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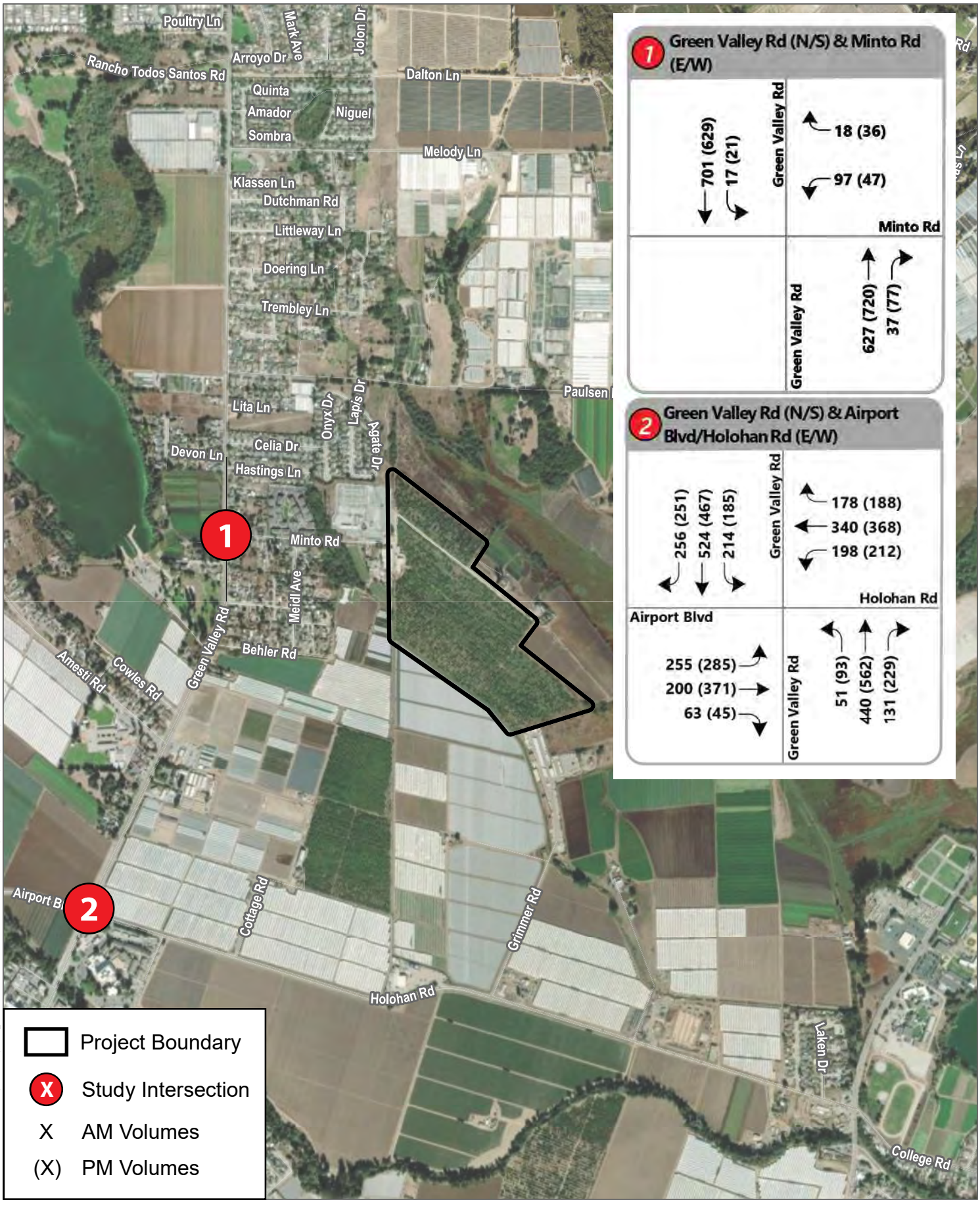

SOURCE: ESRI Imagery Accessed 2024

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Figure 3.12-12
Existing Peak Hour Traffic Volumes (PCE)
Seahawk Battery Energy Storage System Project

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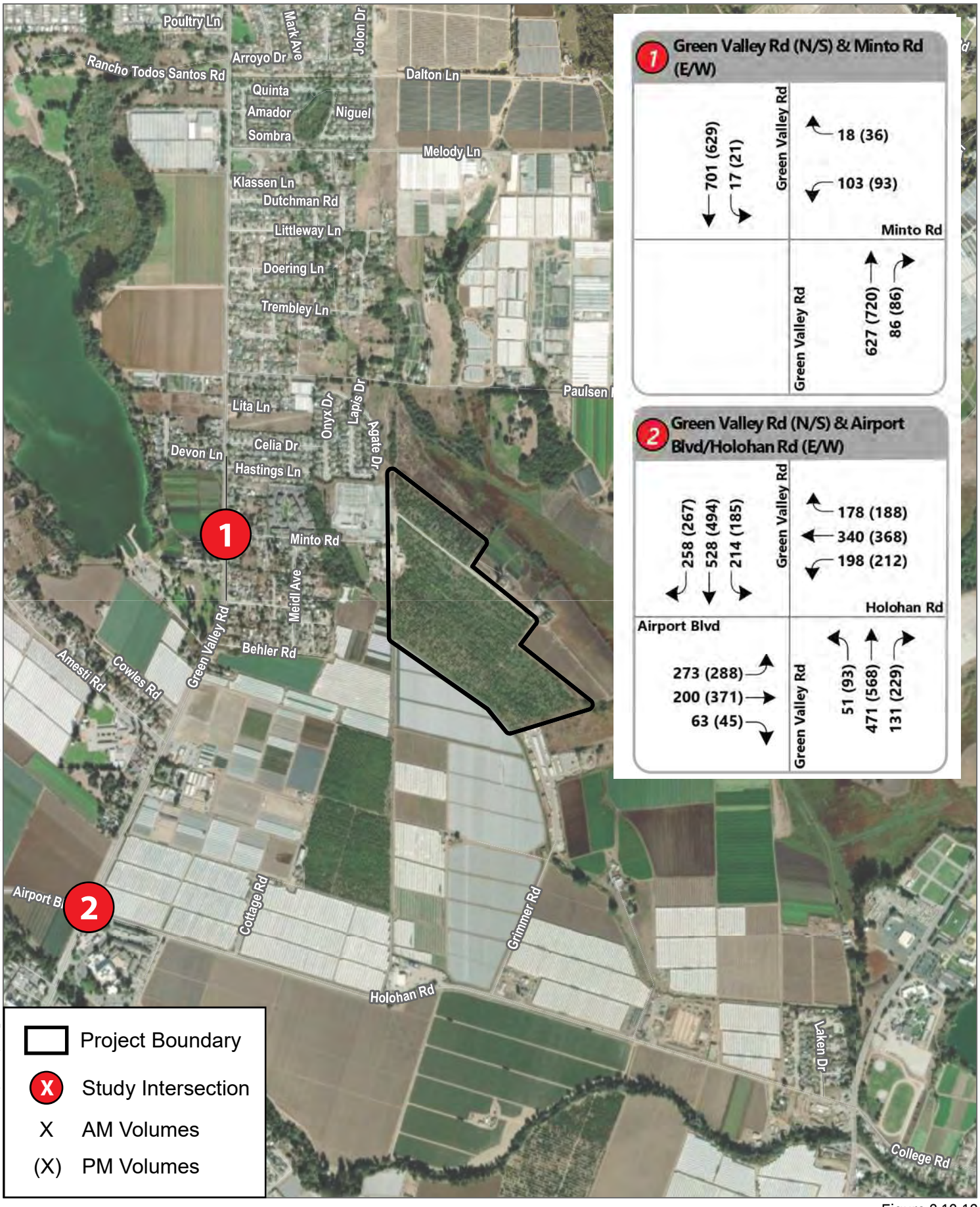

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Figure 3.12-13
Existing Plus Project Peak Day Construction Peak Hour Traffic Volumes (PCE)
Seahawk Battery Energy Storage System Project

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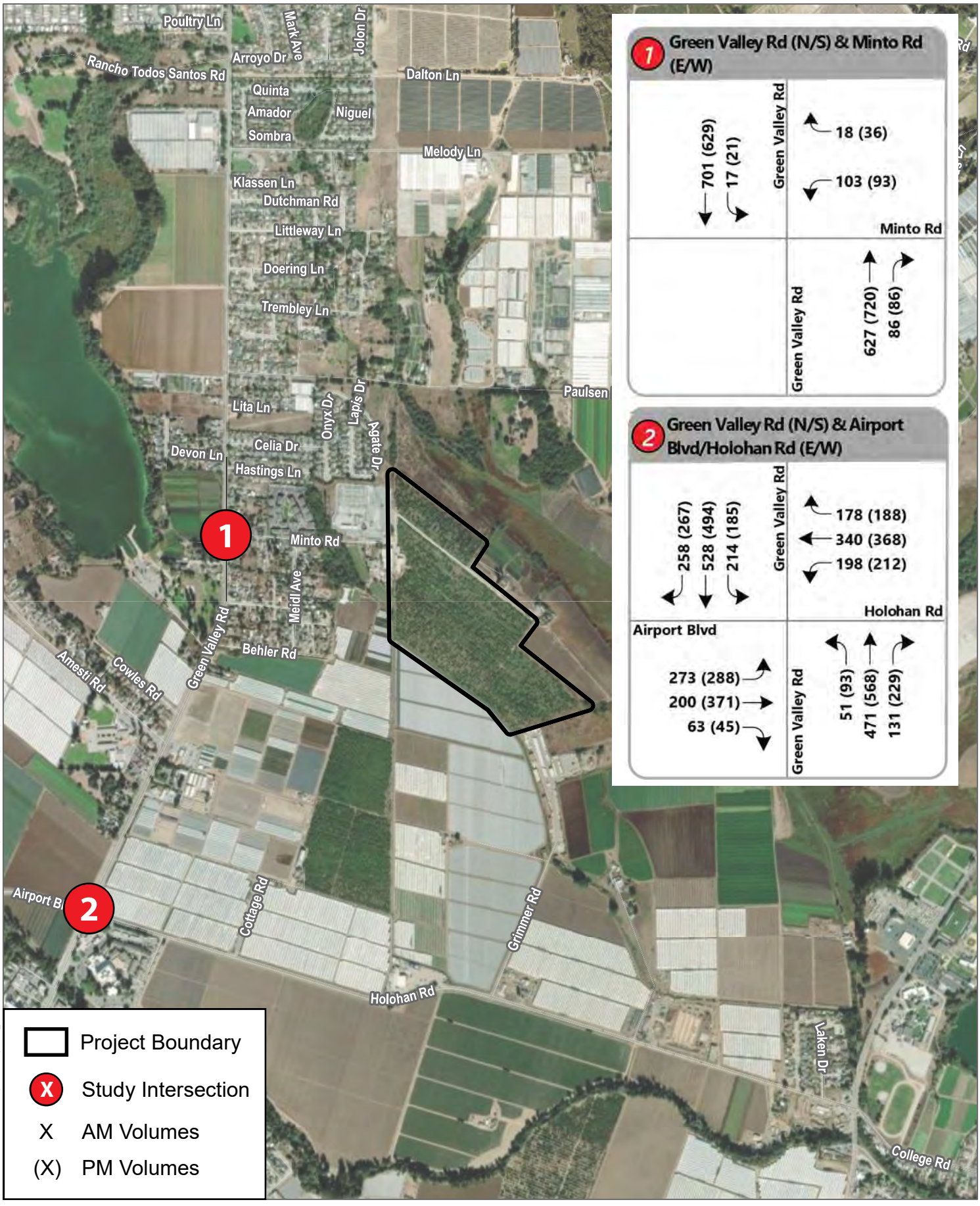

SOURCE: ESRI Imagery Accessed 2024

Figure 3.12-14

Cumulative (2028) Peak Hour Traffic Volumes (PCE)

Seahawk Battery Energy Storage System Project

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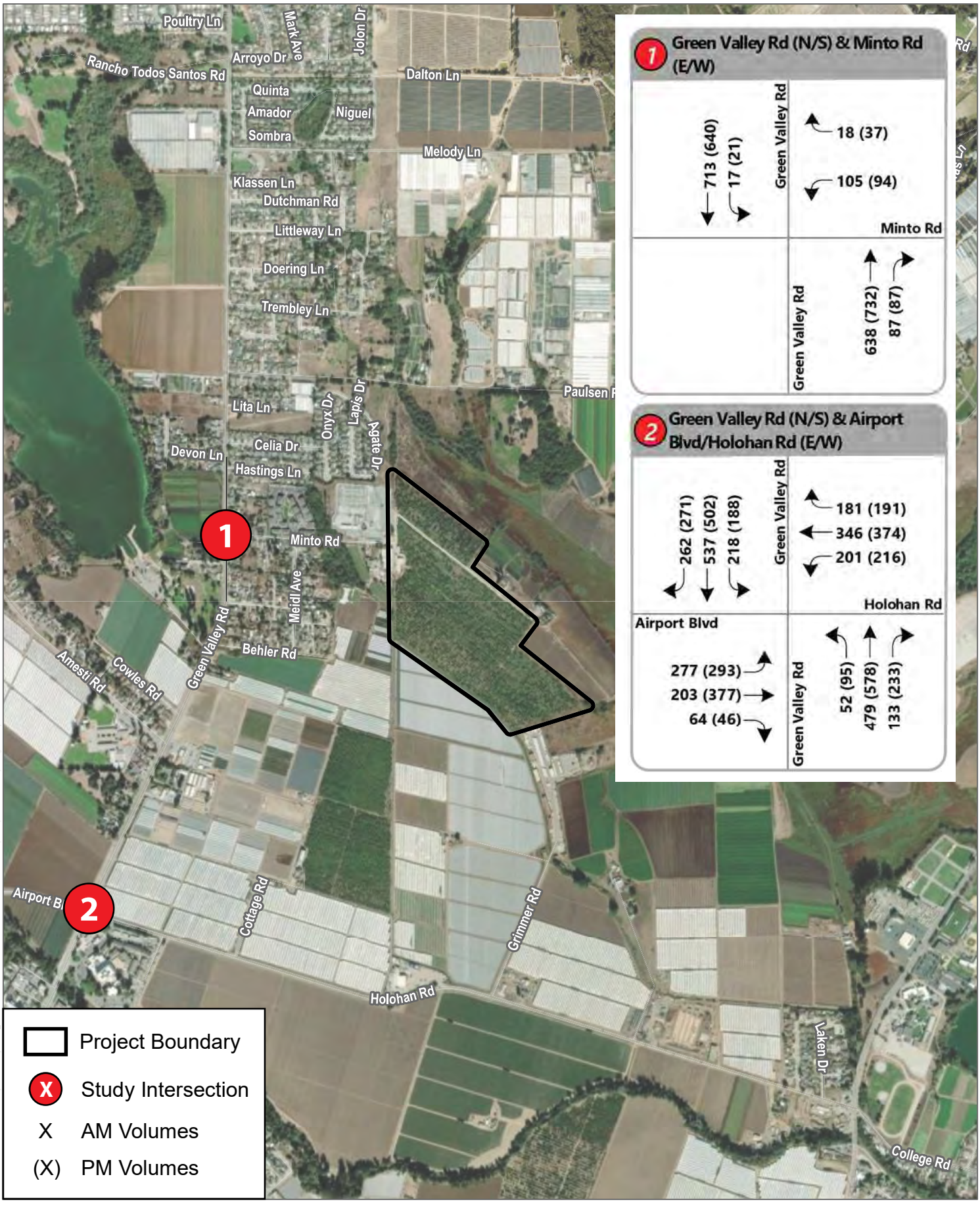

SOURCE: ESRI Imagery Accessed 2024

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Figure 3.12-15
Cumulative (2028) Plus Peak Day Construction Peak Hour Traffic Volumes (PCE)
Seahawk Battery Energy Storage System Project

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3.13 Visual Resources

This section discusses the existing landscape (built and natural) surrounding the Seahawk Battery Energy Storage System (BESS) Project (project) facility and the potential visual impacts associated with its construction and operation. The project would consist of a 200-megawatt BESS facility, an on-site collector substation, a 115-kilovolt (kV) generation interconnect (gen-tie) transmission line, and interconnection to the adjacent Green Valley Substation owned and operated by Pacific Gas and Electric Company (PG&E).

