontractors shall pay to all construction workers employed in the construction of the project at least the general prevailing rate of per diem wages. Apprentices registered in programs approved by the Chief of the Division of Apprenticeship Standards may be paid at least the applicable apprentice prevailing rate.
    c. All contractors and subcontractors performing construction work on the project shall employ apprentices at no less than the ratio required in the Labor Code section 1777.5.
    d. All contractors and subcontractors performing construction work shall maintain and verify payroll records pursuant to the Labor Code section 1776, make those records available for inspection and copying as provided therein and furnish

those payroll records to the Labor Commissioner pursuant to Labor Code section 1771.4.

e. Contractors and subcontractors performing construction work on the project may be subject to a project labor agreement. The project labor agreement shall include, but is not limited to, all of the following:

   i. Prevailing wages provisions applicable to all construction workers employed in the construction of the project and an arbitration procedure.

   ii. Target hiring provisions as required under Public Resources Code section 25545.3.3(b)(6)(B).

   iii. Apprenticeship utilization provisions committing to increasing the share of work performed by state-registered apprentices above the state-mandated minimum ratio required in the Labor Code section 1777.5.

   iv. Apprenticeship utilization provisions committing to hiring and retaining a certain percentage of state-registered apprentices that completed the Multi-Craft Core pre-apprenticeship training as defined in the Unemployment Insurance Code section 14005(t).

3. In Appendix 1D of the Opt-In application (AMLGMN 2024ff), the applicant certified that a skilled and trained workforce will be used to perform all construction work on the project, and it will comply with the following statutory requirements, as applicable:

   a. All contracts shall require for the performance of work that every contractor and subcontractor at every tier will individually use a skilled and trained workforce to construct the project.

   b. Every contractor and subcontractor must use a skilled and trained workforce to construct the project.

   c. Except as provided in Public Resources Code section 25545.3.5(e), contractors and subcontractors that fail to use a skilled and trained workforce shall be subject to the penalties provided in the Public Contract Code section 2603.

   d. Applicant must retain records, including copies of monthly reports, that demonstrate compliance with the Public Contract Code section 2600 while the project or contract is being performed and for three years after completion of the project or contract. The applicant must submit these records immediately upon request of the CEC. When submitted to the CEC, these records shall be a public record under the California Public Records Act and shall be open to public inspection.

4. Applicant further certifies that if all contractors and subcontractors performing work on the project are subject to a project labor agreement, the project labor agreement will include:

a. Provisions requiring compliance with the skilled and trained workforce requirement and for enforcement of that obligation through an arbitration procedure.

b. Targeted hiring provisions, including a targeted hiring plan, on a craft-by-craft basis to address job access for local, disadvantaged, or underrepresented workers, as defined by a local agency.

c. Apprenticeship utilization provisions that commit all parties to increasing the share of work performed by state-registered apprentices above the state-mandated minimum ratio required in the Labor Code section 1777.5.

d. Apprenticeship utilization provisions that commit all parties to hiring and retaining a certain percentage of state-registered apprentices that have completed the Multi-Craft Core pre-apprenticeship training curriculum referenced in the Unemployment Insurance Code section 14005(t).

Conclusions

Based on the foregoing certifications, staff concludes the record contains substantial evidence to support a proposed finding of compliance with Public Resources Code sections 25545.3.3 and 25545.3.5. In addition, to comport with sections 25545.3.3 and 25545.3.5, staff proposes Condition of Certification (COC) **LABOR-1** requiring compliance with the labor requirements as set forth in this finding.

LABOR-1 The project owner shall implement the construction labor requirements of Public Resources Code sections 25545.3.3 and 25545.3.5.

Verification: Upon request by the Compliance Project Manager (CPM), the project owner shall provide documentation evidencing compliance with the requirements of Public Resources Code sections 25545.3.3 and 25545.3.5.

10.3 Identification of Whether Site is Located at a Prohibited Area

Summary of Requirements

The Opt-In applicant must identify whether the project is on a prohibited site as identified in Public Resources Code section 25527 or on a site designated by the California Coastal Commission under Public Resources Code section 30413(b) or on a site designated by the San Francisco Bay Conservation and Development Commission under Government Code section 66645(b). For projects on such a site, the Opt-In application shall include documentation of the approval of the public agency having ownership or control of the land.[7]

7 Cal. Code Regs., tit. 20, § 1877(e)

Proposed Findings of Fact

Based on the information provided in the application, and additional evidence and information as described below and contained in the record of this proceeding, staff concludes the following facts are supported by substantial evidence in the record:

- As part of its application, the applicant has identified that the project is in eastern Alameda County. The project site is not on a prohibited site identified in Public Resources Code section 25527, which includes a state, regional, County, or city park; wilderness, scenic, or natural reserve, area for wildlife protection, recreation, historic preservation; or natural preservation area. Similarly, consistent with Public Resources Code section 25527, there are no estuaries in an essentially natural and undeveloped state on the project site.
- The project site is not in an area designated by the California Coastal Commission under Public Resources Code section 30413(b).
- The project is not on a site designated by the San Francisco Bay Conservation and Development Commission as identified in Public Resources Code section 66645(b).

Conclusions

Based on the location of the project, staff has concluded that the site is not within a prohibited site as identified in Public Resources Code section 25527 or on a site designated by the California Coastal Commission under Public Resources Code section 30413(b) or on a site designated by the San Francisco Bay Conservation and Development Commission under Government Code section 66645(b). Staff recommends the CEC may adopt this proposed finding and conclusion as it is supported by substantial evidence in the record.

10.4 Net Positive Economic Benefit to the Local Government

Summary of Requirements

Public Resource Code section 25545.9(a) states:

> *"The commission shall not certify a site and related facility under this chapter unless the commission finds that the construction or operation of the facility will have an overall net positive economic benefit to the local government that would have had permitting authority over the site and related facility."*

Economic benefits may include, but are not limited to, employment growth, housing development, infrastructure and environmental improvements, assistance to public schools and education, assistance to public safety agencies and departments, and property taxes and sales and use tax revenues.[8]

8 Cal. Code Regs., tit. 20 § 1879(a)(7); Pub. Resources Code § 25545.9

Under Public Resource Code section 25545.9(b), there is a rebuttable presumption that the construction or operation of the facility will have an overall net positive economic benefit to Alameda County. Staff also reviewed and analyzed the applicant's confidential socioeconomics report and data request responses (TN 259076, TN 262323, TN 265609), and calculated a net positive economic value to Alameda County. Staff is unaware of any information in the record that rebuts the presumption and thus staff recommends the CEC find the project results in an overall net positive economic impact to Alameda County.

10.5 Legally Binding Enforceable Agreement(s) for Community Benefits of the Project

Summary of Requirements

Public Resources Code section 25545.10(a) states that the CEC shall not certify a site and related facility unless the CEC finds that the applicant has entered into one or more legally binding and enforceable agreements with, or that benefit, a coalition of one or more community-based organizations, such as workforce development and training organizations, labor unions, social justice advocates, local governmental entities, California Native American tribes, or other organizations that represent community interests, where there is mutual benefit to the parties to the agreement.[9]

The topics and specific terms in the community benefits agreements may vary and may include workforce development, job quality, and job access provisions that include, but are not limited to, any of the following[10]:

1. Terms of employment, such as wages and benefits, employment status, workplace health and safety, scheduling, and career advancement opportunities.
2. Worker recruitment, screening, and hiring strategies and practices, targeted hiring planning and execution, investment in workforce training and education, and worker voice and representation in decision making affecting employment and training.
3. Establishing a high road training partnership, as defined in Section 14005 of the Unemployment Insurance Code.

The topics and specific terms in the community benefits agreement may also include, but not be limited to, funding for or providing specific community improvements or amenities such as park and playground equipment, urban greening, enhanced safety crossings, paving roads and bike paths, and annual contributions to a nonprofit or community-based organization that awards grants to organizations delivering community-based services and amenities (Pub. Resources Code § 25545.10(b)).

9 Pub. Resources Code, § 25545.10(a)
10 Id.

The topics and specific terms in agreements with California Native American tribes may include, but not be limited to, cultural preservation and revitalization programs, joint management and stewardship agreements, open-space preservation agreements, repatriation and reparations agreements, and other compensatory mitigation programs (Pub. Resources Code § 25545.10(c)).

Proposed Findings of Fact

Based on the information provided in the application, and additional evidence and information as described below and contained in the record of this proceeding, staff recommends the CEC make the following findings and conclusions, upon the applicant providing executed agreements consistent with Public Resources Code section 25524.10, that:

1. Tri-Valley Haven for Women, an organization that provides services and other forms of assistance to survivors of sexual assault, victims of domestic violence, and homeless individuals and families, is a qualified community-based organization under Public Resources Code section 25545.10(a).
2. Livermore Valley Education Foundation, which supports educational programs in the Livermore area by providing grants, awards, and scholarships to students, programs and organizations associated with the Livermore public school system, is a qualified community-based organization under Public Resources Code section 25545.10(a).

Conclusions

Based on the foregoing proposed findings, staff concludes upon executing an agreement with one or more of the identified entities, consistent with Public Resources Code section 25545.10, the applicant will have met this requirement and therefore, staff will be able to recommend the CEC adopt proposed findings and conclusions consistent with staff's recommendation based on the identified evidence in the administrative record.

10.6 Identification of Public Agencies that Received Notice of the Application

Summary of Requirements

Consistent with Public Resources Code sections 25519 and 25545.8, CEC staff notified the following agencies of the Opt-In application: Alameda County (various departments), California Department of Fish and Wildlife, Region 3-Bay Delta, Fairfield, Department of Toxic Substances Control, Central Valley Regional Water Quality Control Board, Region 5, California Public Utilities Commission, California Attorney General, California Office of Emergency Services, Native American Heritage Commission, Governor's Office of Land Use and Climate Innovation, U.S. Army Corps of Engineers, California State Parks and Recreation, and U.S. Fish and Wildlife Service.