This evaluation of visual resources includes the following elements:

- Section 3.13.1 describes the existing environment that could be affected, including regional and local visual resources.
- Section 3.13.2 identifies potential environmental impacts that may result from project construction, operations and maintenance, and decommissioning.
- Section 3.13.3 discusses potential cumulative effects.
- Section 3.13.4 describes project design and mitigation measures that would be implemented to avoid or minimize potentially significant impacts.
- Section 3.13.5 presents laws, ordinances, regulations, and standards (LORS) applicable to visual resources.
- Section 3.13.6 identifies regulatory agencies and agency contacts.
- Section 3.13.7 describes permits required for the project related to visual resources.
- Section 3.13.8 provides references used to develop this section.

For the purposes of this analysis, the term “visual resources” refers to the natural and cultural landscape features that compose the landscape surrounding the project site and their qualities and contribution to landscape character. Natural landscape features include landforms, water features, and vegetation. Cultural landscape features include buildings, roadways, structures, and artificial lighting related to human land uses. The quality of the visual environment has a value to individuals and, more generally, communities.

In accordance with the California Energy Commission Appendix B, Information Requirements for an Application for Certification or Small Power Plant Exemption (see California Code of Regulations Section 20, Division 2, Chapter 5, Appendix B[g][6], Visual Resources), this section provides a visual assessment for the project, including an evaluation of whether the project would conflict with applicable zoning and other local regulations governing scenic quality. As such, this section includes an investigation of scenic resources (e.g., scenic vistas, highways, overlooks, parks, trails) within a 5-mile radius centered on the project site. Identified resources—including sensitive built environment resources/structures, scenic vistas, state designated scenic highways, locally designated scenic roads, scenic overlooks, water bodies, and public trails and parks—were mapped and presented in a table format (see Appendix 3.13, Scenic Resources Within 5 Miles of the project Site). This analysis conforms with the documentation requirements of the California Environmental Quality Act (CEQA) (California Public Resources Code [PRC] Section 21000 et seq.). This section focuses on resources (i.e., views and existing visual character) located in proximity to the project site that have the potential to be affected by implementation of the project.

A summary of the visual resources evaluation is provided in the table below.

		Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:					
1	Have a substantial adverse effect on a scenic vista.	☐	☐	☒	☐
2	Substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.	☐	☐	☒	☐
3	In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings. (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality.	☐	☐	☒	☐
4	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	☐	☐	☒	☐

3.13.1 Affected Environment

3.13.1.1 Regional Setting

The project is proposed within the Pajaro Valley in southern unincorporated Santa Cruz County (County), California, approximately 1 mile north of the City of Watsonville boundary (as measured from the intersection of Quinza Court and Atkinson Lane) and 0.3 miles east of the intersection of Minto Road and Green Valley Road in Santa Cruz County, California. Development of the BESS facility would occur on an area of land that currently supports a fruit orchard and is bordered by Minto Road, fruit orchards, and two rural residences to the north; a high-voltage electrical transmission corridor, PG&E's Green Valley Substation, agricultural buildings/structures, and agricultural croplands on the west; agricultural/crops lands and a school district vehicle storage and maintenance yard on the south; and vacant and agricultural lands and College Lake on the east. A small, local market is located at the northeast corner of the intersection of Green Valley Road and Minto Road. As stated above, there are a few single-family residences adjacent to the project site's northern and western boundaries and a few other single-family residences in the vicinity of the gen-tie line (i.e., multifamily and single-family residences are located within 200 feet of the PG&E Green Valley Substation).

The broader landscape is defined by a mix of farmland, riparian corridors, and low-lying hills, with views extending toward the Santa Cruz Mountains to the north and northeast. The City of Watsonville serves as a regional hub for agricultural processing and distribution and includes residential, commercial, and industrial zones. Beyond Watsonville, the region transitions into more densely developed urban areas, such as Santa Cruz to the northwest and Salinas to the southeast. The regional transportation network includes State Route 129 and State Route 1,

which provide access to the site and connect the area to broader coastal and inland regions (Figure 1-1, Regional Map, in Chapter 1, Executive Summary).

3.13.1.2 Project Site

The proposed BESS facility would occupy a portion (i.e., 16 acres) of two parcels, totaling approximately 47 acres, at 90 Minto Road. The site, which features approximately 30 feet of elevation loss from west to east and from north to south, features a centrally located, broad ridge, currently supports an active fruit orchard with rows of cultivated trees and associated agricultural infrastructure, including at least one permanent farm building. In addition to trees (approximately 8 to 12 feet high), the project site is crossed by a series of east–west dirt roads that branch from a single, centrally located north–south dirt road. The ground surface is composed of compacted soils typical of intensively managed farmland, with minimal native vegetation due to regular cultivation. The site is bordered by a gravel shoulder along Minto Road to the north and is adjacent to PG&E's Green Valley Substation to the west, which includes fenced electrical equipment, transformers, and high-voltage transmission structures. The site would be accessible via a proposed 20-foot-wide gravel access road extending from Minto Road and includes sufficient space for vehicle parking and equipment staging. There is no signage.

Figure 3.13-1, Existing Conditions: Project Site presents photographs of the project site and existing features that were taken during the 2024 field reconnaissance survey conducted by Dudek.

Lighting

Lighting sources on the project site are limited and are concentrated in the northwestern corner of the site, where aged agricultural buildings are located. Specifically, in this area there are a few exterior mounted, overhead lighting fixtures that provide localized illumination for individuals accessing existing buildings and structures. No other sources of lighting occur within the orchard areas of the project site. Along the proposed gen-tie alignment and west of the site (west of Minto Road), there are limited sources of lighting within the PG&E Green Valley Substation.

To the immediate south of the PG&E Green Valley Substation are two isolated residences that feature soft exterior mounted lighting near structure entryways. Residential areas to the west (within 200 feet) and north (within 75 feet) of the PG&E Green Valley Substation feature lighting sources typical of modern multifamily and single-family neighborhoods. At the Schapiro Knolls Apartments, west of the substation, lighting sources include two overhead lights at the development entrance off Minto Road, front porch lighting along detached homes fronting Minto Road, exterior lighting near inward-facing garage entryways, overhead parking lot lighting, and overhead lighting in common areas. Overhead, cobra-head-style streetlights are installed along the public roads associated with the single-family residential areas to the north and northwest of the substation, and other lighting sources include exterior mounted lights at garage doors and lighting emanating from the interior of homes. Several isolated homes occur to the north of the project site and north of Minto Road, and nighttime lighting sources consist of typical exterior mounted fixtures. Lastly, the bus yard to the southeast of the project site includes overhead lot/yard lighting at regular intervals/spacing.

3.13.1.3 Project Appearance

Project Structures, Dimensions, and Materials

The primary project components are described in Chapter 2, Project Description. Figure 1-3, Site Layout, in Chapter 1 depicts the site plan and general layout of project components. Table 3.13-1, below, identifies the aesthetic characteristics of the primary project components, with emphasis on dimensions, materials, and finishes.

Table 3.13-1. Characteristics of Primary Project Components

Component	Dimensions/Size	Materials	Finishes
Battery energy storage system (containers/enclosures)	20 feet L × 8 feet W × 10 feet H	Prefabricated metal material	Light to dark gray
Project substation (includes 115 kV/34.5 kV transformers, 115 kV switches, 115 kV breakers, 115 kV risers, switchgear, and steel pole to connect substation to the gen-tie)	246 feet L x 129 feet W; one 50-foot-high steel pole	Prefabricated metal material; tubular steel	Light to dark gray
PG&E Green Valley Substation Point of Interconnection, one steel pole	60 feet tall	Tubular steel	Light to dark gray
Gen-tie structures, four monopoles	60 feet tall	Tubular steel	Light to dark gray
Noise mitigation wall	12 to 14 feet high	Concrete masonry block	
Motion-activated security lighting	Mounting height for general site lighting – approximately 20 feet	Metal poles with attached lighting elements	Light to dark gray
Access gate (double gate panel)	20 feet wide, 7 feet high	Chain-link (diamond fabric, knuckled selvage), double panel with tension bands, horizontal brace, and gate latch with provision for padlock)	Light gray, galvanized
Access roads	20 feet wide	Gravel	Light to dark gray
Landscaping	Varies (see Landscaping subsection, below)	Not applicable	Color varies by species

Notes: L = length; W =width; H = height; kV = kilovolt.

Laydown Areas

A designated area for parking and construction staging would be located on site during construction, most likely near the site entrance. The laydown areas would be bladed, compacted, and surfaced with aggregate. If required to comply with fire prevention standards, landscape fabric may also be installed under the surface of all laydown areas to prevent vegetation growth.

Perimeter Wall

The noise mitigation wall would be 14 feet tall on the northern side and 12 feet tall on the southeastern and southern sides of the facility. There would be 20-foot-wide, double-panel gates would be installed at the primary access points to the facility. The project's civil plans are included in Appendix 2C.

Landscaping

The site perimeter would be landscaped with a mix of trees and primarily native shrubs intended to soften the site's perimeter elements (primarily, the proposed noise mitigation wall). Specifically, the landscape plan includes 15-gallon trees: Santa Cruz Island ironwood (*Lyonothamnus floribundus;* 5 feet high at install/30 feet high at 20-year maturity), holly leaf cherry (*Prunus ilicifolia*; 4 feet high at install/10 feet high at 15-year maturity), and coast live oak (*Quercus agrifolia*; 4 feet high at install/40 feet high at 20-year maturity). Screening shrubs including coyote brush (*Baccharis pilularis*), blueblossom (*Ceanothus thyrsiflorus*), California coffeeberry (*Frangula californica*) and toyon (*Heteromales arbutifolia*) are included, and basins and swales are proposed to be landscaped with a seed mix composed of yarrow (*Achillea millefolium*), California brome (*Bromus sitchensis* var. *carinatus*), blue lyme grass (*Leymus arenarius*), California poppy (*Eschscholzia californica*), California meadow barley (*Hordeum brachyantherum*), and other grassy species. The landscape area between the noise mitigation wall and the property line would be at least 10 feet wide and feature decomposed granite "mulch." All plants specified are native to the region or well adapted to the local climate. The plants would be irrigated for 3 to 5 years immediately following installation. A conceptual landscaping plan is included in Appendix 2B, Landscape Plan.

3.13.2 Impact Analysis

3.13.2.1 Methodology

Viewshed Analysis and Visual Effects Area

The visual environment can be vast; therefore, for purposes of analyzing project effects to views and visual character, boundaries must be placed on that visual environment. The area within the boundaries is commonly referred to as the viewshed. A viewshed is composed of all the surface areas visible from an observer's viewpoint and within a defined study area. The project viewshed analyses were prepared using geographic information system (GIS) software (digital elevation model data) and depict potential/theoretical areas of project component visibility within a 1-mile local and 5-mile regional radius centered on the project site. The rasters of theoretical visibility for select project components, including battery energy storage enclosures and gen-tie poles, are shown on Figures 3.13-2a, Viewshed Analysis: BESS Enclosures, and 3.13-2b, Viewshed Analysis: Gen-Tie Poles, and are based on existing terrain and an assumed project component height of up to 20 feet above mean sea level for battery energy storage enclosures and 60 feet above mean sea level for the gen-tie support poles. In addition, the viewshed analyses for the BESS enclosures and gen-tie poles reflect anticipated view screening associated with construction of the perimeter noise mitigation wall. Note that the viewsheds do not account for or consider potential screening associated with vegetation or existing off-site structures, including development, that may occur between a given location or a representative vantage point, including selected key observation points (KOPs).

The viewshed analysis results identify areas as "visible" where there is a higher potential (darker color) for views of the proposed solar arrays within the analysis areas, whereas areas that are not identified as visible indicate where there is a lower or no potential (lighter color) for views. A 5-mile visual effects area was selected based on the topographical characteristics of the area and the defining limits of the viewshed (i.e., mountainous terrain to the

west, north, east, and south) and the height of land uses and vegetation in the surrounding area. The 1-mile analysis area was selected to depict locations proximate to the project site where views of select components may be available. Actual visibility and whether the project features would be noticeable or draw viewer attention in the landscape depend on various factors, including visibility conditions (e.g., lighting, air quality, weather), angle of view (e.g., relative viewer position and view orientation), duration of view (in time or distance), and the scale and spatial relationship (degree of contrast) of the project.

Viewers and Exposure

Understanding the types of viewers and their exposure to potential project-related visual effects helps to predict response to visual change in the landscape. View exposure describes the degree to which views of the landscape and the project are available to viewers. Viewer exposure considers viewing the distance (proximity of viewers to the project), frequency (the number of times the project may be seen), and duration (the length of time the project may be seen) of the available view. The primary groups provided views to the project would consist of the following:

- **Residential viewers:** Residential viewers consist of owners and renters of nearby residential properties who are provided views to the project and surrounding landscape. There are a handful of residents northwest of the project site who may have views of the project; however, those views may be partially screened or blocked by existing vegetation and the existing PG&E Green Valley Substation. A couple residences north of the project site, immediately north of Minto Road, would have a mostly unobstructed view of the project, although the residents have a private fence that would provide some screening. Residents to the southwest of the project area may have some views of the project, but the view is mostly obstructed by existing structures and vegetation. Although residential views are available from private yards/properties, viewing conditions and views from private residential properties were not verified during photographic field surveys due to lack of access to private property.
- **Motorists:** Motorists experience views of the passing landscape from vehicles while on the roadway. Within the project area, this group includes motorists on local roads, including Minto Road.

Photographic Survey and Selection of Key Observation Points

A photographic field survey was conducted to obtain on-the-ground familiarity with the local landscape and general visibility of the project site and to gather photographic images (and related geographic data) that help illustrate the existing visual character and quality of views to the project site. The photographic field surveys also provided an opportunity to obtain photographs that characterize views to the project site from selected viewpoints (KOPs).

The photographic field survey conducted by Dudek occurred in December 2024; local conditions were sunny and visibility was clear. Field staff photographed the project site and views from nearby public roads with an iPhone 12 with a 26-millimeter to 35-millimeter focal length equivalent. Dudek collected photographs of the project site from a total of eight off-site locations in the surrounding area. These locations included preliminary viewpoints from representative locations within the project viewshed. Visibility to the project site from all viewpoints was verified in the field and, where necessary, slight modifications to location were made to maximize the line of sight and overall clarity of view. Photographs comprise an inventory of site visibility from representative public viewing locations, and no photographs were taken from private property (this analysis does not assess effects to private views). Each photographed viewpoint location was documented using a GPS-enabled device.

Based on the set of photographed viewpoints and discussions with the applicant, Dudek identified three views representative of the general viewer types and landscapes from locations in the project viewshed where

components of the project may be particularly visible. This set included views from two public roads used by residential land uses within a foreground viewing distance of the project site and one view from a public road (Holohan Road) that captures the representative landscape of the local area as viewed from south of the project site. The location of KOPs is depicted on Figure 3.13-3, Key Observation Points. Also, character photos (that serve to support the discussion of existing conditions/existing visual character) are included in Figures 3.13-4a, 3.13-5a, and 3.13-6a.

Visual Simulations

In visual analyses, visual simulations typically serve as the means by which contrast between existing conditions and proposed project conditions are evaluated. Following the selection of KOPs, a Dudek visual simulation specialist used Autodesk 3ds Max to build a 3D model of the project and site surface based on the layout, available topography, AutoCAD design plans, and specifications provided by the applicant. The prepared 3D site surface is used to camera-match the KOP photos (in particular, topographical features in the existing photographs) to the terrain model. 3D models were then created for all proposed facilities that would be visible from the selected KOPs, including BESSs, roads, gen-tie, and fences. 3D models of project components were then merged into the 3D scene at their finished grade elevations, and lighting was added to the scene to match the time of day the photos were taken and to cast realistic shadows. Each view was then rendered to a high-resolution image, and a Dudek visual resource specialist reviewed the simulations for photorealism, clarity, and to ensure consistency with project plans.

Assessment of Effects on Visual Resources

A Dudek visual resources specialist evaluated the visual quality of existing conditions for each KOP through review of site photography and, where available, Google Earth street view imagery. In addition, data forms focusing on the key concepts of visual analysis methodology were used to record observations regarding the landscape's natural harmony, cultural order, overall coherence, landscape composition, and vividness for each view, assigning a visual quality rating ranging from low to high (see Table 3.13-3). This process was repeated for the photo simulations showing the project as viewed from each KOP. A visual quality rating for each KOP showing proposed conditions was determined and the difference in visual quality rating for each view between existing and proposed conditions established the degree of contrast in visual quality associated with project implementation. Anticipated sources of contrast related to visual character (e.g., character elements of form, line, color, and texture) are also identified and are discussed as appropriate.