Additional agencies notified include, Airport Land Use Commission, Bay Area Air Quality Management District, California Office of Historic Preservation, California Independent System Operator (California ISO), California Division of Occupational Safety and Health (Cal OSHA) District Office (Bay Area), East Bay Municipal Utility District, U.S. Environmental Protection Agency (EPA), California Department of Forestry and Fire Protection (CAL FIRE), California Department of Transportation (Cal Trans) District 4, California Air Resources Board (CARB), Central Valley Flood Protection Board, Department of Conservation, Delta Protection Commission, Delta Stewardship Council, Department of General Services, California Highway Patrol, California Natural Resources Agency (CNRA), California Department of Resources Recycling and Recovery (CalRecycle), State Lands Commission, State Water Resources Control Board (SWRCB), District 4 and Division of Drinking Water, Division of Water Quality, Division of Water Rights, Department of Water Resources.

10.7 Environmental Leadership Development Project Requirements

Summary of Requirements

An Opt-In application is deemed an environmental leadership development project certified by the Governor and eligible for streamlined procedures,[11] if the CEC verifies that the project meets the conditions under Public Resources Code section 21183 and mitigates greenhouse gas (GHG) impacts as required under Public Resources Code section 21183.6.[12]

Under Public Resources Code section 21183 the following conditions must be met:

1. The Project will result in a minimum investment of $100,000,000 in California upon completion of construction.
2. The project creates high-wage, highly skilled jobs that pay prevailing wages and living wages, provides construction jobs and permanent jobs for Californians, helps reduce unemployment, and promotes apprenticeship training as defined in Public Resources Code section 21183.5.
3. For environmental leadership development projects[13], the project does not result in any net additional emission of GHG, including GHG emissions from employee transportation, as determined by compliance with Public Resources Code section 21183.6.
4. The applicant demonstrates compliance with the requirements of recycling commercial solid waste and organic solid waste as required under Chapter 12.8

11 Pub. Resources Code, §§ 21178 et seq.
12 Cal. Code Regs., tit. 20, § 1877(h); Pub. Resources Code § 25545.13
13 Pub. Resources Code, § 21180(1), (2), and (3)

(commencing with Section 42649) and Chapter 12.9 (commencing with Section 42649.8) of Part 3 of Division 30, as applicable.

5. The applicant has entered into an agreement that all mitigation measures required to certify the project must be conditions of approval of the project. For environmental mitigation measures, the applicant agrees that those measures will be monitored and enforced by the lead agency for the life of the obligation.
6. The applicant agrees to pay the costs of the trial court and the court of appeal in hearing and deciding any case challenging a lead agency's action on the certified project.
7. The applicant agrees to pay the costs of preparing the record of proceedings for the project concurrent with review and consideration of the project under this division.
8. The applicant demonstrates that the record of proceedings is being prepared in accordance with Public Resources Code section 21186.

Under Public Resources Code section 21183.6, quantification and mitigation of impacts of environmental leadership development projects[14] from the impacts of GHG must be as follows:

1. The environmental baseline for GHG emissions be based on the physical environmental conditions in the vicinity of the project site at the time the application is submitted.[15]
2. The mitigation of the impacts resulting from the emissions of GHG must be achieved in accordance with the following priority:
    a. Direct emissions reductions from the project that also reduce emissions of criteria air pollutants or toxic air contaminants through implementation of project features, project design, or other measures, including, but not limited to, energy efficiency, installation of renewable energy electricity generation, and reductions in vehicle miles traveled.
    b. The remaining unmitigated impacts shall be mitigated by direct emissions reductions that also reduce emissions of criteria air pollutants or toxic air contaminants within the same air pollution control district or air quality management district in which the project is located.
    c. The remaining unmitigated impacts shall be mitigated through the use of offsets that originate within the same air pollution control district or air quality management district in which the project is located, consistent with the Health and Safety Code[16], including, the requirement that the offsets be real, permanent, quantifiable, verifiable, and enforceable, and shall be undertaken

14 Id.
15 Cal. Code Regs., tit. 14, § 15125
16 Pub. Resources Code, § 38500

from sources in the community in which the project is located or in adjacent communities.

d. The remaining unmitigated impacts shall be mitigated using of offsets that originate from sources that provide a specific, quantifiable, and direct environmental and public health benefit to the region in which the project is located.

Proposed Findings of Fact

Based on the information provided in the application, and additional evidence and information as described below and contained in the record of this proceeding, staff recommends the CEC make the following findings and conclusions because the record contains substantial evidence for their support.

Public Resources Code Section 21183 Required Proposed Findings

1. The project will result in a minimum investment of $100,000,000 in California upon completion of construction.
2. The applicant has identified that construction of the project would generate employment. Project construction is estimated to directly generate an average of 24 full—time construction workers over the 18-month construction schedule, with an estimated peak of approximately 127 workers on-site during peak construction months. (Dudek 2025c).
    a. The applicant has certified that these workers will be paid prevailing wages and living wages as evident by their employment agreements.
    b. Operation of the Project would employ a full-time workforce of 18 employees and will therefore provide permanent jobs for Californians. The applicant certifies that it plans to promote apprenticeship training.
    c. The proposed project is an energy storage facility and is therefore a qualified environmental leadership development project under Public Resources Code sections 25545.13 and 21183.
3. As described in the Air Quality and Greenhouse Gas Emissions sections, by displacing energy from natural gas powerplants, the project would not result in any net additional emissions of GHG. Therefore, the project complies with Public Resources Code section 21183.6.
4. In order to comply with recycling commercial solid waste and organic solid waste requirements under Public Resources Code sections 42649 and 42649.8, as applicable the applicant would ensure that recycling of commercial and organic waste are stipulations in the construction contractor's contract. Construction materials would be sorted on-site throughout construction and transported to appropriate waste management facilities. Recyclable materials would be separated from non- recyclable items and stored until they could be transported to a designated recycling facility. Recycling would be in accordance with applicable

California state requirements. Wooden construction waste (such as wood from wood pallets) would be sold, recycled, or chipped and composted. Other compostable materials, such as vegetation, may also be composted off-site. Non-hazardous construction materials that cannot be reused or recycled would likely be disposed of at a Class II/III landfill. Hazardous waste and electronic waste would not be placed in a landfill but rather would be stored onsite for less than 90 days and would be transported to a treatment, storage, and disposal facility by a licensed hazardous waste transporter. All contractors and workers would be educated about waste sorting, appropriate recycling storage areas, and how to reduce landfill waste. The potential waste streams that would be generated during construction and operation of the Project, the waste classifications, and disposal facilities in the vicinity of the Project are detailed in Section 5.11 Waste Management of the Opt-In Application package. Furthermore, the Project must comply with the California Green Building Standards Code, also known as CALGreen, which includes mandatory recycling. Code Section 5.408 requires that 65 percent of the nonhazardous waste be recycled or salvaged for reuse. Code Section 5.408.3 (excavated soil and land clearing debris) requires that 100 percent of trees, stumps, rocks, and associated vegetation and soils resulting from land clearing shall be reused or recycled.

5. Upon certification, the applicant will be subject to all mitigation measures in the form of conditions of certification. Those conditions will be fully enforceable by the CEC or another agency designated by the CEC. The CEC will monitor and enforce the mitigation measures for the lifetime of the project through its statutory authority to issue civil penalties for violations of conditions of certification.
6. The applicant has agreed to pay the potential costs of the trial court and the court of appeal in hearing and deciding any case challenging the CEC's action on the certified project.
7. The applicant has agreed to pay the costs of preparing the record of proceedings for the project concurrent with review and consideration of the project.
8. The preparation and certification of the record of proceedings for this project complies with Public Resources Code section 21186.

Public Resources Code Section 21183.6 Required Proposed Findings

1. The application demonstrates that the environmental baseline for greenhouse gas emissions was based on the physical environmental conditions in the vicinity of the project site when the application was submitted on November 7, 2023.
2. This document requires any and all mitigation measures resulting from the emissions of greenhouse gases to be in accordance with the priorities outlined in Public Resources Code section 21183.6.

Conclusions

Staff has verified and concluded that the record contains evidence to support a finding that the project meets the requirements of, and may be deemed, an environmental

leadership development project under Public Resources Code section 21183. In addition, staff proposes COC **WASTE-1** and recommends Mitigation Measure **WASTE-1** (for the portion of the gen-tie transmission line to be built and operated by PG&E) requiring compliance with solid waste management mitigation measures required to certify the project, as set forth in this proposed finding.

Staff has also verified and concluded that the record contains evidence to support a finding that the impacts of greenhouse gas emissions were quantified and mitigated in a manner consistent with Public Resources Code section 21183.6, and therefore staff recommends that the CEC may adopt this proposed finding and conclusion.

10.8 Potential for Restoring the Site if Application Rejected

Summary of Requirements

As part of the Opt-In application, the applicant must demonstrate the potential for restoring the site as necessary to protect the environment if the CEC denies approval of the application.[17]

Proposed Findings of Fact

Based on the information provided in the application, and additional evidence and information as described below and contained in the record of this proceeding, staff proposes the following findings:

1. Project site preparation and construction would not begin prior to application approval and thus restoration work would not be necessary.

Conclusions

Staff concludes that the applicant has sufficiently evaluated and identified the potential for restoring the project site as required under California Code of Regulations, title 20, section 1879(a)(3) and therefore staff recommends that the CEC may adopt this proposed finding and conclusion.

10.9 Minimum Standards of Efficiency

Summary of Requirements

The applicant must demonstrate compliance with the recommended minimum standards of efficiency for the operation of a new facility at a particular site that are technically and economically feasible, as required under Public Resources Code section 25402(d). The applicant must certify that standards recommended by the CEC have

17 Cal. Code Regs., tit. 20, § 1879(a)(3); Pub. Resources Code, § 25523(e)

been considered, which certification shall include a statement specifying the extent to which conformance with the recommended standards will be achieved.[18]

Proposed Findings of Fact

Based on the information provided in the application, and additional evidence and information as described below and contained in the record of this proceeding, staff recommends the CEC make the following findings and conclusions because the record contains substantial evidence for their support:

The CEC has not recommended minimum standards of efficiency for the proposed project. The applicant is not required to demonstrate compliance with minimum efficiency standards, as no minimum efficiency standards have been applied to this project.

Conclusions

Based on the foregoing proposed findings, the applicant is not required to demonstrate compliance with minimum efficiency standards, as no efficiency standards apply to this project. Therefore, staff proposes the CEC may adopt this finding and conclusion as it is supported by substantial evidence in the record.

10.10 References

AMLGMN 2024ff – Allen Matkins Leck Gamble Mallory & Nats (TN 258039). Labor Certification. Docketed July 26, 2024. Accessed online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-OPT-04

18 Cal. Code Regs., tit. 20 § 1879(a)(1); Pub. Resources Code, § 25523(d)

Section 11

Project's Inconsistency with State and Local Laws and Staff's CEQA Override Findings and Recommendation

11 Project's Inconsistency with State and Local Laws and Staff's CEQA Override Findings and Recommendation

11.1 Summary of Staff's Recommendations

When conducting the environmental impact assessment, CEC staff evaluated the potential for the project to impact agriculture and forestry resources in its Land Use analysis (see **Section 5.8, Land Use, Agriculture, and Forestry Resources**, in this SA. CEC staff concluded that the project would have less than significant impacts with respect to land use, agriculture, and forestry. CEC staff also concluded that the project is consistent with the site's agricultural zoning and mostly consistent with the Williamson Act regulations contained in Alameda County's Uniform Rules and Procedures Governing Agricultural Preserves and Williamson Act Contracts. However, staff determined that the project conflicts with one of the Williamson Act rules (10/10 Rule), which is a local land use rule. Because the project site is classified by the Department of Conservation (DOC) as non-prime Grazing Land, which is not an Important Farmland category, staff determined that this inconsistency is not an environmental impact (see **Section 5.8, Land Use, Agriculture, and Forestry Resources**, in this SA) and does not require mitigation measures under CEQA. Further, the CEC can issue a certification for the construction and operation of a project that is inconsistent with a Williamson Act contract under the authority set forth in Public Resources Code section 25545.1(b)(1).

For impacts on visual resources, CEC staff evaluated the potential for the project to substantially degrade the existing visual character or quality of public views of the site and its surroundings. Staff concluded that this impact remains significant even after implementation of COCs (see **Section 5.15, Visual Resources**, in this SA). While CEC staff concludes there is a significant and unavoidable impact to visual resources, staff concludes there is substantial and compelling evidence in the record to support a CEC decision to approve the project by issuing a statement of overriding considerations.

As set forth in **Section 3, Project Description, Section 4.1, Facility Design, Section 4.3, Transmission System Engineering, Section 5.1, Air Quality, Section 5.3, Climate Change and Greenhouse Gas Emissions, Section 5.11, Socioeconomics,** and **Section 7, Public Benefits**, the project is in the public interest as it provides regional economic benefits, construction and engineering jobs, grid reliability benefits, support for California's renewable energy and GHG emission reduction goals, and displacement of fossil fuel generation and corresponding air pollution. Based on these benefits supported by substantial evidence in the record, staff recommends the CEC certify the project and make the findings pursuant to sections 15091 and 15093 of the CEQA Guidelines.

CEC staff's recommendations are based only on the unique facts and circumstances in this record and are not intended to be generally applicable to pending or future recommendations regarding other applications for siting certifications made to the CEC.

11.2 CEC's Authority to Approve Projects that are Inconsistent with Local and State Laws

While the default is that a project will comply with all applicable laws, the CEC can certify a project and site, authorizing the construction and operation of the project, despite being inconsistent with local or state law. The most common conflict relates to land use and zoning laws that can frustrate the state's ability to ensure a reliable and safe, local and statewide energy system. Public Resources Code section 25545.1(b)(1) states:

> *(b)(1) … the issuance of a certificate by the commission for a site and related facility pursuant to this chapter shall be in lieu of any permit, certificate, or similar document required by any state, local, or regional agency, or federal agency to the extent permitted by federal law, for the use of the site and related facilities, and shall supersede any applicable statute, ordinance, or regulation of any state, local, or regional agency, or federal agency to the extent permitted by federal law. (Pub. Resources Code, § 25545.1.)*

While the CEC is not required to make any specific findings to exercise this authority for Opt-In projects, Public Resources Code section 25901 provides that a decision by the CEC must be supported by substantial evidence in light of the whole record. As detailed in this SA and summarized in this section, there is ample evidence supporting a decision to certify the construction and operation of the project despite land use inconsistency.

11.3 Evidence in the Record Relevant to LORS Inconsistency

The project is inconsistent with Alameda County's 10/10 Rule, which restricts the size and scale of non-agricultural structures on Williamson Act contracted property in Alameda County. As detailed in **Section 5.8, Land Use, Agriculture and Forestry**, the 10/10 Rule states that compatible, non-agricultural uses that do not qualify as buildings shall be cumulatively restricted to no more than 10 percent of the contracted property, or 10 acres, whichever is less. The proposed project's size exceeds the County's 10/10 Rule on the main project parcel, which would house the BESS, and is therefore not consistent with Alameda County's 10/10 Rule which governs County Williamson Act contracts. This makes the project inconsistent with the Williamson Act contract and Williamson Act.

While CEC staff is recommending the CEC approve the project despite the project conflicting with the 10/10 Rule, CEC staff recommends that the project applicant work with the landowner to seek a Williamson Act contract modification, through a partial cancellation with Alameda County following the requirements set forth in Government Code section 51280 et seq. Such action can occur after project certification and would harmonize the Williamson Act contract with the future state of the project site including the certified project.

11.4 Approval of the Project is in the Public Interest

To support a robust record of substantial evidence on which the CEC can base a decision, staff has included information about the benefits of the project and how the project is

designed, sited, and will be operated in order to protect environmental quality and assure public health and safety and why approval of the project is in the public interest. As stated in **Section 3, Project Description, Section 4.1, Facility Design, Section 4.3, Transmission System Engineering, Section 5.1, Air Quality, Section 5.3, Climate Change and Greenhouse Gas Emissions**, and **Section 7, Public Benefits**, and described in more detail in the subsections below, development of the proposed battery energy storage facility is in the public interest because of the pressing need to address greenhouse gas (GHG) emissions and climate change by improving and transforming the energy system. In making this recommendation, CEC staff evaluated the competing interests of public safety, welfare, and environmental protection addressed by any inconsistent LORS against the broader and longer-term goals and policies related to the Warren-Alquist Act directives and implementing policies, including the purposes of the Opt-In Certification Program.

Stated Goals and Polices of the Warren-Alquist Act

Since its inception in 1975, the CEC has been charged with the mandate to ensure energy generation development for a reliable electricity supply to promote public health, safety and general welfare as well as ensure resource conservation and environmental protection. This dynamic of conservation and development is reflected in the CEC's formal name, State Energy Resources Conservation and Development Commission. (See, Public Resources Code §§ 25001, 25007, and 25104.) California is undergoing an historic transition away from a fossil fuel-based energy system encompassing both electricity generation and transportation to a renewable energy and carbon free resource-based system anchored by resources such as solar, wind, geothermal and other technologies supported by large amounts of energy storage.

California's interest in clean energy is well-established. In 2006, the Legislature enacted the California Global Warming Solutions Act of 2006, meant to reduce the statewide amount of greenhouse gas emissions in California. (Health & Saf. Code, § 38500 et seq.; Stats. 2006, ch. 488, p. 3419.) The Legislature made a finding that the Act was meant to counteract some of the harmful impacts caused by global warming, which included threats to the economy, public health, natural resources, and overall environment and detrimental effects on California industries, such as agriculture. (Health & Saf. Code, § 38501, subd. (a) and (b).)

To further the goal of reduced emissions, the Legislature passed the Renewables Portfolio Standard (RPS), which in part required load serving entities to reach a goal that 33 percent of their total retail energy sales be from renewable energy sources by the end of 2013. (Pub. Util. Code, § 399.15, subd. (b)(2)(B).)

In 2018, Senate Bill 100 was passed which among other things amended the Public Utilities Code accelerating the energy transition by requiring 50 percent of all retail sales of electricity be from renewable resources by December 31, 2026, 60 percent by December 31, 2030, and by December 31, 2045, 100 percent of all retail sales be from renewable and zero carbon sources. (See, Pub. Util. Code, §§ 399.15(b)(2)(B) and 454.53(a).) SB 100 also

requires the Energy Commission, Public Utilities Commission, and Air Resources Board to use programs under existing laws to achieve these clean electricity targets and issue a joint policy report on SB 100 by 2021 and every four years thereafter. (See, Pub. Util. Code, § 454.53(d).) The 2021 SB 100 report has several key findings including the need for bold action to decarbonize as, "Californians experienced the damaging effects of climate change as never before: a historic siege of wildfires and smoke, and a record-breaking heat wave. Scientists worldwide agree that without bolder mitigation measures, climate-related disasters will recur with increasing frequency and greater devastation." (2021 SB 100 Joint Agency Report, p.3.) A major finding in the report is that construction of clean electricity generation and storage facilities must be sustained at record-setting rates. (2021 SB 100 Joint Agency Report, pp. 17 and 22.) Specifically, the 2021 report estimated the following build-out by 2030 is required to meet the ultimate 2045 targets: The addition of 16.9 gigawatts (GW) of utility scale solar, 9.5 GW of battery storage, and 8.2 GW of terrestrial wind. On average, the state will need to build 6 GW of new solar, wind, and battery storage resources annually. (See, 2021 SB 100 Modeling Results, p.10)

While these numbers reflect information at the time of the report and are expected to change over time, the message is clear that a major buildout on all fronts will be necessary to add to the existing 20,000 megawatts (MW) plus of utility scale renewable energy on the transmission system. (https://www.caiso.com/todays-outlook/supply. See, for example, June 24, 2025, where renewable generation peaked at 1:55pm reaching 24,599 MW.) Thus, an important driver of reaching the SB 100, 2030 and 2045 targets is the rapid construction and operation of solar, wind and battery systems. Though completion of the project by itself will not fulfill the state's renewable energy goals, each additional renewable energy project helps the state advance toward meeting the requirements of the RPS.