Pursuant to California Energy Commission and CEQA requirements directing aesthetic/visual analyses to focus on changes to "objects of historic or aesthetic significance," the selected KOPs offer views of existing agricultural facilities (cultivated crop lands and orchards), with two locations also including the distant, natural silhouettes of local hillsides and mountain ridgelines. In addition to local planning documents and review of aerial and street view imagery of the local area, resources investigated for the siting of potential KOPs and identification of local objects of historic or aesthetic significance included source documents referenced in the City of Watsonville Historic Register and linked in public websites such as Wikipedia and alltrails.com. For further details concerning KOPs, refer to Table 3.13-3, which outlines viewer categories and their characteristics, along with each KOP's location and proximity to the project site. Anticipated changes to identified views at each KOP are also presented in Table 3.13-3. The locations of the KOPs in relation to the project site are depicted in Figure 3.13-3.

Lighting and Glare

To establish a baseline of pre-project lighting conditions, existing sources of nighttime lighting were documented during the desktop-level review of the project site and surrounding area. This review was then supplemented by observations made during photographic field investigations. Lighting conditions in the project landscape were documented qualitatively. No quantitative measurement of light or skyglow levels occurred during preparation of the lighting assessment.

Lighting conditions are classified based on definitions and descriptions from established international lighting guidelines, which consist of a set of established environmental lighting zones for classifying exterior light levels (CIE 2017). Environmental lighting zones and related quantitative thresholds are shown in Table 3.13-2.

Table 3.13-2. Environmental Lighting Zone Classifications

Zone	Lighting Environment	Examples of Lighting Conditions
E0	Intrinsically dark	UNESCO Starlight Reserves, Dark Sky International Dark Sky Parks, major optical observatories
E1	Dark	Relatively uninhabited rural areas
E2	Low district brightness	Sparsely inhabited rural areas
E3	Medium district brightness	Well-inhabited rural and urban settlements
E4	High district brightness	Town and city centers and other commercial areas

Source: CIE 2017.
Note: UNESCO = United Nations Educational, Scientific and Cultural Organization.

The assessment of project-related lighting involved a review of available project information, including design files, the project description presented in this document, and the project's lighting and photometric plan. This information provided insight into the incremental increase in lighting associated with the project and was considered in a qualitative assessment as to whether anticipated light levels would exceed thresholds for environmental lighting zone classifications and result in the local area being classified as a less-restrictive environmental lighting zone.

For purposes of this analysis and based on the description of environmental lighting zones, the project site is mostly within the E2 environmental lighting zone (CIE 2017). A change in an environmental lighting zone classification would signal a noticeable change in the perceived lighting conditions experienced by viewers during the nighttime.

3.13.2.2 Impact Evaluation Criteria

CEQA Guidelines Appendix G is a screening tool, not a method for setting thresholds of significance. Appendix G, which asks a series of questions, is typically used in the initial study phase of the CEQA process. The purpose of these questions is to make a determination as to whether a project requires an environmental impact report, mitigated negative declaration, or negative declaration. The answers to the Appendix G questions are not determinative of whether an impact is significant or less than significant. Nevertheless, the questions presented in CEQA Appendix G are instructive. With respect to visual resources/aesthetics, CEQA Appendix G asks, in part, would the project:

- Have a substantial adverse effect on a scenic vista?
- Substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

- 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, conflict with applicable zoning and other regulations governing scenic quality?
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

3.13.2.3 California Environmental Quality Act Appendix G Assessment Criteria

Criterion 3.13-1 Would the project have a substantial adverse effect on a scenic vista?

Less than Significant. There are no designated public scenic vistas identified in the County General Plan (County of Santa Cruz 2024), and there are no known or recognized public scenic vistas in the surrounding area. The site is also not within a General Plan Scenic Area as mapped by the County (County of Santa Cruz 2022a). The project site is located on approximately 47.4 acres of agricultural property at 90 Minto Road in an unincorporated area of the County, adjacent to the PG&E Green Valley Substation. The site is currently in agricultural production and surrounded by agricultural lands to the south and east, residential neighborhoods to the west and north, and institutional uses to the south. The site is relatively flat and does not encompass any steep hillsides, significant ridgelines, or other topographic features identified by the County as scenic resources. However, select views across or toward the site from Holohan Road reinforce the agricultural character of the area and frame agricultural lands against a scenic backdrop of regional hills and mountains. Holohan Road is not locally identified as a scenic vista; however, due to local protections placed on mountains as scenic resources, and due to the County General Plan's identification of open agricultural lands in South County and the rolling hillsides and ridgetops of the Santa Cruz Mountains as "important scenic resources" (County of Santa Cruz 2024b), the project's impact on existing views of agricultural lands, hills, and mountains available from Holohan Road are assessed in this section. KOP 1 (Paulsen Road) and KOP 2 (Lapis Drive) are not identified or considered to be scenic vistas for purposes of this analysis; however, project effects to views from these KOPs are evaluated to gauge overall impact to existing visual quality.

The project plan includes features designed to minimize visual impacts. These features include a 12- and 14-foot-high noise mitigation wall spanning the facility perimeter to screen views from adjacent properties. The plan also includes landscape buffering with native shrubs and drought-tolerant trees and shrubs, such as coast live oak, holly leaf cherry, toyon, and California coffeeberry, which would mature over time to create additional visual screening. Stormwater infrastructure including hydroseeded swales, bioretention basins, and riprap-lined drainage channels, would, once installed, offer minimal visual disruption. Further, the existing orchard trees outside of the project's footprint would be retained and maintained as part of ongoing agricultural operations. Given the absence of designated scenic resources, the flat terrain, the inclusion of visual screening and buffering features, and the lack of clear visibility to the project site from public vantage points, and lack of visually prominent/particularly vertical components, the project would not eliminate or obstruct the public view of a scenic vista and/or scenic resource. Thus, the project would result in a **less-than-significant impact** to a scenic vista.

Construction

Although construction activities associated with the project would alter views from surrounding locations across portions of the site, these activities would not block or permanently, meaningfully, or substantially interrupt public views to scenic vistas or prominent landscape features in the area. During construction, graded surfaces, construction materials, equipment, and truck traffic would be visible, primarily from nearby viewpoints along Minto Road and nearby residential areas. As needed, soil stockpiling and equipment staging would occur within the project site and would be removed (or relocated) as construction progresses. The limited use of cranes associated with the substation component and gen-tie pole installation could be detectable in views; however, in addition to limited use, the thin, vertical profile of cranes would be viewed in a landscape that currently supports vertical electrical transmission poles and substation components and would neither be atypical landscape elements nor prominent features capable of creating substantial view blockage or interruption. Although landscape changes associated with development of the project site may be detectable from nearby public and private vantage points, instances of partially blocked or interrupted views associated with construction activity or equipment would be temporary and infrequent. As such, construction-related impacts to scenic vistas would be **less than significant**, with no mitigation required.

Operations

Although operation of the project would result in permanent changes to the visual character of the project site, it would not block or substantially interrupt public views to scenic vistas or any prominent landscape features in the surrounding area. The proposed facility would be located in an area characterized by agricultural uses, an existing electrical substation, various transmission lines, and residential development (mostly to the west and north in the immediate surrounding area). Operational features, such as battery containers, inverters, transformers, and substations would primarily be visible from the segment of Minto Road that parallels the northern boundary of the project site. Outside of this segment of Minto Road, which receives limited daily and annual use (the road is used to access two private residential properties but provides no through traffic beyond the project site), public views to the facility during operations would be very limited because it would be blocked from view by intervening vegetation (including orchards) and development and/or would be obscured by distance. Table 3.13-3, Summary of Changes to Identified Views During Operations, below, assesses existing visual and view quality and evaluates project effects to existing visual and view quality. For example, the proposed facility would be surrounded on all sides by a 12- to 14-foot-high noise mitigation wall and landscaping consisting of trees and shrubs. Combined with existing orchards outside of the project footprint that would be retained, these features would soften the introduction and visual presence of the facility and would also maintain compatibility with the surrounding landscape. The project's maximum structure height would be 60 feet (see Table 3.13-1). Table 3.13-3, below, assesses existing visual and view quality and evaluates project effects to existing visual and view quality. As shown in Table 3.13-3 and Figures 3.13-4a and 3.13-6b, and for the reasons discussed above, operational impacts to scenic vistas would be less than significant, and no mitigation would be required.

Table 3.13-3. Summary of Changes to Identified Views During Operations

View	Viewers	Existing Visual Quality Rating and Anticipated project Contrast	Visual Impact
KOP 1 – Paulsen Road ▪ Camera type: iPhone 12 ▪ Lens focal length: 4.2 mm ▪ Viewing angle: Southeast ▪ Date: December 10, 2024 ▪ Distance to project site: 0.3 miles (to northern BESS site boundary)	Represents views of motorists or pedestrians along Paulsen Road	▪ Visual Quality Rating: **Low** ▪ Contrast Analysis: Form, scale, and straight, regular lines of BESS station components; color contrasts reduced by gray finish of materials that helps this feature blend into the surrounding landscape and existing infrastructure (see Figures 3.13-4a and 3.13-4b).	▪ **Less than significant** ▪ Unclear views of project components that generally blend into existing landscape. ▪ Visual change associated with project development would not be prominent or particularly visible among existing electrical substation and transmission infrastructure.
KOP 2 – Lapis Drive ▪ Camera type: iPhone 12 ▪ Lens focal length: 4.2 mm ▪ Viewing angle: Southeast ▪ Date: December 10, 2024 ▪ Distance to project site: 0.1 miles (to northern substation site boundary)	Represents views of motorists, pedestrians, and residents along Lapis Drive	▪ Visual Quality Rating: **Low** ▪ Contrast Analysis: Form, scale, and straight, regular lines of BESS station components; color contrasts reduced by gray finish of materials that helps this feature blend into the surrounding landscape (see Figures 3.13-5a and 3.13-5b).	▪ **Less than significant** ▪ Mostly blocked views of project components; visible elements that blend into existing landscape and established electrical substation and transmission infrastructure character of the local area. ▪ Visual change associated with project development would not be prominent or particularly visible among existing electrical substation and transmission infrastructure.
KOP 3 – Holohan Road ▪ Camera type: iPhone 12 ▪ Lens focal length: 4.2 mm ▪ Viewing angle: North ▪ Date: December 10, 2024 ▪ Distance to project site: 0.8 miles (to southern BESS boundary)	Represents views of motorists or pedestrians along Holohan Road	▪ Visual Quality Rating: **Moderate** ▪ Contrast Analysis: No clear views to the proposed gen-tie routes (poles are blocked by intervening trees and obscured from view by distance), and no views to project substation or BESS components (see Figures 3.13-6a and 3.13-6b).	▪ **Less than significant** ▪ Lack of clear views to project components. ▪ Changes to landscape associated with project implementation are not perceptible.

Notes: KOP = key observation point; BESS = battery energy storage system; mm = millimeter.

Criterion 3.13-2 ***Would the project substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?***

Less than Significant. From Route 101 near San Luis Obispo to Route 35 near Daly City, State Route 1, known locally as Highway 1, is an eligible California state scenic highway located approximately 2.65 miles to the southwest of the project site. Due to intervening topography and vegetation, the project site is not within the viewshed of Highway 1 and neither project-related disturbances on the site nor proposed project components would be visible to Highway 1 motorists. See Figures 3.13-2a and 3.13-2b, which depict the approximate visibility of proposed project BESS enclosures and gen-tie poles, respectively. As shown in the regional viewshed insets on the figures, neither the BESS enclosures nor the gen-tie poles would be visible from Highway 1 (intervening vegetation and off-site development, which is not accounted for in the viewshed analyses, would ensure no project component visibility from the highway). State Route 152 is an eligible California state scenic highway and is recognized by the County as a scenic corridor (County of Santa Cruz 2024a). Located approximately 1 mile to the east, however, the project site is not clearly visible along continuous highway segments, and most of the project components are generally blocked from view by intervening land uses/development along most of the highway's segments within 5 miles of the project site. Further, the project includes design features, such as a landscape buffering and noise mitigation wall, that would screen the facility from public view and further reduce visual impacts at public viewing locations including State Route 152. A list of historic places is provided in the City of Watsonville Historic Register, and those within 5 miles of the project are mapped in Figure 3.13-7, Scenic Resources within 5 Miles of project Site. There are 13 historic places within 5 miles of the project site. As shown in the regional viewshed insets of both figures, the project BESS components and noise mitigation wall are not expected to be visible from any historic places. Limited views of the project gen-tie components may be available from certain historic places, but existing vegetation and off-site structures (not included in the regional viewshed model) would likely block potential views of the project gen-tie components. Therefore, construction and operation of the project would not result in damage to any historic places. As such, construction and operation of the project would not substantially degrade scenic resources within the viewshed of Highway 1 and State Route 152.

Criterion 3.13-3 ***In non-urbanized areas, would the project 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 in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?***

Less than Significant**.** CEQA, through the PRC, defines an "urbanized area" as an incorporated area that has a population of at least 100,000 people, either by itself or by adding the population of the city with no more than two contiguous incorporated cities (PRC Section 21071[a][1]–[2]). For unincorporated areas (the project site is in an unincorporated area of the County), the area must be completely surrounded by one or more incorporated cities with populations no less than 100,000 people to be considered urbanized. Because the project site is not surrounded by one or more incorporated cities, the area is not considered to be "urbanized" pursuant to PRC Section 21071(b).

As proposed, the project site would be developed with numerous prefabricated energy storage containers, a substation, gen-tie, and associated infrastructure. Further, a perimeter noise mitigation wall and landscaped buffers are proposed and incorporated into the project description. The noise mitigation wall would be 14 feet tall on the northern side and 12 feet tall on the southeastern and southern sides of the facility, with perimeter landscaping designed to provide a visual buffer and soften visual impacts over time. The planting of perimeter landscaping would help blend the noise mitigation wall and BESS facility into the

surrounding environment. Although components of the substation and gen-tie poles would be visible, they would be smaller in scale compared to existing components at the adjacent PG&E Green Valley Substation and existing transmission line poles in the immediate vicinity.

As examined in Table 3.13-3, anticipated contrasts and impacts associated with development of the project would vary based on a variety of factors, including proximity and viewing angle to the project site, elevation relative to the project site, and presence of intervening screening features. The development of the project, including construction, operation, and decommissioning of a 200-megawatt BESS facility across an approximately 16-acre portion of a 47.4-acre site in an unincorporated area of the County would result in a change to the existing visual appearance and character of the existing orchard site. Existing condition photographs and visual simulations of the project from public vantage points in the surrounding area are provided and presented in Figures 3.13-4a through 3.13-6b. At KOP 1 and KOP 2 (see Figures 3.13-4b through 3.13-5b), the proposed BESS enclosures are fully blocked from view by existing vegetation, and the visual simulations show minimal perceptible change in the landscape. Specifically, the upper portions of 60-foot poles supporting the gen-tie would be low but visible at KOP 1 (see Figure 3.13-4b); new poles would be generally indistinguishable from existing transmission and substation infrastructure in the landscape. At KOP 2, existing orchards to be retained within the project boundary would block most project components (including BESS enclosures) from view; however, taller vertical components/poles at the project substation would be visible, as would portions of support poles for the gen-tie (see Figure 3.13-5b). These vertical components would be detectable above existing orchards to the southeast, and new gen-tie poles would appear in-line with existing, taller transmission line poles and trees. Due to the presence of existing electrical transmission lines and substations in the view/landscape that are of a taller scale and decidedly more visually prominent, and due to blockage of gen-tie poles by intervening features, resulting visual contrast would be low. At KOPs 1 and 2, the introduction of project components would not substantially degrade existing visual quality or character. At KOP 3, which is situated on a paved, two-lane east–west roadway corridor located over 0.6 miles from the southern boundary of the project site, most BESS enclosures would be fully screened from view by existing orchards that would remain on site. BESS enclosures installed near the eastern site boundary would be screened from view by the proposed perimeter noise mitigation wall to be installed and by site landscaping (several new trees to be planted around the site perimeter would be visible above existing orchard tree crowns but are obscured by distance). Due to their gray color, thin form, and distance, gen-tie poles to be installed between the Point of Change of Ownership and the existing PG&E Green Valley Substation would create very weak visual contrast. At KOP 3, the introduction of project components would not substantially degrade existing visual quality or character.

Summary

The proposed BESS facility would have limited visibility from most nearby public roads and other public viewing locations. Due to screening associated with existing orchards and off-site vegetation, and due to the nearby presence of multiple transmission lines and the existing PG&E Green Valley Substation, visible components would generally be limited to gen-tie poles and vertical substation frames and poles. Where these taller components would be visible, such as from Lapis Drive (KOP 2), the duration of views for motorists and other road users would be brief, and visible project components would neither dominate nor be particularly evident in the visual landscape. The collector substation and gen-tie line would introduce vertical elements, but these would be located adjacent to the existing PG&E Green Valley Substation, which already contributes vertical infrastructure to the established character of the area.