Consumer Benefits

The substantial evidence in the record regarding local and statewide consumer benefits resulting from the project is another factor to be considered when evaluating whether the project is in the public interest. **Section 5.11, Socioeconomics, Section 7, Public Benefits, Section 8, Alternatives**, and **Section 10, Mandatory Opt-In Requirements** contain a detailed assessment of the local benefits to the region from temporary construction jobs, operational jobs, property and sales tax, and other local benefits directly or indirectly attributed to the project. The bulk of the consumer benefits identified relate to local temporary employment for the construction of the facility and local tax revenue associated with the project. The project's public benefits include economic benefits typical for an industrial project with a complex construction phase. These benefits include various types of construction jobs and associated payrolls, sales taxes, equipment rentals, and local spending related to the project and from its workers. Once construction is completed, the project would employ a minimal number of staff.

In addition to employment, local spending, and tax revenue from the project, the applicant will enter into one or more legally binding and enforceable agreements with, or that benefit, a coalition of one or more community-based organizations, such as workforce

development and training organizations, labor unions, social justice advocates, local governmental entities, California Native American tribes, or other organizations that represent community interests.

Environmental

As discussed in **Section 3, Project Description** the project's energy storage would contribute to meeting the State of California's clean energy policy objectives as described by the interim targets in Clean Energy, Jobs, and Affordability Act of 2022 (Senate Bill 1020, Laird, Chapter 361, Statute of 2022) that require renewable energy and zero-carbon resources to supply 90 percent of all retail electricity sales by 2035 and 95 percent of all retail electricity sales by 2040. The project's battery storage system would also contribute to meeting the state's 100 Percent Clean Energy Act of 2018 (Senate Bill 100, De León, Chapter 312, Statute of 2018) policy objectives of having California's electricity system be carbon free by 2045 by capturing and storing clean energy when generation is plentiful and dispatching energy for use when it is scarce.

The project location near a large existing utility switchyard provides additional environmental benefits because a short transmission line between the project and the switchyard minimizes both environmental impacts and energy loss during transmission.

Reliability

While the project would not directly generate renewable energy, the project would provide increased grid reliability that is necessary to facilitate renewable energy use. Reliability is an evaluation of the robustness of the state's electrical system, the grid, and the project's impact on that system. As discussed in **Section 3, Project Description, Section 4.3, Transmission System Engineering**, and **Section 7, Public Benefits**, BESS facilities can assist grid operators in more effectively integrating intermittent renewable resources into the statewide grid. The project would include a battery storage system capable of storing up to 400 MW of electricity for eight hours (up to 3,200 megawatt-hours). Layering energy storage systems into the energy grid improves grid reliability and makes it more resilient to disturbances and peaks in energy demand. Overall, the state would benefit from the project's reliability contributing to the diversity of renewable generation by reducing congestion on the transmission system, mitigating curtailment of clean energy resources, and supporting a more balanced and stable supply profile. In addition, the state's electrical grid reliability would increase with the project providing electricity during increased load demand. BESS facilities can also provide ancillary services to the grid, such as voltage support.

Stated Goals and Polices of the Williamson Act

The California Land Conservation Act of 1965 (Williamson Act; Government Code § 51200 et seq.) prevents farmland from conversion to other uses by offering owners of agricultural land a property tax incentive to maintain their land in agricultural use. The program is implemented at the county level and allows agricultural landowners to voluntarily and contractually agree to retain land in agricultural or open space uses for a period of at least

10 years and, in return, to pay reduced property taxes. The purposes of the Williamson Act are to preserve agricultural land to maintain the agricultural economy of the state, to discourage premature and unnecessary conversion of agricultural land to urban uses, to discourage discontinuous urban development, and to preserve open space and aesthetic values of agricultural lands (Gov. Code, § 51220.) To further preserve agricultural lands, the County's Uniform Rules and Procedures Governing Agricultural Preserves and Williamson Act Contracts limit the scale of compatible development on Williamson Act contracted properties to maintain agriculture as the primary use of the land (10/10 Rule).

The Public Interest in Use of Non-Prime Farmland

The project site does not contain Important Farmlands, which are classified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The project site and surrounding lands are designated by the DOC as Grazing Land, which is not an Important Farmland category.

As discussed in **Section 3, Project Description**, and **Section 5.8, Land Use, Agriculture, and Forestry Resources**, grazing would continue on the land even with the project approval and some lands adjacent to the project site would continue to allow cattle grazing under Williamson Act contract. The project is in close proximity to existing electrical infrastructure and the Tesla Substation, and there are few single-family residences owned by the same landowner leasing the lands for the project.

Water Availability and Site Constraints

As discussed in **Section 3, Project Description, Section 5.8, Land Use, Agriculture, and Forestry Resources**, and **Section 5.16 Water Resources**, the land in question has significant site-based constraints to viable agricultural operations. The project site is classified by the DOC as Grazing Land, a non-prime agricultural land category. This means that the soil is lacking the best characteristics for growing crops. The United States Department of Agriculture (USDA) soil classification for the project site is Class IV soils, which are soils that have very severe limitations that restrict the choice of plants or require very careful management, or both. There is also a lack of necessary infrastructure to deliver surface water to the property and the current use on the project site is cattle ranching. For example, water is proposed to be hauled to the project by a licensed third-party vendor.

Compatibility with Surrounding Agriculture

The project would not significantly compromise the long-term agricultural capability of the other contracted lands in agricultural preserves. As discussed in **Section 5.8, Land Use, Agriculture, and Forestry Resources**, construction and operation of the project would not affect the uses of adjacent properties under Williamson Act land use contracts or degrade the rural characteristics of the area around the Tesla Substation. The BESS facility would not produce excessive noise, hazards, or fire risk. (See **Section 5.9, Noise and Vibration**, and **Section 5.7, Hazards, Hazardous Materials/Waste, and**

Wildfire.) The project would be compatible with the surrounding agricultural uses and is not expected to affect the agricultural use of the adjacent parcels.

Implementation of the project would not be growth-inducing and attract additional non-agricultural development to adjacent land (i.e., the battery energy storage facility would not induce residential or commercial growth in the area). The project would be located in proximity to the Tesla Substation and other energy infrastructure. The development of a battery energy storage facility would provide for a more contiguous pattern of renewable energy development.

The percentage of land proposed for projects represents a tiny percentage of the remaining acreage under Williamson Act contracts in California and does not present a threat to short-term or long-term agricultural production in California. The total acreage of contracted Williamson Act land in California was approximately 15.3 million acres in 2023 (DOC 2024). According to the DOC's most recent Williamson Act data set, in 2023, approximately 143,934.6 acres of agricultural land was under some form of Williamson Act contract (including nonprime, prime and nonrenewal) with Alameda County (DOC 2026). The approximately 58-acre footprint of permanent disturbance for the BESS facilities only represents approximately .04 percent of the contracted area in Alameda County.

Conclusions

In considering the public interest in the project and environmental purpose of providing energy storage that assists the state in achieving its energy storage mandates and contributing to the state's electricity grid reliability, CEC staff recommends the CEC find the project should be approved even though the proposed project is inconsistent with the current Williamson Act contract.

This recommendation is based on substantial evidence and comes after an independent analysis of project information contained in the record, consultation with experts in the field, and independent research as described in each of the technical sections. The particular facts surrounding this project support the certification of the project and site as the benefits to the public interest of the project outweigh the minimal loss of grazing land on the project site.

11.5 Recommended Determination Regarding CEQA Override Considerations

While CEC staff has identified significant and unmitigable impacts on visual resources, CEC staff recommends project approval because substantial evidence supports a finding by the CEC of overriding considerations.

11.6 Discussion of Significant Environmental Impacts That Cannot be Avoided or Mitigated and Project Benefits

California Code of Regulations, title 14, section 15091 provides that the CEC cannot approve a project with one or more significant environmental effects unless the CEC makes

certain findings based on substantial evidence in the record. To approve a project that has one or more significant unavoidable environmental effects, the CEC must find that specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the environmental analysis.

In addition, California Code of Regulations, title 14, section 15093, authorizes an agency, based on substantial evidence to balance, as applicable, the economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of a proposed project against its unavoidable environmental risks when determining whether to approve the project. If the specific economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of a proposed project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered acceptable.

Taken together, the regulations require an agency to not approve a project with significant and unavoidable impacts unless, after careful consideration, the agency identifies other benefits of the project that outweigh the environmental damage.

As detailed in **Section 5.15, Visual Resources**, significant and unavoidable impacts have been identified in the area of visual resources. Specifically, CEC staff concludes that, given the existing physical landscape, the project would substantially degrade the existing visual character or quality of public views of the site and its surroundings from three applicant-submitted key observation points (KOP). The impact on visual resources for the three KOPs remains significant even after implementation of the recommended COCs.

As noted in the discussion on the project's inconsistency with the current Williamson Act contract, substantial evidence as set forth in the SA demonstrates the project provides a variety of economic and environmental benefits and these benefits outweigh the impact on visual resources for certain KOPs. On the economic side, benefits include increases in property tax revenue, employment opportunities, and increased spending in the area due to the development and operation of the project. On the environmental side, the project will help California meet its aggressive clean energy and greenhouse gas emission reduction goals. The project will also support grid reliability and presents an efficient operation by being located near a major switchyard.