At more distant vantage points, such as along Holohan Road (KOP 3), the introduction of project components would be difficult to detect due to the visual screening associated with existing intervening orchards, presence of existing electrical transmission and substation infrastructure in the landscape, distance between Holohan Road users and the project site, lack of spatial and scale dominance of project components, and anticipated weak color and line contrasts within the visible landscape. Although the BESS facility would be dissimilar in use and form compared to nearby agricultural lands and residential development that occurs to the north and west, overall visibility of the facility would be limited due to screening associated with both perimeter project elements (e.g., noise mitigation wall and landscaping) and intervening orchards and electrical transmission and substation features. Based on the anticipated level of contrast presented in visual simulations and on the rationale provided above, the project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. Construction and operational project impacts to existing visual quality and character would be **less than significant**.

Although not required by CEQA due to the project's location in a non-urbanized area, an analysis of consistency with applicable local regulations was conducted and is presented in Table 3.13-4, below. As shown in the table, the project would be consistent with identified scenic quality policies.

Table 3.13-4. Scenic Quality Regulations Consistency Analysis

Policy	Consistency Analysis
Santa Cruz County General Plan Built Environment Element	
BE-4.1e (LCP): Require consideration of neighborhood character and transitions to surrounding development as a part of the design review process in the SCCC. Give careful attention to building height, massing, setbacks, landscaping, signage, access, fencing, drainage, parking, traffic patterns, visual impacts, and mitigation of potential nuisance factors. Accessory commercial uses, structures, and functions should be screened and sited away from residential parcels to provide visual compatibility and minimize impacts to adjacent properties.	**Consistent.** The project includes a 12- to 14-foot-high noise mitigation wall and a landscaped perimeter with native shrubs and trees. The facility's structures, including battery enclosure structures and substations, are limited to a maximum height of 25 feet, with most components significantly smaller in scale (e.g., battery containers at ~10 feet). Setbacks of at least 100 feet from property lines and roadways are proposed, and access to the facility would be provided via Minto Road, with emergency routes planned to avoid travel through residential areas. Stormwater management features, including biofiltration ponds and concrete drainage channels, would be incorporated to address drainage. Lighting would be minimal and motion activated to reduce nighttime visual impacts (see Appendix 2D, Lighting Plan). Based on the analysis presented in this section, most project components would be screened from view at the majority of public vantage points in the surrounding area. Visible components such as vertical hardware/elements at the project substations and gen-tie poles would result in weak visual contrasts because they would be partially screened and viewed alongside the existing, adjacent PG&E Green Valley Substation and several electrical transmission lines that traverse the project area landscape.
BE-4.1h Maintain development standards that encourage coordinated development between adjacent sites while maintaining an overall development design and scale that is appropriate for the location. Require master plans, planned unit developments, or specific plans for large-scale development projects to address connectivity improvements, shared parking, parcel merger where appropriate, and other land use and design considerations.	**Consistent.** The project is adjacent to the existing PG&E Green Valley Substation and is designed to interconnect directly with it. The project footprint occupies approximately 16 acres of a larger 47.4-acre parcel, with the remaining land placed under a long-term conservation easement. Although the project is not part of a Master Plan or Specific Plan, it incorporates multiple emergency access route options and internal circulation via gravel roads. No shared parking is required due to the facility's largely unstaffed operational nature, and no parcel merger is necessary because the project spans two contiguous parcels under unified control.
BE-4.2.2 (LCP) Site Design for Environmental Protection. Review new developments for compliance with SCCC Title 16 environmental ordinances. Siting and designs should minimize grading, avoid or provide mitigation for geologic hazards and sensitive habitats, reduce fire risk, conform to the physical constraints and topography of the site, and maintain natural drainage patterns. Streams should remain daylighted rather than piped, where possible, with development incentives or variances allowed to ensure feasibility and property owner support for open	**Consistent.** The project avoids steep slopes and is sited on flat agricultural land, minimizing grading and conforming to the site's topography. Stormwater management features—including concrete drainage channels, biofiltration ponds, and hydroseeded swales—are incorporated to maintain natural drainage patterns and prevent erosion. No streams are present on site and, as such, daylighting provisions are not applicable. The project includes fire suppression systems in each battery enclosure and emergency access routes, reducing fire risk. Sensitive habitats are avoided, and the project complies with Title 16 requirements for resource protection and safety standards.

Table 3.13-4. Scenic Quality Regulations Consistency Analysis

Policy	Consistency Analysis
streams. Development on slopes should be low profile and step down the hillside. Unnecessary grading for the purpose of meeting building height restrictions is prohibited.	
BE-4.2.4 (LCP) Wildlife-Compatible Development. Limit reflectivity, glare, and artificial light pollution from buildings and sites as practicable in order to preserve dark skies and reduce impacts to wildlife, especially in rural areas and over marine waters. Encourage landscapes that provide habitat for birds and wildlife as appropriate based on the location and intensity of development. Encourage the use of native plants and discourage the use of invasive species.	**Consistent.** The project includes minimal, motion-activated lighting for safety, which limits artificial light pollution and helps preserve dark skies in this rural area. The landscape plan incorporates native, non-invasive plant species such as coast live oak (*Quercus agrifolia)*, California coffeeberry (*Frangula californica*), coyote brush (*Baccharis pilularis*), and California poppy (*Eschscholzia californica*). No reflective building materials or high-glare surfaces are proposed, and the facility would be unstaffed during operation, further reducing nighttime activity and potential disturbance associated with lighting or, more generally, nighttime presence of project personnel.
Santa Cruz County General Plan Agriculture, Natural Resources + Conservation Element	
ARC-5.1.1 (LCP) Designation of Visual Resources. Designate on the General Plan/LCP Resources and Constraints Maps (Appendix F) and define visual resources as areas having regional public importance for their natural beauty or rural agricultural character. Include the following areas when mapping visual resources: vistas from designated scenic roads, Coastal Special Scenic Areas, and unique hydrologic, geologic, and paleontologic features identified in Goal 6. Ocean views, agricultural fields, wooded forests, open meadows, ridgetops, and mountain hillside views are also public scenic assets that should be identified and considered during development review permit processes.	**Consistent.** The project site is located on a 47.4-acre parcel currently in agricultural production (apple orchard) and is adjacent to the PG&E Green Valley Substation in a rural area of the Pajaro Valley Planning Area. The project design preserves the majority of the parcel as open space under a long-term conservation easement, retaining orchard trees outside the 16-acre development footprint. The site is not located along a designated scenic road, within a Coastal Special Scenic Area, or near unique hydrologic, geologic, or paleontological features identified in Goal 6. The project includes visual screening through native landscaping and a 12- to 14-foot-high noise mitigation wall to minimize visual impacts on surrounding areas.
ARC-5.1.2 (LCP) Development Within Visual Resource Areas. Recognize that designated visual resources of Santa Cruz County possess diverse characteristics that are worthy of protection. Require projects in visual resource areas to be evaluated against the context of their unique environments and regulate structure height, setbacks, materials, and design to protect these resources consistent with the objectives and policies of this section.	**Consistent.** Although the project site is located in a rural agricultural area with visual sensitivity, it is not within a formally designated scenic vista or mapped visual resource area, per Appendix F of the Santa Cruz County General Plan. However, the project design incorporates protective measures aligned with the policy's intent: structures are low profile (battery containers ~10 feet high), setbacks of 100 feet are maintained, and materials are nonreflective. A 12- to 14-foot-high noise mitigation wall and native landscaping buffer the facility from surrounding views, preserving the rural character and minimizing visual intrusion.
ARC-5.1.3 (LCP) Protection of Public Vistas and Scenic Assets. Protect significant public vistas and public scenic assets as	**Consistent.** Although the project site is located in a rural agricultural area with visual sensitivity, it is not within a designated scenic road, Coastal Special Scenic

Table 3.13-4. Scenic Quality Regulations Consistency Analysis

Policy	Consistency Analysis
identified in Policy ARC-5.1.1, even those that are not mapped and designated as visual resource areas, scenic roads, coastal special scenic areas, or other unique features, by minimizing disruption of landform and aesthetic character caused by grading operations, timber harvests, utility wires and poles, signs, inappropriate landscaping and structure design. Provide necessary landscaping to screen development that is unavoidably sited within these vistas. Proposed landscaping within public vistas should be sited and designed to retain existing public views of vistas and scenic assets especially for coastal designated visual resources.	Area, or mapped visual resource area. However, the project minimizes disruption to landform and aesthetic character by siting development on flat terrain, avoiding excessive grading, and retaining orchard trees outside the 16-acre development footprint. Visual impacts are further mitigated through the installation of a 12- to 14-foot-high noise mitigation wall and a landscaped perimeter using native, non-invasive plant species.
ARC-5.1.4 Preserving Natural Buffers. Preserve the vegetation and landform of natural wooded hillsides that serve as a backdrop for new development. Also comply with Policy ARC5.1.8 regarding protection of ridgetops and natural landforms.	**Consistent.** The project is sited on flat agricultural land and does not involve development on or near wooded hillsides, ridgetops, or prominent natural landforms. The design avoids excessive grading and retains orchard trees outside the 16-acre development footprint, preserving the natural character of the surrounding landscape.
ARC-5.1.5 (LCP) Preserving Agricultural Vistas. Preserve the aesthetic value of agricultural vistas. Encourage development to be consistent with the agricultural character of the community. Structures appurtenant to agricultural uses on agriculturally designated parcels are considered compatible with the agricultural character of surrounding areas.	**Consistent.** The project is located on a 47.4-acre parcel currently in agricultural production and is designed to occupy 16 acres, with the remaining land placed under a long-term conservation easement. Orchard trees outside the development footprint would be retained and managed, maintaining the visual continuity of the agricultural landscape. The facility's mostly low-profile structures, native landscaping, and perimeter screening further support visual compatibility with the surrounding rural setting.
ARC-5.1.8 (LCP) Protecting Ridgetops and Natural Landforms. Ensure that any development protects the scenic and visual character of ridgetops and prominent natural landforms such as cliffs, bluffs, dunes, rock outcroppings, and other significant natural features. In connection with discretionary review, apply the following criteria: (1) Development on ridgetops shall be avoided if other developable land exists on the property. (2) Do not approve development permits that allow the removal of trees when such removal would erode the silhouette of the ridgeline form. Consider the cumulative effects of tree removal on the ridgeline silhouette. (3) Restrict the height and placement of buildings and structures to prevent their projection above the	**Consistent.** The project is sited on flat agricultural land and does not involve development on or near ridgetops, cliffs, bluffs, dunes, or other significant natural topographical features. No tree removal is proposed that would affect ridgeline silhouettes, and the site design avoids projecting structures above any natural landform. Building heights are limited (battery containers ~10 feet, noise mitigation wall 12–14 feet), and exterior materials are nonreflective and generally screened by native vegetation.

Table 3.13-4. Scenic Quality Regulations Consistency Analysis

Policy	Consistency Analysis
ridgeline or treeline. Restrict structures and structural projections adjacent to prominent natural landforms. Ensure that any newly created parcel includes buildable locations such that new development can be integrated into the existing terrain and does not project above the ridgeline, in accordance with design review standards provided in SCCC Chapter 13.11. (4) Through review and approval of discretionary development permits, ensure that exterior materials and colors blend with the natural landform and tree backdrops.	
ARC-5.1.10 (LCP) Restoration of Scenic Areas. Require on-site restoration of visually blighted conditions commensurate with the size and scope of the project as a mitigating condition of approval for new development permits. Provide technical assistance for restoration of blighted areas.	**Consistent.** The project replaces a portion of an agricultural site with a visually screened, low-profile energy facility and includes substantial perimeter landscaping. This includes native tree and shrub planting, hydroseeded swales, and biofiltration ponds designed to improve site aesthetics and environmental function. The remaining undeveloped portion of the parcel would be placed under a long-term conservation easement, preserving open space and agricultural character.
ARC-5.2.1 (LCP) Designation of Scenic Roads. The following roads and highways are valued for their vistas. The public vistas from these roads shall be afforded the highest level of protection. State Highways 1. Highway 1 - from San Mateo County to Monterey County 2. Highway 9 – from Route 1 to Santa Clara County 3. Highway 17 – from Highway 1 to Santa Clara County 4. Highway 35 – from Highway 17 to San Mateo County 5. Highway 129 – from Highway 1 to San Benito County 6. Highway 152 – from Highway 1 to Santa Clara County 7. Highway 236 – from Highway 9 in Boulder Creek to Highway 9 at Waterman Gap (2) County Roads 1. Amesti Road – from Varni Road to Browns Valley Road 2. Beach Road – from Highway 1 to Palm Beach	**Consistent.** The project site is located on Minto Road in the Pajaro Valley Planning Area and is not adjacent to or visible from any of the designated scenic roads or highways listed in Policy ARC-5.2.1, such as Highway 1 (located 2.65 miles to the southwest of the project site), State Route 152 (located 1 mile to the east of the project site), Highway 129 (located 2.5 miles to the southeast of the project site), or Amesti Road. As such, the project does not affect a protected scenic corridor. Additionally, the project includes visual screening measures, such as a 12- to 14-foot-high noise mitigation wall and native landscaping, to minimize visual impacts from nearby public viewpoints, including public roads, and from State Route 152 (located nearly 1 mile to the east of the project site).

Table 3.13-4. Scenic Quality Regulations Consistency Analysis

Policy	Consistency Analysis
3. Bonita Drive and San Andreas Road – from Highway 1 to Beach Road 4. Bonny Doon Road – from Highway 1 to Pine Flat Road Browns 5. Valley Road – from Eureka Canyon Road to Hazel Dell Road 6. Buena Vista Drive – from San Andreas Road to Larkin Valley Road 7. Casserly Road – from Mile marker 1.75 to Highway 152 8. Corralitos Road – from Freedom Boulevard to Browns Valley Road 9. Empire Grade – from the Santa Cruz City limits to the end of Empire Grade 10. East Cliff Drive – from 33rd Avenue to 41st Avenue 11. Eureka Canyon Road – from Highland Way to Corralitos 12. Graham Hill Road – from Lockwood Lane to Highway 9 13. Hazel Dell Road – from Browns Valley Road to Mt. Madonna Road 14. Highland Way – from Summit Road to Eureka Canyon Road 15. Ice Cream Grade Martin Road – from Pine Flat to Ice Cream Grade 16. Mt. Hermon Road – from Scotts Valley City limits to Graham Hill Road 17. Mt. Madonna Road – from Gaffey Road to Hazel Dell Road 18. Pine Flat Road – from Bonny Doon Road to Empire Grade 19. Sand Dollar Drive Smith Grade 20. Summit Road – from Highway 17 to Highland Way Sunset Beach and Shell Road 21. Swanton Road – from Highway 1 at Davenport Landing to Highway 1 at Greyhound Rock	
ARC-5.2.2 (LCP) Development Visible from Rural Scenic Roads. In the viewsheds of rural scenic roads, require new discretionary development, including development envelopes in proposed land divisions, to be sited out of public view, designed for compatibility	**Consistent.** The project site is located on Minto Road, which is not designated as a rural scenic road under Policy ARC-5.2.1, and the site is not within the viewshed of any mapped rural scenic corridor. Nonetheless, the project incorporates visual design measures appropriate for rural settings, including low-profile structures

Table 3.13-4. Scenic Quality Regulations Consistency Analysis

Policy	Consistency Analysis
with area character, and/or obscured by natural landforms and/or existing vegetation. Where proposed structures on existing lots are unavoidably visible from scenic roads, identify those visual qualities worthy of protection and require the siting, architectural design and landscaping to mitigate the impacts on those higher value visual qualities.	(battery containers ~10 feet high), a 12- to 14-foot-high noise mitigation wall, and native landscaping buffers. These features block and/or obscure the facility from nearby public viewpoints and maintain compatibility with the surrounding agricultural and rural character of the area (3.13-7 Scenic Resources within 5 Miles).
ARC-5.2.4 Development Visible from the Highway Scenic Corridor. Require discretionary review for all development within the visual resource area of Highway 1, outside of the Urban and Rural Services Lines, as designated on the GP/LCP Visual Resources Map and apply the design criteria of the Coastal Zone Regulations ordinance.	**Not Applicable.** As shown in Figure 3.13-7, Highway 1 is located approximately 2.65 miles to the southwest of the project site, but project components would not be visible from this corridor. See Figures 3.13-2a and 3.13-2b, which depict the approximate visibility of proposed project BESS enclosures and gen-tie poles, respectively. As shown in the regional viewshed insets on the figures, neither the BESS enclosures nor the gen-tie poles would be visible from Highway 1 (intervening vegetation and off-site development, which is not accounted for in the viewshed analyses, would ensure there is no project component visibility from the highway). Therefore, although the project is geographically near Highway 1, it would not be visible from the highway and thus would not be subject to the requirements of Policy ARC-5.2.4.
ARC-5.2.5 (LCP) Landscaping Requirements. Grading and land disturbance projects involving more than 1,000 cubic yards that are visible from scenic roads shall conform to the following visual mitigation conditions of a discretionary grading and/or coastal development permit: 1. Blend contours of the finished surface with the adjacent natural terrain and landscape to achieve a smooth transition and natural appearance; and 2. Incorporate only characteristic or indigenous plant species appropriate for the area.	**Consistent.** The layout includes a 12- and 14-foot-high noise mitigation wall, which serves as visual screening elements and may mitigate the visual impact of the proposed facility, and incorporates characteristic, native landscaping along the project perimeter.
ARC-5.2.7 Design Review for Public Projects Visible from Scenic Roads. Require construction and development of any soundwalls and roadside amenities such as turnouts and vista points within or adjacent to Scenic Roads to be reviewed for consistency with the visual resource protection policies of this section and the Zoning Ordinance.	**Consistent.** Although not clearly visible from an identified scenic road, the project includes a 12- to 14-high foot noise mitigation wall on the north, east, and south sides of the facility. These noise mitigation wall is designed to mitigate operational noise and visually screen the facility from adjacent land uses, including residential and agricultural areas. The noise mitigation wall is buffered by native landscaping, including trees and shrubs selected for their screening capacity and ecological appropriateness. No turnouts or vista points are proposed as part of the project.