11.7 Findings of Fact

Based on substantial evidence, CEC staff makes the following findings:

1. Impacts to visual resources caused by the Potentia-Viridi Battery Energy Storage System will be significant and unavoidable at three key observation points.
2. No feasible mitigation measures were identified in the SA that could mitigate or avoid all of the project's significant effects on visual resources.
3. The Potentia-Viridi Battery Energy Storage System would provide the following benefits:

a. Assists California load serving entities in meeting obligations under California's Renewable Portfolio Standard Program and Senate Bills 100 and 1020, which require renewable energy sources and zero-carbon resources to supply 60 percent of all retail sales of electricity to California end-use customers by December 31, 2030, 90 percent of all retail sales of electricity to California end-use customers by December 31, 2035, 95 percent of all retail sales of electricity to California end-use customers by December 31, 2040, and 100 percent of all retail sales of electricity to California end-use customers by December 31, 2045.

b. Assists California utilities in meeting obligations under the CPUC's Mid-Term Reliability Procurement Requirements

c. Provides a new source of energy storage that assists the state in achieving its energy storage mandates.

d. Complements renewable generation by storing electricity during periods of low demand or high renewable generation and discharging it during peak hours when the system is most stressed.

e. Contributes to the state's electrical grid reliability by providing renewable electricity during increased load demand.

f. Uses the existing unused transmission capacity that provides approximately 300 MW of capacity.

g. Minimizes the length of transmission lines by being located near an existing utility switchyard reducing environmental disturbance and energy line loss.

h. Supports the Alameda County economy by investing in the local community, creating local construction jobs, and increasing tax and fee revenue to the County.

i. Provides the following economic benefits to Alameda County:

   i. Project construction would last 18 months and require an average of 97 workers per month and have a peak workforce of 127 workers per month.

   ii. The project operations would employ 18 full-time employees, includes 1 plant manager, 2 technicians for plant operations, and 15 workers for BESS equipment and machinery maintenance, over the project's estimated 35-year operational life.

   iii. On a net present value basis, the proposed project would generate more than $440 million of net positive economic value to Alameda County over the project's estimated 35-year operational life.[1] This estimate of economic benefits does not include potential costs to Alameda County (e.g., for public services).

4. There are no feasible alternatives to the Potentia-Viridi Battery Energy Storage System that would avoid or substantially lessen the significant impacts to visual resources and achieve most of the benefits and objectives of the project.

1 Staff reviewed and analyzed the applicant's confidential socioeconomics report and data request responses (TN 259076, TN 262323, TN 265609), and calculated the net positive economic value to Alameda County.

11.8 Recommended Determination Regarding CEQA Override Considerations

Based on substantial evidence and detailed analysis, CEC staff recommends the CEC find that on balance, the project's significant impacts to visual resources are outweighed by the project's benefits.

11.9 References

2021 SB 100 Joint Agency Report – 2021 SB 100 Joint Agency Report Summary Achieving 100% Clean Electricity in California, Docket No. 19-SB-100 (March 2021) (TN237167), p. 3. Accessed online at: 2021 SB 100 Joint Agency Report, Achieving 100 Percent Clean Electricity in California: An Initial Assessment | California Energy Commission

2021 SB 100 Modeling Results – Modeling Results and Build Rates Summary for 2021, 2021 SB 100 Joint Agency Report Summary, Achieving 100% Clean Electricity in California, An Initial Assessment, 19-SB-100 (TN239588) p. 10. Accessed online at: https://efiling.energy.ca.gov/GetDocument.aspx?tn=239588&DocumentContentId=730 21.

DOC 2024 – State of California Department of Conservation. Williamson Act Statistics 2022-2023. Accessed on January 9, 2026 online at: Williamson Act Statistics 2022-2023.

DOC 2026 – State of California Department of Conservation. Williamson Act dataset. Accessed on January 13, 2026 online at: California Williamson Act Enrollment 2024 - Overview.

Section 12

Authors and Reviewers

12 Authors and Reviewers

Lead Agency—California Energy Commission

Section Authors

Staff	Section(s)
Andrea Koch	Land Use, Agriculture, and Forestry
Ardalan Sofi	Facility Reliability, Efficiency and Energy Resources
Bill Burton, Ashlee Takushi, Kayla Gonzalez	Transportation
William Larson, Cameron Travis	Cultural and Tribal Cultural Resources
Paul Miller, Katherine Lewis	Hazards, Hazardous Materials/Waste, and Wildfire
Daniel Jones, Paul Miller	Worker Safety and Fire Protection
Ellen LeFevre	Environmental Justice, Socioeconomics
Erika Giorgi, Barbara Borkowski	Mandatory Opt-In Requirements, Overrides WIP
Jacob Locsin	Facility Design, Noise and Vibration
James Ackerman	Solid Waste Management, Water Resources
Jeanine Hinde	Alternatives
John Heiser	Compliance Conditions and Compliance Monitoring Plan
Julie Myrah	Biological Resources
Kaycee Chang	Public Benefits
Kevin DeLano	Geology, Paleontology, and Minerals
Michael Clayton	Visual Resources
Sudath Edirisuriya	Transmission Line Safety and Nuisance, Transmission System Engineering
Tao Jiang, Yifan Ding	Air Quality, Public Health
Winston Potts	Climate Change and Greenhouse Gas Emissions, Public Health

Supervision and Management

Staff	Role
Regina Galer	Director, Siting, Transmission, and Environmental Protection (STEP) Division
Dian Vorters	Deputy Director, STEP Division
Eric Knight	Siting and Environmental Branch Manager
Brett Fooks	Safety and Reliability Branch Manager
Joseph Hughes	Engineering Branch Manager
Ann Crisp	Biological Resources Unit Supervisor

Staff	Role
Kaycee Chang	CEQA Project Management Unit Supervisor
Eric Knight	(Acting) Land Use and Public Services Unit Supervisor
Ken Salyphone	Inspections and Investigations Unit Supervisor
Gabriel Roark	Cultural Resources Unit Supervisor
Hurshbir Shahi	Compliance and Enforcement Unit Supervisor
Wenjun Qian	Air Quality and Public Health Unit Supervisor
Shahab Khoshmashrab	Facility Design Unit Supervisor
Abdel-Karim Abulaban	Geosciences Unit Supervisor

Project Management/Legal

Staff	Role
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Susan Cochran	Staff Attorney
Mariah Ponce	Staff Attorney
Barbara Borkowski	Staff Attorney

Project Assistant

Staff	Role
Marichka Haws	Project Assistant
Lorenzo Cano	Student Assistant
Yiming Luo	Student Assistant

Appendix A

Cumulative Scenario

Appendix A: Cumulative Impacts

Preparation of the cumulative impact analysis is required under the California Environmental Quality Act (CEQA). In the CEQA Guidelines, "a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts" (Cal. Code Regs., tit. 14, § 15130(a)(1)). Cumulative impacts must be addressed if the incremental effect of a project, combined with the effects of other projects, is "cumulatively considerable," and therefore potentially significant (Cal. Code Regs., tit. 14, § 15130(a)(2)). Such incremental effects are to be "viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (Cal. Code Regs., tit. 14, § 15164(b)(1)). Together, these projects comprise the cumulative scenario which forms the basis of the cumulative impact analysis.

The discussion of cumulative impacts must reflect the severity of the impacts, as well as the likelihood of their occurrence, yet the discussion need not be as detailed as the discussion of environmental impacts attributable to the project alone. When the combined cumulative impact associated with the project's incremental effect and the effects of other projects is not significant, the EIR shall briefly indicate why the cumulative impact is not significant and is not discussed in further detail in the EIR. (Cal. Code Regs., tit. 14, § 15130(a)(2)).

The cumulative impact discussion is intended to be guided by the standards of practicality and reasonableness (Cal. Code Regs., tit. 14, § 15130(b)). CEQA Guidelines sections applicable to a cumulative impact analysis state the following:

- CEQA Guidelines Section 15355: "Cumulative impacts" refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.
  - (a) The individual effects may be changes resulting from a single project or a number of separate projects.
  - (b) The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.
- CEQA Guidelines Section 15130 (a)(1): As defined in Section 15355, a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. An EIR should not discuss impacts which do not result in part from the project evaluated in the EIR.

- CEQA Guidelines Section 15064(h)(4): The mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable.

Cumulative Projects Scenario

Under CEQA, there are two commonly used methodologies for establishing the cumulative impact scenario—the "list approach" and the "projections approach." The list approach uses a "list of past, present, and probable future projects producing related or cumulative impacts" (Cal. Code Regs., tit. 14, § 15130(b)(1)(A)). The projections approach uses a "summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect" (Cal. Code Regs., tit. 14, § 15130(b)(1)(B)).

This staff assessment utilizes the list approach to provide an understanding and context for analyzing the potential cumulative effects related to the proposed project. The project list supplements the cumulative scenario with information on specific projects that are proposed or under construction in the surrounding communities.

The cumulative projects list provided by the Alameda County and San Joaquin County Land Use Services Department contained past, present, or probable future projects located near the proposed project that would potentially be constructed within one year before or after the proposed project. A list of these projects is shown in **Table A-1** along with an identification number, a brief description, distance from the project site, and status. Although **Table A-1** lists only those cumulative projects located near the proposed project site, the cumulative impacts analysis for each resource area included in this document considers a geographic area appropriate for each technical area.

The analysis of cumulative effects considers several variables including geographic (spatial) limits, time (temporal) limits, and the characteristics of the resource being evaluated. For each resource area, this staff assessment evaluates the cumulative impacts as follows:

- Defines the geographic scope of cumulative impact analysis for each discipline, based on the likely geographic extent in which proposed project impacts could combine with those of other projects.
- Evaluates the effects of the proposed project in combination with past and present (existing) projects within the geographic scope defined for each discipline.
- Evaluates the effects of the proposed project with foreseeable future projects that occur within the geographic scope defined for each discipline.