Table 3.13-4. Scenic Quality Regulations Consistency Analysis

Policy	Consistency Analysis
	The 20-foot-wide gravel access road and vehicular gates are internal to the site and do not alter the visual character of Minto Road or adjacent public views. The landscape plan includes a mix of native screening shrubs, shade-tolerant species, and tree plantings such as coast live oak, *Prunus ilicifolia* (holly leaf cherry), and *Lyonothamnus floribundus* (Santa Cruz Island ironwood). The project complies with Energy Storage Combining District regulations (Santa Cruz County Code Sections 13.10.405–409), which include landscape buffering and fencing requirements, maximum structure height limits (25 feet), setbacks from property lines and agricultural soils, and undergrounding of transmission lines where feasible.
ARC-6.1.1 (LCP) Protection and Designation of Significant Resources. Protect significant geological features such as caves, large rock outcrops, inland cliffs and special formations of scenic or scientific value, hydrological features such as karst topography, major waterfalls or springs, and paleontological features, through the environmental review process. Designate such sites on the General Plan/LCP Resources and Constraints Maps where identified.	**Consistent.** The project minimizes grading (the site is relatively flat) and landscape alteration by using existing road alignments where feasible and incorporating hydroseeded drainage swales, riprap, and concrete ditches to manage stormwater and erosion in a manner that complements the natural contours of the land. Additionally, the project retains orchard trees outside the project footprint that would preserve the visual character of the landscape. In addition, development of the site as proposed would not damage or otherwise degrade significant geological features, formations of scenic or scientific value, hydrologic features, or paleontological features.
ARC-9.1.8 (LCP) Open Space for Scenic Resources. Maintain policies and regulations for development to protect the character of open space areas valued for their scenic qualities, including natural buffer areas and ridgetops; unique hydrological, palaeontologic, and geologic features; agricultural fields; forests; and ocean vistas, beaches and coastal bluffs.	**Consistent.** The project is sited on a portion of a 47-acre agricultural property, with development limited to approximately 16 acres, while the remaining land, including active orchard areas, would be preserved and managed for continued agricultural use. The project avoids development on ridgetops, unique hydrologic or geologic features, and coastal vistas, and is located outside the coastal zone. Landscape plans incorporate native vegetation and maintain natural buffer areas around the facility, including a noise mitigation wall screened by trees and shrubs. Additionally, the project includes a long-term conservation easement over the undeveloped portion of the property, further ensuring protection of open space and agricultural character consistent with visual resource policies.
Santa Cruz County Code	
Chapter 13.11.07 (B)(5) - Views: 1. Development shall protect the public viewshed with appropriate siting of structures and maintenance of viewshed corridors from the public rights-of-way.	**Consistent.** The project is sited on a portion of a 47-acre agricultural property, with development limited to approximately 16 acres, while the remaining land, including active orchard areas, would be preserved and managed for continued agricultural use. Combined with siting the facility adjacent to an existing electrical substation

Table 3.13-4. Scenic Quality Regulations Consistency Analysis

Policy	Consistency Analysis
2. Development should minimize the impact on private views from adjacent parcels wherever practicable.	(and siting the facility distant from heavily trafficked public roads), preservation of surrounding orchards would help to minimize impacts to the public. In addition to serving the proposed BESS facility, Minto Road provides access to two residential properties to the immediate north of the northern boundary of the BESS facility site. The perimeter of the BESS facility would be lined by a 12- to 14 foot-high noise mitigation wall to attenuate facility noise. As shown on the Conceptual Landscape Plans (Appendix 2B), a row of existing orchards to the immediate south of Minto Road would be removed, and a basin and swale seed mix composed of native shrubs and grasses would be applied. A stormwater detention basin would also be constructed in the northeast corner of the BESS facility; however, this feature (and the facility noise mitigation wall to the immediate south of the basin) would be blocked from view by a collection of existing orchard trees that would be retained. Although development of the BESS facility and modifications to the existing orchard would be visible from the Minto Road–adjacent residences, BESS enclosures (approximately 10 feet in height; see Table 3.13-1 above) and other interior project components would be screened from view of the nearest local residents by the facility's noise mitigation wall. The noise mitigation wall itself would alter existing views; however, its introduction and presence in the landscape would be softened by the planting of new landscaping installed in front of the noise mitigation wall. Over time and as landscaping matures, the evolving character of the site's perimeter visible from Minto Road is intended to reduce overall impacts on views and visual quality.
Chapter 13.11.07 (C)(4)) - Lighting a) All site, building, security, and landscape lighting shall be directed onto the site and away from adjacent properties. Light sources shall not be visible from adjacent properties. Light sources can be shielded by landscaping, structure, fixture design, or other physical means. Building and security lighting shall be integrated into the building design. b) All lighted parking and circulation areas shall utilize low-rise light poles or light fixtures attached to the building. Light poles to a maximum height of 15 feet are allowed.	**Consistent.** As proposed, security lighting would be installed to provide adequate illumination around the project BESS yard and substation, including at points of entrance and exit. All non-task lighting would be shielded and directed downward to minimize the potential for glare, spillover onto adjacent properties, and skyglow, consistent with County of Santa Cruz standards. Motion-sensitive, directional security lights would be installed and operated only as needed for safety and security. Task-based lighting may be used during nighttime maintenance activities and would be manually operated and directed only at work areas. Both the perimeter noise mitigation wall and landscaping, in addition to the use of shielded light sources, would minimize potential for project lighting to be visible from adjacent properties.

Table 3.13-4. Scenic Quality Regulations Consistency Analysis

Policy	Consistency Analysis
c) Area lighting shall be high-pressure sodium vapor, metal halide, fluorescent, or equivalent energy-efficient fixtures.	Although the BESS facility does not include a distinct parking lot and would not be accessed by the general public, overhead lighting would be installed along the primary access road. As indicated in the project lighting plan, overhead lighting would be hooded (energy-efficient LED fixtures would be mounted to poles at a height of 20 feet) and may feature external glare shields to further prevent unnecessary light trespass and glare extending off site.
Chapter 13.11.07 (D)(d)) - Screening, Fences, Walls (i) When landscaping is required to screen views of a site or site uses, the plant material shall be appropriately sized and spaced so that a dense screen grows in a short period of time and views of objects on the opposite side are effectively screened. In narrow planting areas, trellises and vines may be used to screen development. (ii) All shrubs used for screening purposes shall be a minimum five-gallon size when planted. (iii) A fence or wall, when required as a screening device, shall be of solid wood or masonry, or other material, modulated and landscaped where appropriate to provide visual relief from continuous wall or fence surfaces. Fencing shall comply with SCCC 13.10.525.	**Consistent.** As shown on the Conceptual Landscape Plan, a dense line of 15-gallon-sized trees (4 to 5 feet high at install) would be planted and would help to screen views of the perimeter noise mitigation wall. Facility trees would be supplemented with screening shrubs including coyote brush, California coffeeberry, and toyon, and these lower-scale plantings would aid in screening the noise mitigation wall during the early years of facility operations. Combined with areas on the project site where existing orchards would remain in place, proposed landscaping to be installed around the facility perimeter would help to provide visual relief from a continuous wall surface.

Notes: LCP = Local Coastal Program; PG&E = Pacific Gas and Electric Company; SCCC = Santa Cruz County Code.

Criterion 3.13-4 Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less than Significant. Santa Cruz County Code (County Code) Chapter 13.11 establishes regulations for outdoor lighting to protect residential properties and scenic resources. It requires that lighting be designed to minimize glare, light spill, and visual disruption to adjacent properties and public viewsheds. All exterior lighting must be compatible with the surrounding neighborhood character and must be shielded and directed downward to prevent direct glare into residential windows, outdoor living areas, and sensitive natural environments. The County's Design Guidelines emphasize the use of attractive, functional fixtures and lighting levels appropriate to the site context, particularly in scenic areas, coastal zones, and rural communities (County of Santa Cruz 2022b).

Nighttime construction or maintenance may be required for certain activities, but noisy construction work would occur during the hours permitted by the County's Noise Ordinance (County Code Chapter 8.30). Specifically, construction noise is considered offensive if it occurs between 10:00 p.m. and 8:00 a.m. and is either within 100 feet of a building regularly used for sleeping, clearly discernible at 100 feet from the property line, or exceeds 60 decibels at the property line. Therefore, construction activities would be scheduled to avoid these thresholds unless otherwise authorized under applicable provisions. When nighttime work is necessary, temporary lighting would be directed toward active work areas and away from sensitive receptors such as nearby residences and habitat to minimize visual and noise impacts.

Security lighting would be installed to provide adequate illumination around the BESS yard and substation, including at points of entrance and exit. All non-task lighting would be shielded and directed downward to minimize the potential for glare, spillover onto adjacent properties, and skyglow, consistent with County standards. Motion-sensitive, directional security lights would be installed and operated only as needed for safety and security. Task-based lighting may be used during nighttime maintenance activities and would be manually operated and directed only at work areas. As indicated in the project lighting plan (Appendix 2D), site lighting around the perimeter of the facility would range in illuminance levels from 0.0 foot-candles (where no lighting Is proposed/located nearby, such as along the northern boundary of the project substation) to approximately 1.5 foot-candles at the base of proposed light features/poles. Due to facility setbacks from Minto Road, distance between light sources and residential receptors in the surrounding area, and the presence of the perimeter noise mitigation wall and landscaping, facility lighting would not result in substantial light trespass off the project site or a new source of substantial light or glare.

As proposed, the finishes of exterior materials, including battery containers and substation equipment, would consist of dulled, nonreflective surfaces not typically associated with the generation of substantial glare. No glass façades or polished metal surfaces are proposed for project components.

Based on review of the project's lighting design and exterior materials, implementation of the project would not result in the surrounding area being classified as a less-restrictive environmental lighting zone. Further, the project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. As such, construction and operational impacts to day and nighttime views associated with new sources of light and glare would be **less than significant**.

3.13.3 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 proposed project (PRC Section 21083; CCR Title 14, Sections 15064[h], 15065[c], 15130, and 15355). The CEQA Guidelines further note that the cumulative impact from several projects is the change in the environment that results from the incremental impact of a project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative effects can result from individually minor, but collectively significant, projects taking place over a period of time (CCR Section 15355).

The landscape in the region surrounding the project demonstrates evidence of past and present visible disturbances related to agriculture, electrical substation and transmission infrastructure, transportation infrastructure, and residential and commercial development. Based on the changes to identified views depicted in visual simulations and with the implementation of Project Design Features referenced above and described below in Section 3.13.4, Mitigation Measures, project effects on existing scenic vistas, scenic resources within a state scenic highway, visual quality and character, and day and nighttime views are not anticipated to be substantially altered. There are no known planned or proposed future projects within the local viewshed that would create cumulative visual impacts in combination with the project. References reviewed during preparation of this cumulative impacts analysis included the County Planning Department's Major Project Applications page (County of Santa Cruz 2026a) and the County's Discretionary Permits map viewer (County of Santa Cruz 2026b). According to these resources, the nearest planned or proposed discretionary projects to the project site include (1) PG&E installation of new wireless communication equipment, involving a 12-foot vertical extension to an existing foot-lattice tower (approximately 0.65 miles east of the project site); (2) recognition of an existing commercial horse boarding facility with riding arenas on agricultural lands on the south side of Pioneer Road (approximately 1.6 miles to the northwest of the project site); (3) two residential developments on separate properties located along Lakeview Road (residential homes are commonplace along Lakeview Road) (listings in the County's Discretionary Permits map are approximately 1.7 and 1.9 miles from the project site, respectively); and (4) a proposal to recognize 9,000 cubic yards of fill (approximately 1.97 miles southeast of the project site). These five projects are the only projects noted on the County's Discretionary Permits map within 2 miles of the project site. As a result, and due to the project's limited viewshed and anticipated weak contrasts as reflected in the project visual simulations, the project **would not cause significant cumulative effects** to visual resources.

3.13.4 Mitigation Measures

Project impacts on existing views and visual character would be avoided or minimized to the extent feasible through Project Design Features, such as the construction of a 12- to 14-foot-high tall noise mitigation wall and targeted installation of site perimeter landscaping. During operations, the wall would block or partially screen BESS enclosures from the view of nearby residents and motorists provided with a normal viewing angle (i.e., view from a location at a similar elevation as the proposed BESS facility) to the project. Site landscaping would partially screen from view and soften the introduction of the noise mitigation wall to the local visual landscape. Furthermore, intervening vegetation and distance would obscure most project components from view, with minimal perceptible change at KOPs 1, 2, and 3 and generally weak visual contrast throughout the immediate surrounding area (Appendix 3.13).

No additional measures beyond those incorporated into project design are proposed, as the project would result in less-than-significant impacts to views and visual character.

3.13.5 Laws, Ordinances, Regulations, and Standards

This section lists and discusses the visual-resources-related LORS that apply to the project. Table 3.13-5 summarizes the LORS relevant to the project.

Table 3.13-5. Laws, Ordinances, Regulations, and Standards Applicable to Visual Resources

Jurisdiction	LORS	Applicability	Project Conformity	Opt-In Application Reference
State	California Environmental Quality Act (CEQA)	Requires state and local government agencies to inform decision makers and the public about the potential environmental impacts of proposed projects and to reduce, avoid, or minimize potentially significant environmental impacts to the extent feasible.	**Yes**. Refer to Section 3.13.2.3, which presents an aesthetics analysis in accordance with CEQA.	Section 3.13.2.3 Section 3.13.5.2
State	State Scenic Highway Program	The Scenic Corridor Protection Program is made up of adopted ordinances to preserve the scenic quality of the corridor or document such regulations that already exist in various portions of local codes.	**Yes**. There are no state scenic highways in the surrounding area from which views of the project site and proposed project components would be available. See also Section 3.13.2.3 for analysis of potential impacts to scenic resources within the viewshed of a state scenic highway.	Section 3.13.2.3, Criterion 3.13-2 Section 3.13.5.2
Local	Santa Cruz County General Plan	Provides a policy framework to guide development and growth in the unincorporated areas of Santa Cruz County.	**Yes**. Refer to Section 3.13.2.3 and Table 3.13-4 for analysis of project conformity with applicable policies of the Santa Cruz County General Plan.	Section 3.13.2.3, Criterion 3.13-3 Section 3.13.5.3
Local	Santa Cruz County Code	Provides the framework to implement the General Plan and Local Coastal Program, protect the character of areas of the County, and establish provisions to regulate the location, height, bulk, and size of buildings and structures.	**Yes.** Refer to Section 3.13.2.3 and Table 3.13-4 for analysis of project conformity with applicable regulations of the Santa Cruz County Code.	Section 3.13.2.3, Criterion 3.13-3 Section 3.13.5.3

Note: LORS = Laws, Ordinances, Regulations, and Standards.

3.13.5.1 Federal

No federal visual-resource-related LORS exist that are relevant to the project assessment area.

3.13.5.2 State

California Environmental Quality Act

CEQA generally requires state and local government agencies to inform decision makers and the public about the potential environmental impacts of proposed projects and to avoid or minimize potentially significant environmental impacts to the extent feasible. The laws and rules governing the CEQA process, discussed above, are contained in the CEQA statute (PRC Section 21000 et seq.), the CEQA Guidelines (14 CCR 15000 et seq.), published court decisions interpreting CEQA, and locally adopted CEQA procedures.