Staff's cumulative impact analysis considers environmental effects associated with those projects identified in **Table A-1** in conjunction with the impacts identified for the project. **Table A-1** provides information on cumulative projects that could combine with the effects of the proposed project. Applicable cumulative projects consist of

projects that are reasonably foreseeable or currently operational and would be constructed or operated during the life of the proposed project. Cumulative projects include land development or public works projects that are planned or approved and, given their physical proximity to the project area or an overlap in the transportation routes used during construction, could potentially contribute to the same environmental effects as the proposed project.

The detailed analysis of the cumulative impacts on individual environmental resources is provided within the respective technical sections of the environmental impact assessment.

References

City of Mountain House 2025a – City of Mountain House. Mountain House Current Projects. Accessed online at: https://www.mountainhouseca.gov/388/Current-Projects

City of Mountain House 2025b – City of Mountain House. Mountain House Active Projects. Accessed online at: https://www.mountainhouseca.gov/387/Active-Projects

City of Tracy 2025 – City of Tracy. Pipeline Report, dated August 2025. Accessed online at: https://www.cityoftracy.org/home/showpublisheddocument/21069

Dudek 2025ccc – Dudek (TN 263575). CEC Data Request #2 - Cumulative Impact Response. Docketed May 30, 2025. Accessed online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-OPT-04

TABLE A-1 CUMULATIVE PROJECTS LIST

Map Number	Project Name	Description	Location	Distance to Project (miles)	Status
1	Mulqueeney Ranch Wind Repowering Project	Installation of up to 36 new wind turbines, replacing the 518 old generation wind turbines that have been removed	Southeast quadrant of the Alameda County portion of the Altamont Pass, north and south Patterson Pass between 1-2 miles north of Tesla Road and 1 mile south of I-580	0	Under Construction
2	Griffith Energy SFtorage Project (Kola)	Energy-Storage - new construction and operation of a 400-megawatt battery energy storage system to provide reliable and flexible power to the local electrical system. The Project would interconnect at the Tesla Substation immediately adjacent to the site in Alameda County via a 230-kilovolt interconnection generation tie (gen-tie) line. The energy storage facility is anticipated to house lithium-ion batteries totaling 400 megawatts of energy.	APN 209-10-19 in San Joaquin County and APN 99B-7885-002, 99B-7590-1-3 in Alameda County	0.04	Under Construction
3	Jess Ranch Compost Project	Industrial- Project facility would receive and process organic materials, primarily greenwaste, foodwaste, and biosolids, but would also receive untreated scrap wood, natural fiber products, non-recyclable paper waste, and inert material, such as sediment, gypsum, wood ash, and clean construction debris. Non-hazardous liquid wastes may also be accepted as a substitute for the water that is added for efficient composting.	15850 Jess Ranch Road, Livermore, CA 95377 (APN 99B-7800-007-07 in Alameda County)	1	Approved

TABLE A-1 CUMULATIVE PROJECTS LIST

Map Number	Project Name	Description	Location	Distance to Project (miles)	Status
4	Interstate 580 International Parkway/Patterson Pass Interchange	Improve the existing compact diamond (Type L- 1) interchange at Interstate 580 and International Parkway/Patterson Pass Road between post miles 12.6 and 14.3. Increased traffic demand due to existing commercial growth and planned future development in San Joaquin County is creating the need to improve the interchange. The project proposes to modify the existing interchange into a Diverging Diamond Interchange (DDI).	Interstate 580 and International Parkway/Patterson Pass Road between post miles 12.6 and 14.3	1.55	Completed April 2025
5	Pave Gore & Narrow Areas, I-580 Post 0.0 – 9.7 (CT2)	Highway worker safety improvements	County: Alameda Route: 580 Post: 0.1/9	1.74	Approved
6	PLN 2015-00208 (Convenience Store)	Commercial-Proposed project is a gas station and convenience store consisting of 5,812 square feet on a 1.04-acre site	10 Grant Line Road, Livermore, CA 94550	1.85	Approved
7a	Install Power Supply, I-580 Post 1.3 – 6.0 (CT6)	Establish electric service connection and install lighting along a 4-mile stretch of eastbound I-580	County: Alameda Route: 580 Post: 1.3/6	1.92	Approved
7b	Alameda County - 580 Mitigation Project, I-580 Post 1.3 – 6.0 (CT7)	Mitigation for I-580 safety lighting project	County: Alameda Route: 580 Post: 1.3/6	1.92	Approved
8	Cordes Ranch Specific Plan	Specific Plan; The Project involves the development of approximately 1,780 acres of land with commercial, office, business park industrial, and park and recreational uses	The Specific Plan Area is adjacent to and south of Interstate 205 near Mountain House Parkway and northeast of Interstate 580.	2.04	Approved, parts Under Construction

TABLE A-1 CUMULATIVE PROJECTS LIST

Map Number	Project Name	Description	Location	Distance to Project (miles)	Status
9	Sand Hill Wind Repowering Project	Energy-Wind Turbine. Installation of up to 40 wind turbines	Along north and south sides of Altamont Pass Road, west of Grant Line Road, along east and west sides of Mountain House Road, and on both sides of Bethany Reservoir, west of Delta-Mendota Canal northwest of Mountain House Road, and southeast of the intersection of Christensen and Bruns Road	2.14	Approved
10	College at Mountain House Specific Plan III	Residential-approximately 815 acres. Proposed to include 2,240 residential units; approximately 1.8 million square feet of commercial, office, and industrial property; 42 acres of parks; two K-8 schools; a 108-acre community college, 79 acres of arterial roads, and 34 acres of open space. It would include three of the 12 neighborhoods envisioned under the MHMP.	Southwest portion of San Joaquin County, 3 miles west of Tracy and northeast of the intersection of I-205 and I-580	2.16	Approved
11	I-205/Mountain House Pkwy Interchange, I-205 Post 0.8 – 2.0 (CT8)	Oversight to construct new interchange	County: San Joaquin Route: 205 Post: 0.8/2	2.5	Approved

TABLE A-1 CUMULATIVE PROJECTS LIST

Map Number	Project Name	Description	Location	Distance to Project (miles)	Status
12	Tentative Sub Map - Tract 3557 (Neighborhood B9 & B10)	Proposing to subdivide B9/B10 into 299 residential area parcels. The property is approx. 34.86 acres in size and will be developed with 24.19 ac zoned medium density and 11.87 acres zoned medium-high density, which is consistent with the master specific plan. The medium density lots will consist of 155 single family homes and public roads which will be dedicated to the City. The medium high density lots will consist of 144 single family detached lots and alleys which will be HOA maintained. There are 36 common area parcels which will also be HOA maintained.	Part of Neighborhood B9 and B10 within the City of Mountain House. APN 209-08-025 in San Joaquin County	2.69	Under Review
13	Alameda Grant Line Solar 1 Project	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).	West Grant Line Road and Great Valley Parkway in eastern unincorporated Alameda County	2.84	Approved
14	Mountain House Developers - North of Byron	The project involves amendments to the City of Mountain House General Plan, Master Plan, Specific Plan II, and Zone Reclassification. It includes revisions to the conditions of approval for Neighborhoods I, J, K, and L, including the elimination of age restrictions for active adult residents, realignment of land use designations, and changes to the number and type of residential units.	Various neighborhoods and parcels within the City of Mountain House, see parcel map	2.91	Approved
15	Schulte Warehouse/Annexation	Industrial	16286 West Schulte Road, Tracy, CA 95377	2.99	Under Review