Refer to Section 3.13.2.3, which presents an aesthetics analysis in accordance with CEQA.

State Scenic Highway Program

The California Department of Transportation (Caltrans) manages the State Scenic Highway Program, detailed in Streets and Highways Code Section 260. A highway may be designated as scenic depending on how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view (Caltrans 2008). To become an officially designated scenic highway, a local jurisdiction must adopt a Scenic Corridor Protection Program for the eligible state scenic highway, apply to Caltrans for scenic highway approval, and receive notification from Caltrans that the highway has been designated as a scenic highway. The Scenic Corridor Protection Program is made up of adopted ordinances to preserve the scenic quality of the corridor or document such regulations that already exist in various portions of local codes. State and county roads can be designated as scenic highways.

State Route 152 and Highway 1 (eligible state scenic highways) are the nearest state scenic highway facilities to the project site. State Route 152 is located approximately 1.0 miles to the east of the project site, and Highway 1 is located approximately 2.65 miles to the southwest of the project site (Caltrans 2025).

3.13.5.3 Local

Santa Cruz County General Plan

The County General Plan provides a policy framework to guide development and growth in the unincorporated areas of the County. Specifically, the Agriculture, Natural Resources + Conservation Element includes policies aimed at long-term conservation and sustainable management of the County's natural and cultural resources, agricultural lands, and open space, and discusses the protection of visual resources. The Built Environment Element includes policies on land use and design considerations aimed at guiding visually appealing and sustainable development.

Relevant policies of the County General Plan are included above in Table 3.13-4.

Santa Cruz County Code

The County Code is a collection of laws and regulations that govern various aspects of life in the County. The County Code is designed to ensure the public peace, health, and safety of residents by providing clear guidelines and standards for behavior, development, and operations. The following regulations from the County Code are relevant to the project:

- **Views:** The following considerations are provided in Chapter 13.11.07 (B)(5):
  a) Development shall protect the public viewshed with appropriate siting of structures and maintenance of viewshed corridors from the public rights-of-way.
  b) Development should minimize the impact on private views from adjacent parcels wherever practicable.
- **Lighting:** The County's Site, Architectural, and Landscape Development and Design Review regulations require the following related to lighting (see Chapter 13.11.07 [C][4]):
  d) All site, building, security, and landscape lighting shall be directed onto the site and away from adjacent properties. Light sources shall not be visible from adjacent properties. Light sources can be shielded by landscaping, structure, fixture design, or other physical means. Building and security lighting shall be integrated into the building design.
  e) All lighted parking and circulation areas shall utilize low-rise light poles or light fixtures attached to the building. Light poles to a maximum height of 15 feet are allowed.
  f) Area lighting shall be high-pressure sodium vapor, metal halide, fluorescent, or equivalent energy-efficient fixtures.
- **Screening, Fences, Walls** (see Chapter 13.11.07 (D)(d)):
  (i) When landscaping is required to screen views of a site or site uses, the plant material shall be appropriately sized and spaced so that a dense screen grows in a short period of time and views of objects on the opposite side are effectively screened. In narrow planting areas, trellises and vines may be used to screen development.
  (ii) All shrubs used for screening purposes shall be a minimum five-gallon size when planted.
  (iii) A fence or wall, when required as a screening device, shall be of solid wood or masonry, or other material, modulated and landscaped where appropriate to provide visual relief from continuous wall or fence surfaces. Fencing shall comply with SCCC 13.10.525.

The project would be consistent with the above regulations, as discussed above in Table 3.13-4.

3.13.6 Agencies and Agency Contacts

No staff from the California Energy Commission or any other local or state agency were contacted during preparation of this visual resource evaluation.

3.13.7 Permits and Permit Schedule

There are no permits related to visual resources that are required to construct the project. The California Energy Commission will work with the County on review of this application to ensure compliance with County policies and ordinances related to visual resources and design plans, including the landscape plan.

3.13.8 References

Caltrans (California Department of Transportation). 2008. "California State Scenic Highways: Scenic Highway Guidelines." Accessed October 2025. https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways.

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County of Santa Cruz. 2026b. Discretionary Permits [GIS map viewer]. Santa Cruz County Planning Department. Accessed April 2026. https://sccgis.maps.arcgis.com/apps/instant/nearby/index.html?appid=fc602b7f6458486eb1e2f5955b4789d8&sliderDistance=1.

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Photo A

Photo B

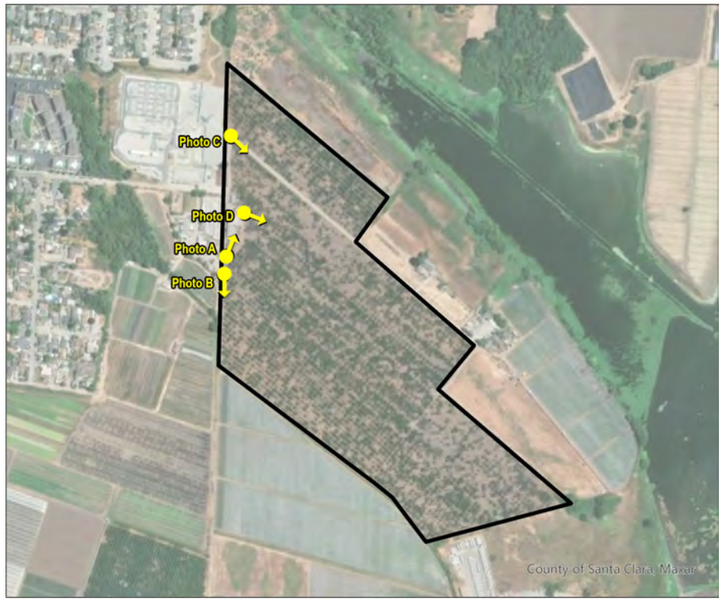

Photo C

Photo D

SOURCE: Dudek 2024

FIGURE 3.13-1

Project Site: Existing Conditions

Seahawk Battery Energy Storage System Project

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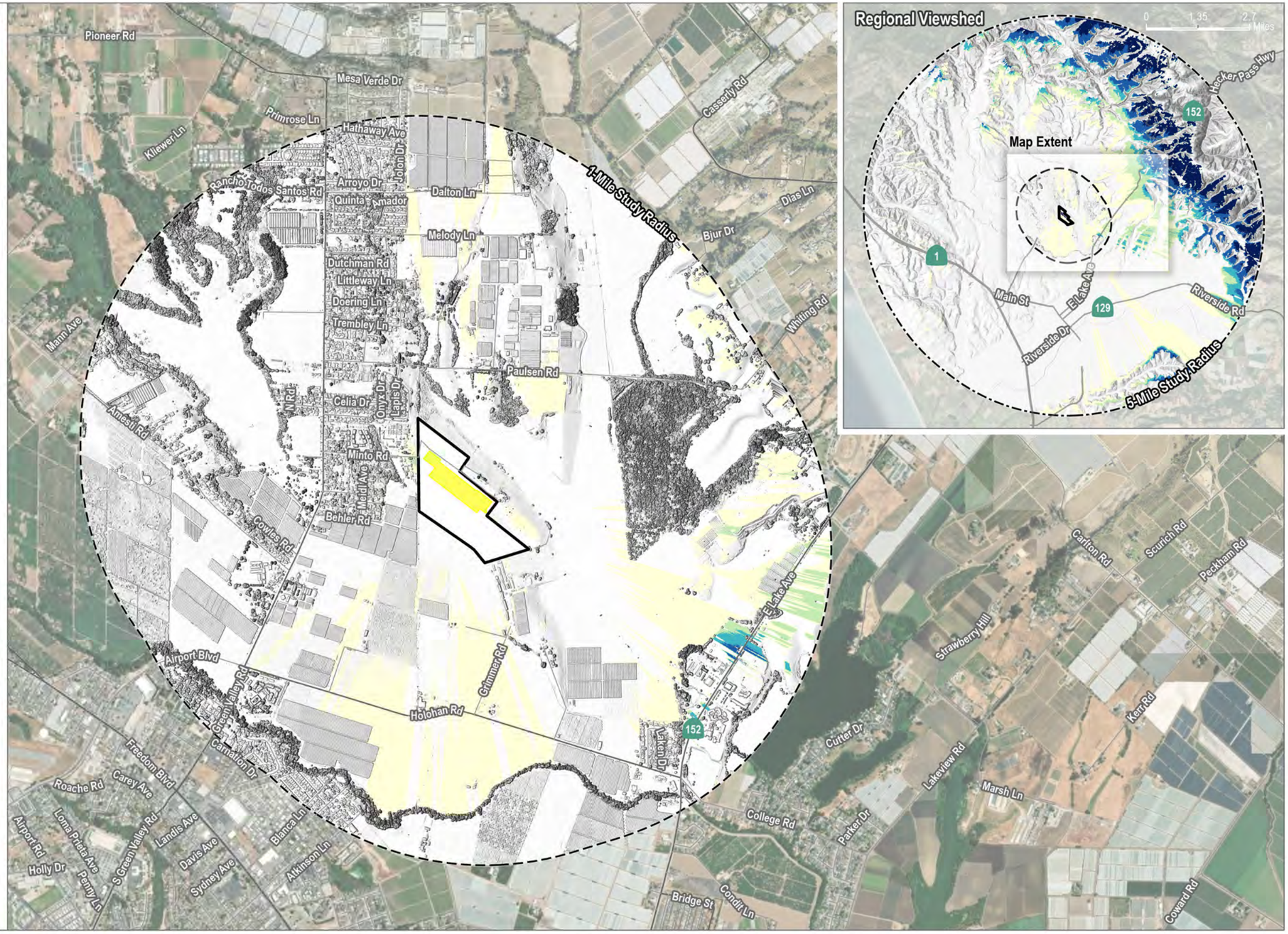
- Project Boundary
- Local Study Area (1-mile radius)
- Regional Study Area (5-mile radius) (see inset)
- BESS Footprint

Percent of BESS Enclosures Visible

- 1% to 20%
- 21% to 40%
- 41% to 60%
- 61% to 80%
- 81% to 100%

Note: Visibility analysis assumes a 10-foot BESS height and a 5.5-foot observer eye level. Enclosure visibility accounts for a proposed 12–14-foot soundwall. The local study area (1-mile radius) includes above-ground features such as trees and structures; the regional study area (5-mile radius) does not and therefore represents a worst-case condition.



SOURCE: Esri Imagery, USGS Digital Terrain

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0 900 1,800 Feet

FIGURE 3.13-2a

Viewshed Analysis: BESS Enclosures

Seahawk Visual Resources

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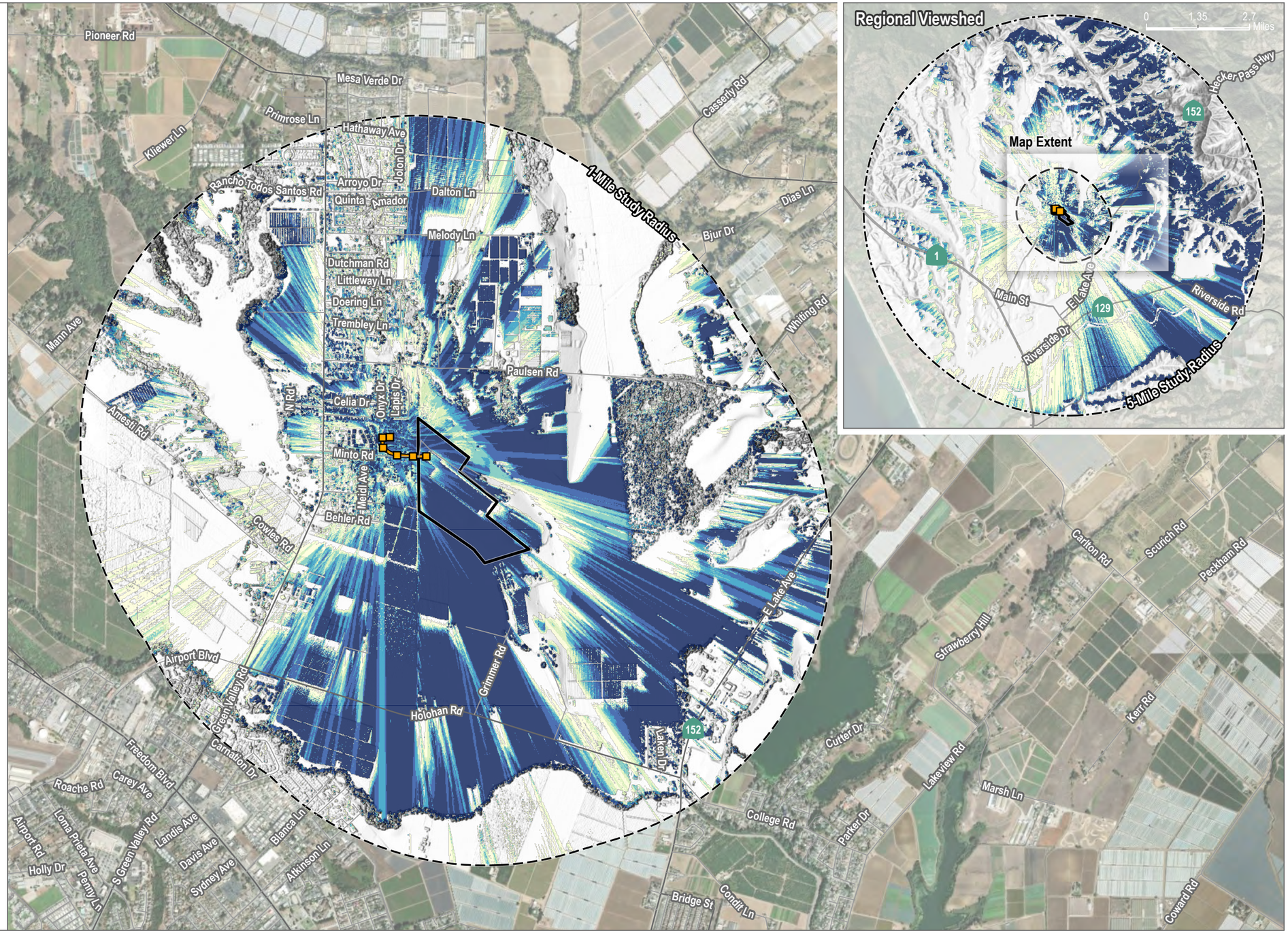
- Project Boundary
- Local Study Area (1-mile radius)
- Regional Study Area (5-mile radius) (see inset)
- Gen Tie Pole
- Gen Tie Line

Gen Tie Pole Visibility

- 1 Pole Visible
- 2 Poles Visible
- 3 Poles Visible
- 4 Poles Visible
- 5 Poles Visible
- 6 Poles Visible

Note: Visibility analysis assumes 60-foot Gen-Tie pole heights (50-foot for the eastern-most pole) and a 5.5-foot observer eye level. The local study area (1-mile radius) includes above-ground features such as trees, structures, and the proposed 12–14-foot sound wall; the regional study area (5-mile radius) does not and therefore represents a worst-case condition.



SOURCE: Esri Imagery, USGS Digital Terrain

DUDEK 0 900 1,800 Feet

FIGURE 3.13-2b

Viewshed Analysis: Gen-Tie Poles

Seahawk Visual Resources

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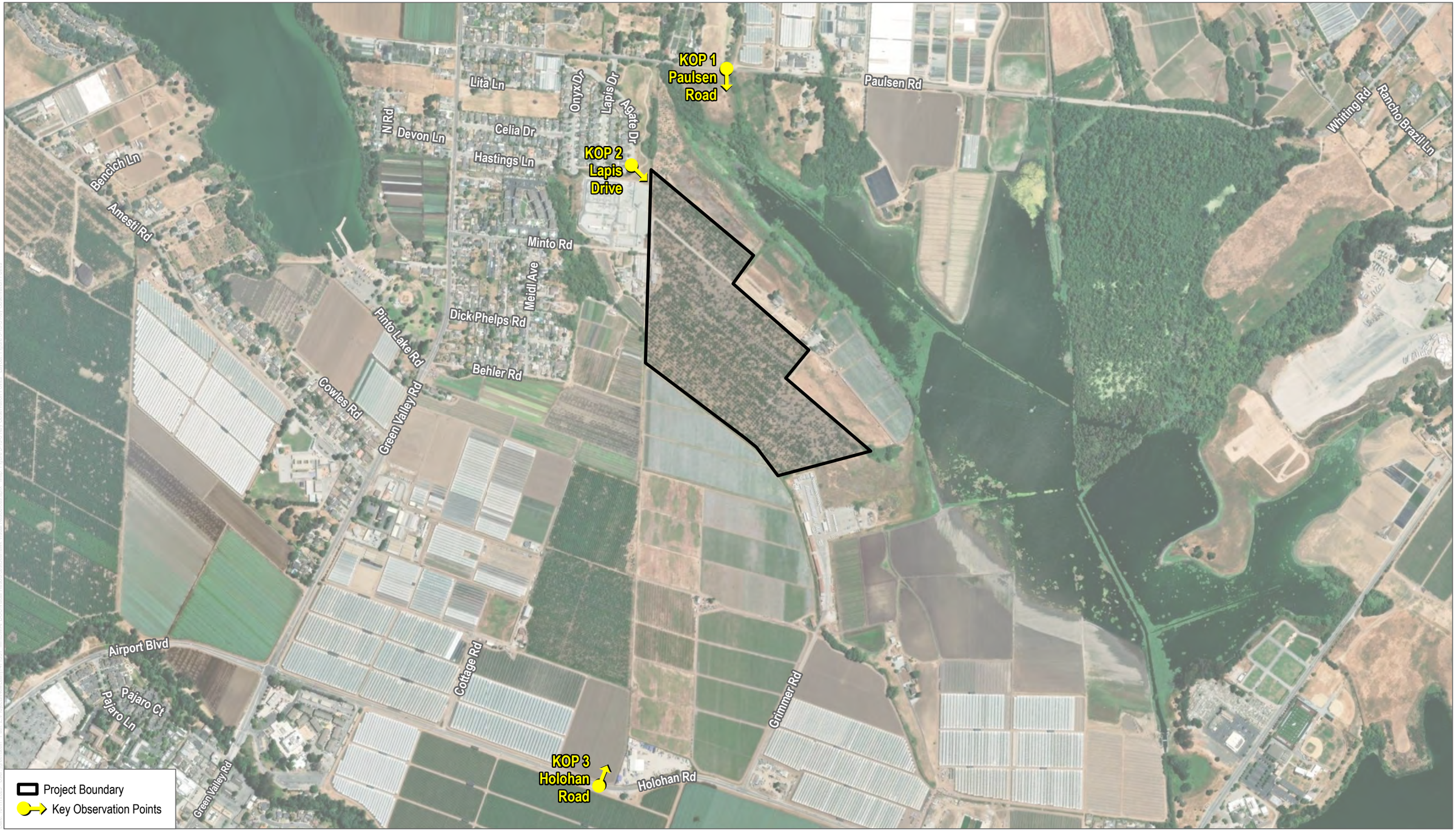

SOURCE: Maxar 2024; Open Street Map 2019

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0 400 800 Feet

FIGURE 3.13-3

Key Observation Points

Seahawk Battery Energy Storage System Project

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View to the south from Paulsen Road (approximately 0.3 mile from Proposed BESS Site)

FIGURE 3.13-4a

Key Observation Point 1: Paulsen Road (Existing Conditions)

Seahawk Battery Energy Storage System Project

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Visual Simulation of the Project (BESS enclosures blocked from view by intervening vegetation)

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FIGURE 3.13-4b

Key Observation Point 1: Paulsen Road (Visual Simulation with Colorized Inset)

Seahawk Battery Energy Storage System Project

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View to the southeast from Lapis Drive (approximately 630 feet from proposed substation site)

FIGURE 3.13-5a

Key Observation Point 2: Lapis Drive (Existing Conditions)

Seahawk Battery Energy Storage System Project

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Visual Simulation of the Project (BESS enclosures blocked from view by intervening vegetation)

FIGURE 3.13-5b

Key Observation Point 2: Lapis Drive (Visual Simulation with Colorized Inset)

Seahawk Battery Energy Storage System Project

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View to the northeast from Holohan Road (approximately 0.73 miles from Proposed BESS site)

FIGURE 3.13-6a

Key Observation Point 3: Holohan Road (Existing Conditions)

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Visual Simulation of the Project (components obscurred by distance and presence of existing substation facility)

FIGURE 3.13-6b

Key Observation Point 3: Holohan Road (Visual Simulation with Colorized Inset)

Seahawk Battery Energy Storage System Project

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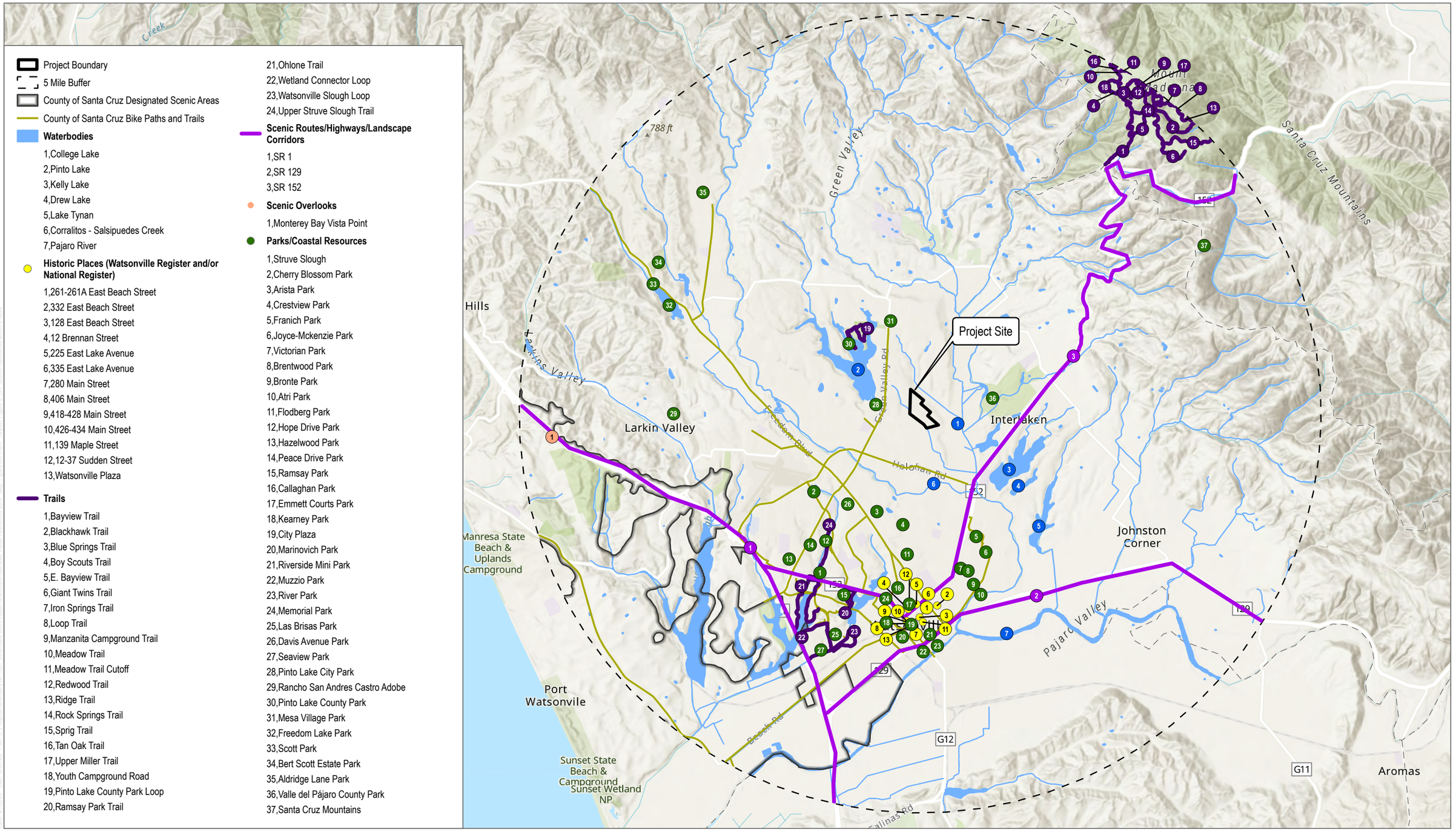

SOURCE: County of Santa Cruz; County of Santa Clara; Esri 2024; USFWS NWI 2024

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FIGURE 3.13-7

Scenic Resources within 5 miles of Project Site

Seahawk Battery Energy Storage System Project

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3.14 Waste Management

This section includes the expected potential effects on human health and the environment from nonhazardous and hazardous waste generated by the Seahawk Battery Energy Storage System (project). The proposed project would consist of a 200-megawatt (MW) battery energy storage system (BESS) facility using lithium-iron phosphate batteries installed in racks inside prefabricated energy storage containers. The primary components of the project include battery storage containers, inverters and transformers, an on-site collector substation (project substation), a generation interconnection (gen-tie) line, an operations and maintenance (O&M) building, a fire protection system, access improvements, stormwater management, a noise mitigation wall, Supervisory Control and Data Acquisition (SCADA) system, and temporary construction laydown areas. The project would interconnect from the on-site collector substation to the adjacent Pacific Gas and Electric Company (PG&E) Green Valley Substation via a 115-kilovolt (kV) gen-tie transmission line.

This evaluation of waste management includes the following elements:

- Section 3.14.1 describes project site investigations and the nonhazardous and hazardous waste facilities that would serve the project.
- Section 3.14.2 describes the project's environmental analysis in terms of waste and waste disposal sites.
- Section 3.14.3 discusses potential cumulative effects.
- Section 3.14.4 describes mitigation measures that should be considered during project construction, operation, maintenance, and decommissioning.
- Section 3.14.5 presents laws, ordinances, regulations, and standards (LORS) that apply to the generated waste.
- Section 3.14.6 lists the agencies that have jurisdiction over the generated waste and specifies who to contact in those agencies.
- Section 3.14.7 describes permits required for generated waste and a schedule for obtaining those permits.
- Section 3.14.8 provides the references used to prepare this subsection.

The following environmental setting and impact evaluation is based in part on the following project-specific technical report, included as an appendix to this application:

- Appendix 3.5A – Phase I Environmental Site Assessment, dated November 2025

A summary of the waste management evaluation is provided in the table below.

		Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:					
1	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?	☐	☐	☒	☐

3.14.1 Affected Environment

This subsection discusses the condition of the site and identifies the nonhazardous and hazardous waste facilities that would serve the project.

The project would be located in unincorporated Santa Cruz County (County), California, approximately 1 mile north of the City of Watsonville and east of the intersection of Minto Road and Green Valley Road. The project is on an approximately 16-acre site on a 47.4-acre property. The BESS site is comprised of two parcels (Assessor's Parcel Numbers 051-101-77 and 051-101-78). The project would be adjacent to PG&E's Green Valley Substation east of Green Valley Road. The project would interconnect to the Green Valley Substation from the proposed on-site collector substation, via an approximately 0.21-mile, 115 kV gen-tie. The gen-tie line would cross Minto Road, then continue west, parallel to the existing Minto Road right-of-way. The gen-tie would then route northwest and continue parallel to the boundaries of the Green Valley Substation until turning east to reach the Point of Interconnection at the Green Valley Substation. The line would be installed underground from the project substation to the Point of Change of Ownership at an overhead riser pole on the PG&E parcel, and an overhead line would connect to the Point of Interconnection at the PG&E Green Valley Substation. The property currently is in agricultural production with an apple orchard. The property is bound by Minto Road to the north and northwest, the Green Valley Substation to the northwest, the Transportation Office of Pajaro Valley Unified School District to the south, and agricultural uses to the east and south.

3.14.1.1 Site Investigations

Existing site conditions were captured in a Phase I Environmental Site Assessment (ESA) conducted by EBI Consulting (Appendix 3.5A). The Phase I ESA was conducted in accordance with methods prescribed by ASTM E1527-21, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process. The Phase I ESA did not identify any recognized environmental conditions (RECs), historical RECs, controlled RECs, significant data gaps, or de minimis conditions in connection with parcels related to the project.

The Phase I ESA identified the following item associated with the site, which was considered a business environmental risk: The site has historically been used for agricultural orchard purposes. A potential for on-site usage of agricultural chemicals, such as pesticides, herbicides, and fertilizers, was identified. EBI noted that it has been their experience that there is a low potential for soil contamination at concentrations in excess of regulatory thresholds as a result of the use of persistent pesticides/herbicides from normal crop application. The planned installation of the proposed BESS facility may involve limited ground disturbance and off-site disposal of subsurface soils, through which pesticide and/or herbicide impacted soil may be encountered. EBI recommended limited subsurface investigation prior to any site redevelopment and the implementation of a soil management plan if any impacted soil is identified.

Additional information regarding subsequent soil investigations and mitigation measures can be found in Section 3.5, Hazardous Materials Handling, and Appendices 3.5D and 3.5E.

3.14.1.2 Solid Waste Disposal Facilities

Information about solid waste facilities, operations, and disposal sites was obtained from the California Department of Resources Recycling and Recovery (CalRecycle) Solid Waste Information System (CalRecycle 2025a). Based on a review of this information, there are nine active solid waste disposal facilities within Santa Cruz County (CalRecycle

2025a). Table 3.14-1 presents a summary of solid waste disposal facilities within the vicinity of the project site. Based on a review of CalRecycle's Solid Waste Information System data, the City of Santa Cruz Resource Recovery Facility has 13 reported enforcement actions: 2 active, 7 complete, and 4 superseded. The two active enforcement actions at the City of Santa Cruz Resource Recovery Facility are listed as gas monitoring and control enforcement actions. The City of Watsonville Landfill 11 completed enforcement actions. The Buena Vista Drive Sanitary Landfill has 16 enforcement actions: 11 complete and 5 superseded.

Table 3.14-1. Solid Waste Disposal Facilities in the Vicinity of the Project

Landfill/ Transfer Station	Location	Class	Waste Types	Permitted Capacity (cubic yards)	Remaining Capacity (cubic yards)	Permitted Throughput (tons per day)	Estimated Closure
City of Santa Cruz Resource Recovery Facility	605 Dimeo Lane Santa Cruz, California 95060 (approximately 23.6 miles west of the project site)	III	Wood waste, tires, sludge (biosolids), mixed municipal, metals, inert, industrial, green materials, dead animals, construction/demolition	10,484,325	5,322,000	535	1/1/2037
City Of Watsonville Landfill	730 San Andreas Road Watsonville, California 95076 (approximately 7.5 miles southwest of the project site)	III	Construction/demolition, sludge (biosolids), mixed municipal, agricultural	2,437,203	1,098,980	275	12/31/2029
Buena Vista Drive Sanitary Landfill	1231 Buena Vista Dr Watsonville, California 95076 (approximately 5.2 miles southwest of the project site)	II,III	Wood waste, tires, sludge (biosolids), mixed municipal, metals, inert, industrial, green materials, dead animals, contaminated soil, construction/demolition, agricultural	7,537,700	1,766,005	838	7/1/2031

Source: CalRecycle 2025a.

3.14.1.3 Hazardous Waste Disposal Facilities

California has two active Class I landfill facilities that accept hazardous waste: Waste Management Kettleman Hills Landfill and Clean Harbor's Buttonwillow Landfill (DTSC 2025). Class I landfill facilities vary considerably in what they can do with the hazardous waste they receive. Some waste disposal facilities can only store waste; some can treat the waste to recover usable products; and others can dispose of the waste by incineration, deep-well injection, or landfilling. The State of California does not permit the incineration and deep-well injection disposal of hazardous waste. The following includes a summary of the Class I landfills available for disposal in California:

Waste Management Kettleman Hills Landfill. This landfill is on a 1,600-acre parcel that has 695 acres of permitted land for management of federal and state-listed hazardous wastes and municipal solid wastes. According to the 2003 Final Combination Permit, this landfill accepts Class I and II waste, including all hazardous waste except radioactive, medical, and unexploded ordnance (DTSC 2025). A comprehensive list of all hazardous waste accepted is included in Appendix A of the Kettleman Hills Landfill Part B permit. Based on the aforementioned list, all anticipated hazardous waste generated by the project is accepted by Kettleman Hills Landfill (DTSC 2025). The Kettleman Hills facility currently has three operational landfills: (1) B-17 is permitted to have a 17.8-million-cubic-yard capacity and is classified as a Class II/III landfill; (2) B-18 is permitted to have a 15.6-million-cubic-yard capacity and is classified as a Class I/II landfill; and (3) B-19 is permitted to have a 7.7-million-cubic-yard capacity and is classified as a Class II/III landfill. Permit renewal for the facility is currently being reviewed by the Department of Toxic Substances Control and is expected to have an updated closure date of January 2055. The landfill has no active enforcement actions. The landfill is approximately 160 miles southeast of the project site.