TABLE A-1 CUMULATIVE PROJECTS LIST

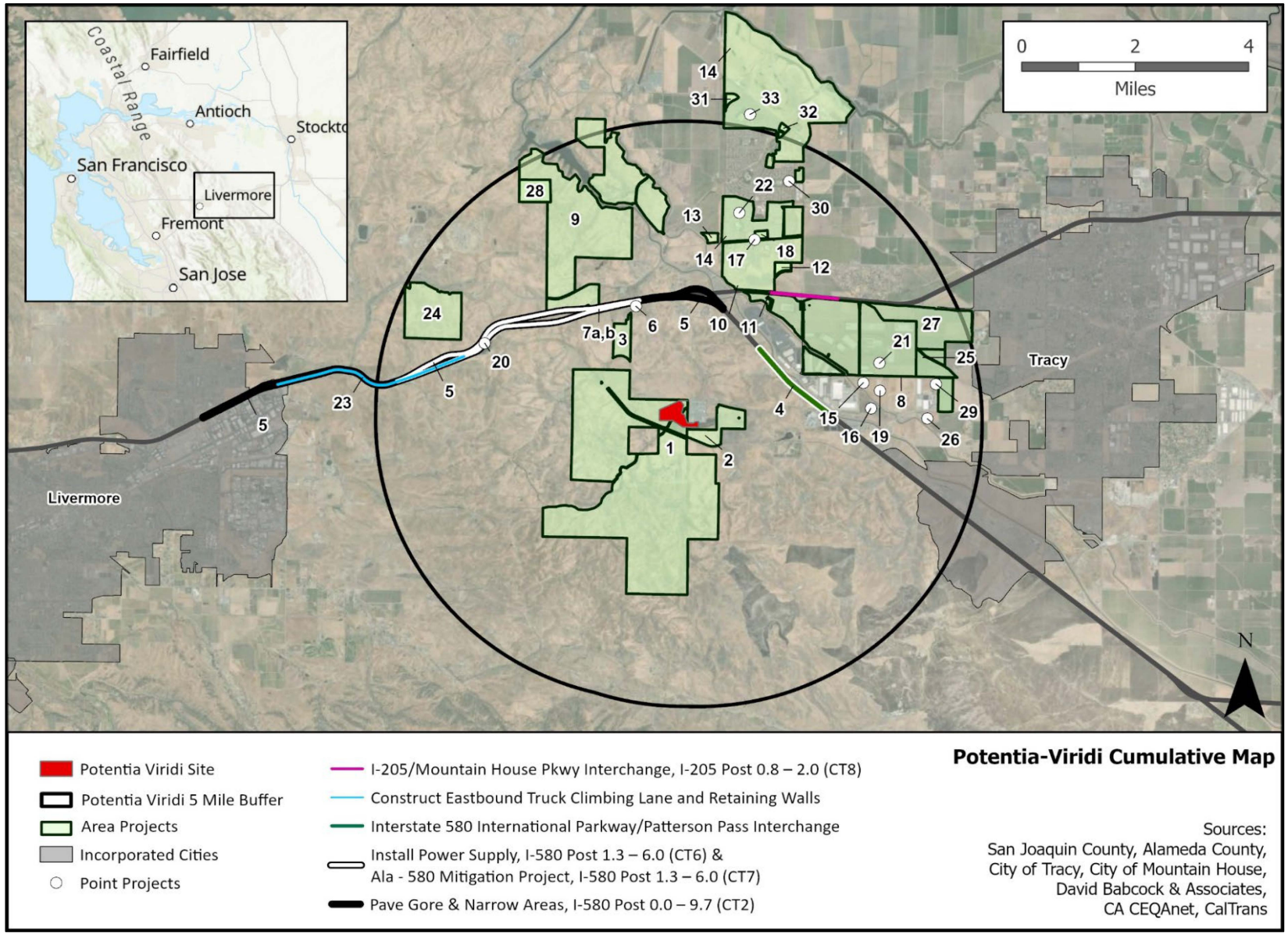
Map Number	Project Name	Description	Location	Distance to Project (miles)	Status
16	Costco Cold Distribution Center	Industrial	26301 South Hansen Road, Tracy, CA 95377	3.05	Under Review
17	Grant Line Roundabouts (West Grant Line Road and Mountain House Road)	The project proposes to construct roundabouts at two intersections along West Grant Line Road. One would be installed at the intersection of West Grant Line Road and Altamont Pass Road; the other would be placed at the intersection of West Grant Line Road and Mountain House Road.	West Grant Line Road and Altamont Pass Road & West Grant Line Road and Mountain House Road	3.11	FEIR filed
18	Singh Shopping Center	The proposed project includes a General Plan Amendment, Master Plan Amendment, Specific Plan III Amendment, Zoning Reclassification, and Tentative Parcel Map to develop a vacant 16.7± acre site as a commercial/retail shopping center with a grocery store and gas station at the intersection of Mountain House Parkway, Grant Line Road, and De Anza Boulevard. The project site is currently zoned for C-O (Office Commercial), and the proposed designation is C-C (Community Commercial).	Southwest corner of the Grant Line Road and Mountain House Parkway intersection. APN: 209-490-07 in San Joaquin County.	3.14	Under Review
19	2 Industrial Buildings (Costco Annexation)	Industrial	16000 West Schulte Road, Tracy, CA 95377	3.25	Approved and Not Yet Under Construction
20	Storm Damage - Permanent restoration, I-580 Post 4.3 (CT4)	Backfill with imported material at eroded slope	County: Alameda Route: 580 Post: 4.3	3.31	Approved
21	ZEV (Truck) Hub	Industrial	9752 Hopkins Road, Tracy, CA 95377	3.36	Under Review

TABLE A-1 CUMULATIVE PROJECTS LIST

Map Number	Project Name	Description	Location	Distance to Project (miles)	Status
22	Hansen - Neighborhood C	Proposed construction of a new shopping complex in Mountain House, including site improvements, grading, and utility connections.	1140 South Vecindad Street, Mountain House, CA 95391	3.48	Approved
23	Construct Eastbound Truck Climbing Lane and Retaining Walls	Construct truck climbing lane and retaining walls	Alameda County Route 580, Post R4.7/8.2	3.57	Approved
24	Rooney Ranch	Repower an existing wind energy facility with generation capacity of up to 25.1 MW	578 acres, APNs 99B-6275-2-5 and 99B-6500-1 in Alameda County	3.72	Approved
25	Tracy Hills Specific Plan	The Tracy Hills Specific Plan area encompasses approximately 2,761.3 acres within the southern portion of the City of Tracy.	Existing interchange at Corral Hollow Road and the proposed Lammers Road interchange on Interstate 580 (I-580).	3.92	Approved
26	PA-2400335 (A)	An Administrative Use Permit application to develop a 40 megawatt (MW), 8-hour duration, 320 MW hour battery energy storage system (BESS) project on approximately 12.8 acres within a 39-acre parcel that is adjacent to the Tracy combined cycle power plant (TCCPP). The project will consist of modular battery and inverter enclosures, transformers, switchyard, short 115 kilovolt gen-tie line, water line, and ancillary facilities. This property is not under Williamson Act contract	14950 W. Schulte Road., Tracy, CA 95377 (APN 20-240-32 in San Joaquin County)	4.03	Approved
27	Tracy Hills Westside Plan (Westside Specific Plan)	Commercial	Southwest of Lammers Road and 11th Street	4.06	Under Review
28	Viracocha Hills BESS (Reclaimed Wind)	Energy Wind Turbine	North of Altamont Pass Road, 1mile east of Dyer Road	4.18	Under Review

TABLE A-1 CUMULATIVE PROJECTS LIST

Map Number	Project Name	Description	Location	Distance to Project (miles)	Status
29	14800 W Schulte Road Logistics Center	Construction and operation of three single story warehouse buildings totalling approximately 678,913 square feet	14800 West Schulte Road, Tracy, CA 95377	4.24	Approved
30	Wicklund Crossing Neighborhood Commercial Site	Proposed construction of a new sports and retail building, including related site improvements and a trash enclosure.	541 Wicklund Crossing Way, Tracy, CA 95391	4.31	Approved
31	Trimark	The proposed project involves several components, including General Plan Amendment, Master Plan Amendment, Specific Plan I and II Amendments, Zone Reclassifications, and Tentative Subdivision Maps. The project covers amendments to accommodate land use and zoning changes in Areas 1, 2, and 3, transitioning various parcels from commercial to residential use.	APNs 254-030-12 through 19, 254-020-01, 254-230-06, 256-520-01 in San Joaquin County	4.35	Approved
32	New Home Company - H2 & H3	This project is a proposed subdivision of two existing parcels, totaling approximately 18 acres, into 199 residential lots. The project site is at the southeast corner of Central Parkway and W. Byron Road.	Part of Neighborhood H2 and H3 within the City of Mountain House. APNs 256-510-02 and 256-510-03 in San Joaquin County.	4.97	Approved
33	Tulip Kids	Development of a daycare facility with a 7,350 square feet daycare building and a 3,460 square foot future commercial building. The daycare includes multiple classrooms, a reception area, a director's office, staff break rooms, storage rooms, and child restrooms. The site also features EV charging stations, carpool-designated parking, and ADA-compliant pathways.	768 N Montebello Street, Mountain House, CA 95391	5.24	Approved


Fairfield
Coastal Range
Antioch
Stockto
San Francisco
Livermore
Fremont
San Jose
0
2
4
Miles
Tracy
Livermore
N
Potentia Viridi Site
Potentia Viridi 5 Mile Buffer
Area Projects
Incorporated Cities
Point Projects
I-205/Mountain House Pkwy Interchange, I-205 Post 0.8 – 2.0 (CT8)
Construct Eastbound Truck Climbing Lane and Retaining Walls
Interstate 580 International Parkway/Patterson Pass Interchange
Install Power Supply, I-580 Post 1.3 – 6.0 (CT6) &
Ala - 580 Mitigation Project, I-580 Post 1.3 – 6.0 (CT7)
Pave Gore & Narrow Areas, I-580 Post 0.0 – 9.7 (CT2)
Potentia-Viridi Cumulative Map
Sources:
San Joaquin County, Alameda County,
City of Tracy, City of Mountain House,
David Babcock & Associates,
CA CEQAnet, CalTrans

Appendix B

Mailing List

Appendix B: Mailing List

The following is the mailing list for the Potentia-Viridi Battery Energy Storage System.

The following is a list of the State agencies that received State Clearinghouse notices and documents:

- California Air Resources Board (ARB)
- California Department of Conservation (DOC)
- California Department of Fish and Wildlife, Region 3 (CDFW)
- California Department of Forestry and Fire Protection
- California Department of Parks and Recreation
- California Department of Transportation, District 4 (DOT)
- California Highway Patrol
- California Native American Heritage Commission (NAHC)
- California Public Utilities Commission (CPUC)
- California Regional Water Quality Control Board, Region 5 (RWQCB)
- California Department of Toxic Substances Control
- California Department of Water Resources
- Office of Historic Preservation
- State Water Resources Control Board, Division of Water Quality

Table B-1 presents the list of occupants and property owners contiguous to the project site and a list of property owners within 1,000 feet of the project site and 500 feet of project linears.

Table B-2 presents the list of agencies, including responsible and trustee agencies.

Table B-3 presents the list of interested parties.

TABLE B-1 OWNERS AND OCCUPANTS OF PROPERTY CONTIGUOUS TO PROJECT SITE OWNERS WITHIN 1,000 FEET OF PROJECT SITE AND 500 FEET OF PROJECT LINEARS

NAME	ADDRESS	CITY	STATE	ZIP
ESPRESSO ENERGY STORAGE, LLC	700 UNIVERSE BLVD	JUNO BEACH	FL	33408
OCCUPANT	17950 MIDWAY RD	MOUNTAIN HOUSE	CA	95377
WCP INVESTMENTS LLC	6558 LONETREE BLVD	ROCKLIN	CA	95765
W P CO	1400 DOUGLAS ST 1640	OMAHA	NE	68179
WILDLANDS INC	PO BOX 3610	ALBANY	GA	31706
MULQUEENEY RANCH PROPERTIES	PO BOX 2053	LIVERMORE	CA	94551
OCCUPANT	17257 PATTERSON PASS RD	MOUNTAIN HOUSE	CA	95377
PACIFIC GAS & ELECTRIC CO	PO BOX 7054	SAN FRANCISCO	CA	94120
PACIFIC GAS & ELECTRIC CO	PO BOX 770000	SAN FRANCISCO	CA	94177

TABLE B-2 AGENCIES

NAME	TITLE	AGENCY	ADDRESS	CITY	STATE	ZIP
CHRIS BAZAR		ALAMEDA COUNTY DEVELOPMENT AGENCY	224 W WINTON AVE RM 110	HAYWARD	CA	94544
CINDY HORVATH	ALAMEDA COUNTY COMMUNITY DEV AGENCY	AIRPORT LAND USE COMMISSION	224 W WINTON AVE RM 111	HAYWARD	CA	94544
JENNA YANG	WATER RESOURCE CONTROL ENGINEER	CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD	11020 SUN CENTER DRIVE, SUITE 200	RANCHO CORDOVA	CA	57600
AL SPATCHER		PG&E	1030 DETROIT AVE	CONCORD	CA	94518
LARRY TONG		EAST BAY REGIONAL PARK DISTRICT	2950 PERALTA OAKS CT	OAKLAND	CA	94605
		STATE PARKS & RECREATION	1416 9TH STREET	SACRAMENTO	CA	95814
ANDY WILSON		CALIFORNIA PILOTS ASSOCIATION	31438 GREENBRIER LN	HAYWARD	CA	94544
DONNA ZIEGLER		ALAMEDA COUNTY COUNSEL	1221 OAK ST STE 450	OAKLAND	CA	94612
DILAN ROE	CHIEF, LAND AND WATER DIV.	ALAMEDA COUNTY - DEPARTMENT OF ENVIRONMENTAL HEALTH	1100 SAN LEANDRO BLVD.	OAKLAND	CA	94577

TABLE B-2 AGENCIES

NAME	TITLE	AGENCY	ADDRESS	CITY	STATE	ZIP
BRENTT BLASER	EMERGENCY SERVICES SUP.	ALAMEDA COUNTY OFFICE OF EMERGENCY SERVICES	4985 BRODER BLVD.	DUBLIN	CA	94568
		ALAMEDA COUNTY - HAZARDOUS MATERIALS TEAM	835 E 14TH ST STE 200	SAN LEANDRO	CA	94577
PHONG LA	COUNTY ASSESSOR	ALAMEDA COUNTY ASSESSOR	1221 OAK ST STE 145	OAKLAND	CA	94612
MELISSA WILK	AUDITOR-CONTROLLER	ALAMEDA COUNTY AUDITOR	1221 OAK ST STE 249	OAKLAND	CA	94612
LAKEISHA JONES	PUBLIC WORKS ASSISTANT	ALAMEDA COUNTY PUBLIC WORKS, CONSTRUCTION AND DEVELOPMENT SERVICES	399 ELMHURST	HAYWARD	CA	95444
FERNANDO GONZALEZ	SUPERVISING CIVIL ENGINEER	ALAMEDA COUNTY, ENGINEERING AND PERMITS	399 ELMHURST	HAYWARD	CA	95444
CESAR ICASIANO	ENGINEERING DEPT. STAFF ASST.	ALAMEDA COUNTY PUBLIC WORKS AGENCY	399 ELMHURST	HAYWARD	CA	95444
JASON PHUNG	TRAFFIC SIGNAL SUP.	ALAMEDA COUNTY PUBLIC WORKS AGENCY	399 ELMHURST	HAYWARD	CA	95444
MICHAEL TADESSE	SUP. ROW AGENT	ALAMEDA COUNTY PUBLIC WORKS AGENCY	399 ELMHURST	HAYWARD	CA	95444
SHAWN WILSON	CHIEF OF STAFF	ALAMEDA COUNTY BOARD OF SUPERVISORS (SUPERVISOR DAVID HAUBERT, DISTRICT 1)	4501 PLEASANTON AVENUE	PLEASANTON	CA	94566
STEPHEN THOMPSON	DEPUTY	ALAMEDA COUNTY SHERIFF'S DEPT	1401 LAKESIDE DR 12TH FLOOR	OAKLAND	CA	94612
		AIR RESOURCES BOARD - PROJECT ASSESSMENT BRANCH	1001 I ST	SACRAMENTO	CA	95814
		BAY AREA AIR QUALITY MGMT DIST	375 BEALE ST STE 600	SAN FRANCISCO	CA	94105
BRENDA BLINN	SENIOR ENV. SCIENTIST (SUP.)	CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, RENEWABLE ENERGY INFRASTRUCTURE UNIT	P.O BOX 944209	SACRAMENTO	CA	94244
		CALIFORNIA OFFICE OF HISTORIC PRESERVATION	1725 23RD STREET	SACRAMENTO	CA	95816

TABLE B-2 AGENCIES

NAME	TITLE	AGENCY	ADDRESS	CITY	STATE	ZIP
		CALIFORNIA INDEPENDENT SYSTEM OPERATOR	250 OUTCROPPING WAY	FOLSOM	CA	95630
		CAL OSHA DISTRICT OFFICE	1515 CLAY ST STE 1103	OAKLAND	CA	94612
	EPA ID CENTER	DEPARTMENT OF TOXIC SUBSTANCES CONTROL	PO BOX 806	SACRAMENTO	CA	95812
		EAST BAY MUNICIPAL UTILITY DISTRICT	PO BOX 24055	OAKLAND	CA	94623
		ELECTRICITY OVERSIGHT BOARD	455 GOLDEN GATE AVE STE 11000	SAN FRANCISCO	CA	94102
AILEEN MENDOZA	CUPA MANAGER	ALAMEDA COUNTY ENVIRONMENTAL HEALTH DEPARTMENT HAZARDOUS MATERIALS DIVISION	1131 HARBOR BAY PKWY.	ALAMEDA	CA	94502
KIMI WATKINS-TARTT	DIRECTOR	ALAMEDA COUNTY DEPARTMENT OF PUBLIC HEALTH	1100 SAN LEANDRO BLVD.	OAKLAND	CA	94577
		OFFICE OF ENVIRONMENTAL HEALTH & HAZARD ASSESSMENT	PO BOX 4010	SACRAMENTO	CA	95812
BONNIE S. TERRA	DIVISION CHIEF	ALAMEDA COUNTY FIRE DEPARTMENT	6363 CLARK AVENUE	DUBLIN	CA	94568
IM MORRISSEY	SUPERVISING EMS COORD.	ALAMEDA COUNTY EMS AGENCY	1000 SAN LEANDRO BLVD., STE. 200	SAN LEANDRO	CA	94577
		HAYWARD WATER POLLUTION SOURCE CONTROL	24499 SOTO RD	HAYWARD	CA	94544
LINDA LAI	ENGINEERING TECHNICIAN	ALAMEDA COUNTY WATER DISTRICT	43885 S. GRIMMER BLVD.	FREMONT	CA	94537
		PACIFIC GAS AND ELECTRIC	77 BEALE ST	SAN FRANCISCO	CA	94177
MATTHEW DI LORETO	REGULATORY PROJECT MGR.	US ARMY CORPS OF ENGINEERS, CA DELTA SECTION	1325 J ST.	SACRAMENTO	CA	95814
		US ARMY CORPS OF ENGINEERS	1455 MARKET ST FL 17	SAN FRANCISCO	CA	94103

TABLE B-2 AGENCIES

NAME	TITLE	AGENCY	ADDRESS	CITY	STATE	ZIP
		US EPA - AIR PERMITTING DIVISION	75 HAWTHORNE ST	SAN FRANCISCO	CA	94105
BRIDGET GIBLIN	FISH AND WILDLIFE BIOLOGIST	US FISH & WILDLIFE	2800 COTTAGE WAY	SACRAMENTO	CA	95825
	SAN JOAQUIN VALLEY BRANCH	US FISH & WILDLIFE	2800 COTTAGE WAY STE W2605	SACRAMENTO	CA	95825
		WASTE MGT AUTH OF ALAMEDA CO	1537 WEBSTER ST	OAKLAND	CA	94612
ALBERT LOPEZ	PLANNING DIRECTOR	ALAMEDA CO COMMNITY DEVELOPMENT AGENCY PLANNING DEPARTMENT	224 WEST WINTON AVE. ROOM 111	HAYWARD	CA	94544
STEVEN BLYTHE	UNIT ASSISTANT CHIEF	CALFIRE SANTA CLARA UNIT	15670 MONTEREY ROAD	MORGAN HILL	CA	95037
MARCUS HERNANDEZ	UNIT CHIEF	CALFIRE SANTA CLARA UNIT	15670 MONTEREY ROAD	MORGAN HILL	CA	95037
AUBREY ROSE	SENIOR PLANNER	ALAMEDA COUNTY PUBLIC WORKS	399 ELMHURST	HAYWARD	CA	95444
JENNIFER HEICHEL	DISTRICT COORDINATOR - 10	CALTRANS, ENVIRONMENTAL ANALYSIS	1976 E MARTIN LUTHER KING JR BLVD	STOCKTON	CA	94205
LAURA LOEFFLER	DISTRICT COORDINATOR - 4	CALTRANS, ENVIRONMENTAL ANALYSIS	111 GRAND AVENUE	OAKLAND	CA	94612
BRIDGET GIBLIN	FISH AND WILDLIFE BIOLOGIST	US FISH & WILDLIFE	2800 COTTAGE WAY	SACRAMENTO	CA	95825
	SAN JOAQUIN VALLEY BRANCH	US FISH & WILDLIFE	2800 COTTAGE WAY STE W2605	SACRAMENTO	CA	95825

TABLE B-3 INTERESTED PARTIES

NAME	TITLE	AFFILIATION	ADDRESS	CITY	STATE	ZIP
ALEX STUKAN	PARALEGAL	ADAMS BROADWELL JOSEPH & CARDOZO	601 GATEWAY BOULEVARD SUITE 1000	SOUTH SAN FRANCISCO	CA	94080