Clean Harbors Buttonwillow Landfill. This landfill is permitted at 13.25 million cubic yards and can accept 10,500 tons per day (CalRecycle 2025a). The landfill is permitted to accept waste until 2040 (CalRecycle 2025a). Clean Harbors Buttonwillow has been permitted to manage a wide range of hazardous wastes, including Resource Conservation and Recovery Act (RCRA) hazardous wastes, California hazardous waste, and nonhazardous waste for stabilization treatment, solidification, and landfill. The landfill can handle waste in bulk (solids and liquids) and in containers. Typical waste streams include nonhazardous soil, California hazardous soil, hazardous soil for direct landfill, hazardous waste for treatment of metals, plating waste, hazardous and nonhazardous liquid, and debris for microencapsulation (CalRecycle 2025a). The landfill has no reported enforcement actions. The landfill is approximately 196 miles southeast of the project site.

3.14.2 Impact Analysis

3.14.2.1 Methodology

The information presented is based on data obtained from the State of California about the capacity of landfills, Phase I ESA, and other readily available resources provided online. Potential direct and indirect project impacts related to waste management were evaluated against the California Environmental Quality Act (CEQA) significance criteria and are discussed below. The impact analysis evaluates potential project impacts during project construction, operation, and decommissioning.

3.14.2.2 Impact Evaluation Criteria

Environmental analysis for waste management is in accordance with the criterion from the CEQA Guidelines Section 15002(g), Appendix G. This section evaluates the project against the following criterion. Would the project:

1. 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? The potential risks or hazards posed by the transportation of hazardous materials, including hazardous wastes, are described and analyzed in Section 3.5.

3.14.2.3 California Environmental Quality Act Appendix G Assessment Criteria

Criterion 3.14-1 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?

Construction and Decommissioning

Less than Significant. During the construction phases, the project would generate nonhazardous and hazardous waste. As discussed in Chapter 2, Project Description, project construction would require approximately 24 months to complete, including testing and commissioning. Table 3.14-2 presents a summary of estimated potential waste streams created by construction activities. The quantities listed in Table 3.14-2 are estimates and are subject to change based on design modifications or market conditions.

Table 3.14-2. Potential Waste Generated During Construction

Waste	Origin	Composition	Classification	Disposal	Estimated Quantity
Nonhazardous Waste					
Scrap wood, plastic, paper, etc.	Construction	Normal refuse	Nonhazardous	Recycle and/or dispose of at a Class II or III landfill	18 tons
Concrete waste	Construction	Solids	Nonhazardous	Recycle and/or dispose of at a Class II or III landfill	37 tons
Scrap metal	Construction	Parts, wire, etc.	Nonhazardous	Recycle and/or dispose of at a Class II or III landfill	37 tons
Soil/rock	Excavation/grading	Topsoil	Nonhazardous	Recycle and/or dispose of at a Class II or III landfill	Variable*
Wastewater					
Sanitary waste	Portable toilets	Liquid	Nonhazardous	Removed by contracted sanitary service	91,430 gallons
Hazardous Waste					
Empty hazardous material containers	Construction	Drums and containers	Hazardous and nonhazardous	Dispose of containers <5 gallon as normal refuse; return containers >5 gallons to vendors for recycling or reconditioning	9 units
Spent welding materials (welding rods, wire and grinding wheels, etc.)	Construction	Solids	Hazardous	Dispose of at Class I landfill	More than 180 pounds
Waste oil (lubricating and insulating)	Construction equipment and vehicles, lube oil and flushes	Hydrocarbons	Non-RCRA hazardous liquid	Recycle or dispose of at a permitted facility	1,830 gallons
Waste oil filters	Construction equipment and vehicles	Solids	Hazardous	Recycle at a permitted facility	91 units
Oily rags, oil sorbent	Cleanup of small spills	Hydrocarbons	Hazardous	Recycle or dispose of at a permitted facility	183 units
Solvents, detergents, glycols, refrigerants, paint, and adhesives	Equipment maintenance	Solvents	Hazardous	Recycle at a permitted facility	9 gallons

Table 3.14-2. Potential Waste Generated During Construction

Waste	Origin	Composition	Classification	Disposal	Estimated Quantity
Spent lead–acid batteries and electrical fuses	Equipment	Metals	Universal waste	Recycle or dispose of off site at Universal Waste Facility	<10 units
Spent alkaline batteries	Equipment	Metals	Universal waste	Recycle or dispose of off site at Universal Waste Facility	183 units

Notes: RCRA = Resource Conservation and Recovery Act.

* A March 2026 soil study identified low levels of organochlorine pesticides and elevated arsenic in the surface level soils on site (6 inches below ground surface). A contaminated soil mitigation study was completed to evaluate the level of contamination, exposure pathways, and options for mitigative measures, which included a soil management plan (to be developed prior to construction). Project civil plans anticipate excavated soil to be reused on site; however, soil reuse and soil waste export quantities will depend on the final project design and considerations from the soil management plan. See Section 3.5, Hazardous Materials Handling, for additional information.

The project would dispose of nonhazardous waste from construction and decommissioning activities at a Class III landfill. When practical, nonhazardous waste would be recycled to the extent possible. What cannot be recycled would be disposed of at any of the permitted landfills discussed above. Most solid waste generated during construction would be nonhazardous and consist primarily of cardboard, wood pallets, copper wire, scrap metal, common trash, and concrete waste. Construction waste materials would be handled in accordance with the California Green Build Standards Code (24 CCR Part 11, Section 5.408), which establishes standards for construction and demolition (C&D) waste management and recycling or salvage of a minimum of 65% of nonhazardous C&D waste. Nonrecyclable construction waste would be placed into commercial trash dumpsters located on site. Dumpsters would be collected as needed by a commercial service and delivered to a landfill.

On-site surface soil contains elevated concentrations of arsenic, which does not allow on-site reuse once excavated. Soil that is excavated during construction must be disposed of off site. Soil is not classified as hazardous waste and therefore can be disposed of at a Class III municipal landfill. All soil disposal must be pre-approved by the receiving landfill, as each landfill's operating permit includes site-specific acceptance limits.

The proposed BESS facility would require lithium-iron phosphate, or similar, batteries. The batteries would be delivered to the project site in U.S. Department of Transportation–certified vehicles and in compliance with all applicable requirements of the U.S. Department of Transportation, California Highway Patrol, and the California Department of Motor Vehicles. Further, batteries may be considered hazardous waste in California when they are discarded, whether rechargeable or not. Accordingly, the battery modules included in the BESS facility eventually would require disposal in accordance with the applicable hazardous waste requirements. Standard construction practices would be observed such that an incidental release shall be appropriately contained and remediated as required by regulation.

Other hazardous materials used for construction would be typical for most construction projects of this type. As described in Table 3.14-2, materials would include small quantities of gasoline, diesel fuels, oils, lubricants, cleaning solvents, detergents, degreasers, paints, ethylene glycol, dust palliatives, herbicides, and welding materials/supplies. All hazardous materials would be used, stored, and disposed of in accordance with the manufacturers' specifications and consistent with applicable regulatory requirements. Workers would be trained to engage in safe work practices and to properly identify and handle any hazardous materials on site. Limited amounts of hazardous materials would be stored or used on site during project construction, including diesel fuel, gasoline, and motor oil for vehicles; mineral oil to be sealed within the transformers; herbicides; and lead–acid-based or lithium-ion-based batteries for emergency backup. Appropriate spill containment and cleanup kits would be maintained during construction and decommissioning activities. Disposal of hazardous waste during construction would be at a permitted treatment, storage, and disposal facility. Hazardous waste generated at the facility would not be stored on site for more than 90 days following its generation date and would be transported by a permitted hazardous waste transporter.

During decommissioning activities, nonhazardous waste and hazardous waste materials would be removed from site. A Draft Decommissioning Plan has been prepared (Appendix 2G) and would be implemented during decommissioning activities to ensure appropriate removal of BESS equipment from the foundations, disconnection of wiring, and removal of site infrastructure, as appropriate at the time of decommissioning consistent with then-applicable LORS and use of the site. The gen-tie facilities would be decommissioned and dismantled, and the site would be restored. Batteries and other equipment and materials would be

recycled to the extent feasible, to minimize disposal in landfills. In 2006 California prohibited the disposal of lithium batteries in Class III Landfills. Class III Landfills would not be used to dispose of the project's lithium battery cells. Information regarding the potential recycling facilities to be used during decommissioning can be found the Project Draft Decommissioning Plan subsection 6.2.1.1 (see Appendix 2G). All nonhazardous wastes would be collected and disposed of in appropriate landfills or waste collection facilities. All hazardous wastes would be disposed of according to then-applicable LORS. In summary, the project would generate nonhazardous and hazardous waste during its construction, facility start up, testing, and decommissioning. However, there are multiple locations that will accept anticipated waste streams generated by the facility. The solid waste Class III landfills listed in Table 3.14-1 have a collective remaining capacity of over 8,186,985 cubic yards. Similarly, waste disposal needs for permitted hazardous waste and soil is within thresholds that accepting facilities can accommodate without altering or impacting accepting facility structure.

Waste generated during construction and operation of the project alone is not expected to generate quantities of waste such that the surrounding facilities cannot accommodate the additional materials. Therefore, the impact of the project on solid waste recycling, disposal capacity, and hazardous waste capacity would be less than significant for construction and decommissioning activities.

Operations

Less than Significant. A small amount of waste would be generated on site during facility operations. Chapter 2 includes a detailed description of the project's O&M activities. Project operation is anticipated to generate nonhazardous and hazardous waste. Although the primary waste stream would be nonhazardous, the potential exists for varying quantities of hazardous waste to be generated on a periodic basis. Table 3.14-3 presents a summary of potential wastes and estimated quantities generated during project operations. Estimated quantities would be generated on an annual basis.

Table 3.14-3. Potential Waste Generated During Operations

Waste	Origin	Composition	Classification	Disposal	Estimated Quantity (Annual)
Nonhazardous Waste					
Scrap wood, plastic, paper, etc.	Maintenance activities	Normal refuse	Nonhazardous	Recycle and/or dispose of at a Class II or III landfill	366 pounds
Scrap metal	Maintenance activities	Parts, wire, etc.	Nonhazardous	Recycle and/or dispose of at a Class II or III landfill	183 pounds
Spent substation or electrical components	Maintenance activities	Metals, mineral oils, solids, electrical materials	Nonhazardous	Recycle and/or dispose of at a Class II or III landfill	275 pounds
Wastewater					
Sanitary waste	Municipal water	Liquid	Nonhazardous	Municipal sewer	3,657 gallons

Table 3.14-3. Potential Waste Generated During Operations

Waste	Origin	Composition	Classification	Disposal	Estimated Quantity (Annual)
Hazardous Waste					
Waste oil (lubricating and insulating)	Maintenance from machinery, lubricating oil systems and oil filled transformers; small leaks and spills	Hydrocarbons	Hazardous	Cleaned up using sorbent and rags and disposed of by certified oil recycler	183 gallons
Empty hazardous material containers	Maintenance activities	Drums and containers	Hazardous and nonhazardous	Dispose of containers <5 gallons as normal refuse; return containers >5 gallons to vendors for recycling or reconditioning	91 pounds
Spent welding materials (welding rods, wire and grinding wheels, etc.)	Maintenance activities	Solids	Hazardous	Dispose of at Class I landfill	91 pounds
Waste oil filters	Maintenance activities equipment and vehicles	Solids	Hazardous	Recycle at a permitted facility	91 pounds
Battery coolant (ethylene glycol and water mixture)	Routine maintenance (5- to 7-year replacement)	Liquid	Hazardous	Recycle at a permitted facility	5,000 gallons yearly average (replaced on 5- to 7-year cycle)
Oily rags/ sorbents	Maintenance, wipe down of equipment, cleanup of spills	Hydrocarbons and cloth	Hazardous	Recycled or disposed of by certified oil recycler	2 units
Spent lithium-ion battery cells	Equipment	Metals	Metals	Returned to manufacturer for recycling	14 tons
Spent lead–acid batteries	Equipment	Metals	Universal waste	Recycle or dispose of off site at Universal Waste Facility	<37 pounds
Spent alkaline batteries	Equipment	Metals	Universal waste	Recycle or dispose of off site at Universal Waste Facility	<37 pounds

Table 3.14-3. Potential Waste Generated During Operations

Waste	Origin	Composition	Classification	Disposal	Estimated Quantity (Annual)
Controlled waste streams	Smoke detectors, fire extinguishers	Controlled substance	Hazardous	Recycled or disposed of by certified waste hauler	<37 pounds

During O&M activities, the project would generate small amounts of waste, such as broken or rusted metal, defective or malfunctioning equipment, electrical materials, empty containers, other miscellaneous solid waste, and typical refuse from the O&M staff. When practical, nonhazardous waste would be recycled to the extent possible. What cannot be recycled would be disposed of at a permitted landfill. On average, less than half a ton of waste per week is anticipated to be collected in a bin that would be collected by a commercial waste management service and disposed of at a Class III landfill.

Disposal of hazardous waste during operations would be at a permitted treatment, storage, and disposal facility. Hazardous waste generated at the facility would not be stored on site for more than 90 days following its generation date and would be transported by a permitted hazardous waste transporter.

The project would generate minimal quantities of waste during operation activities. Waste generated during operation of the project alone is not expected to generate quantities of waste such that the surrounding accepting facilities cannot accommodate the additional materials. Therefore, the impact of the project on solid waste recycling, disposal capacity, and hazardous waste capacity would be less than significant for operational activities. In addition, a hazardous materials business plan (HMBP) would be implemented that would contain an inventory of hazardous materials on site, procedures and contacts for communicating an immediate response to a reportable release or threatened release of a hazardous material, and employee training in project safety procedures and emergency response plans and procedures in the event of a reportable release or threatened release. Any release of hazardous materials would be handled and disposed of in accordance with the HMBP and federal and state regulations.

3.14.3 Cumulative Effects

A cumulative impact is defined as a proposed project's incremental effect of closely related past, present, and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the proposed project (Public Resources Code Section 21083; 14 CCR 15064[h], 15065[a](3), 15130, and 15355).

According to CalRecycle, approximately 55,278 tons of waste were landfilled in Santa Cruz County during the first two quarters of 2025, and approximately 134,136 tons of waste were landfilled in Santa Cruz County in 2024 (CalRecycle 2025b). These numbers represent waste landfilled, not recycled, transformed, or exported for outside disposal or total waste generation for Santa Cruz County. Prior to disposal, source reduction and recycling efforts would be implemented for this project. As a worst-case scenario, if no waste can be recycled, transformed, or disposed of by other means, it is estimated that approximately.50 tons of nonhazardous solid waste would be landfilled per year during operational activities, which only represents approximately 0.00037% of Santa Cruz County's total waste landfilled per year. Likewise, it is estimated that solid waste generated during construction

would be minimal. This project would be required to comply with state and local waste reduction policies that would reduce the total volume of waste sent to landfills for disposal. Sufficient capacity is available at the landfills in Santa Cruz County with no cumulative adverse impacts anticipated. Therefore, anticipated waste generated by the project would not result in a direct and indirect cumulative waste management impact to Santa Cruz County.

3.14.4 Mitigation Measures

No mitigation measures are required as no significant impacts would occur. See Section 3.5 for specific mitigation measures related to soils.

3.14.5 Laws, Ordinances, Regulations, and Standards

Nonhazardous and hazardous waste handling associated with the project would be governed by federal, state, and local laws. Applicable laws and regulations address proper waste handling, storage, and disposal practices to protect the environment from contamination and to protect facility workers and the surrounding community from exposure to nonhazardous and hazardous waste. Table 3.14-4 presents a summary of the LORS applicable to waste handling.

Table 3.14-4. LORS Applicable to Waste Management

Jurisdiction	LORS	Applicability	Project Conformity	Opt-In Application Reference
Federal	RCRA Subtitle D	Regulates design and operation of nonhazardous solid waste landfills	**Yes.** Nonhazardous waste generated as part of project implementation would be handled and disposed of in accordance with Subtitle D.	Criterion 3.14-1 Section 3.14.5.1
Federal	RCRA Subtitle C	Controls storage, treatment, and disposal of hazardous waste	**Yes.** Hazardous waste generated as part of project implementation would be handled and disposed of in accordance with Subtitle C.	Criterion 3.14-1 Section 3.14.5.1
State	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	**Yes.** CEC, per the CEC's opt-in application process.	Criterion 3.14-1 Section 3.14.5.2
State	CIWMA (AB 939)	Controls solid waste collectors, recyclers, and depositors	**Yes.** Waste generated as part of project implementation would be handled and disposed of in accordance with AB 939 requirements.	Criterion 3.14-1 Section 3.14.5.2

Table 3.14-4. LORS Applicable to Waste Management

Jurisdiction	LORS	Applicability	Project Conformity	Opt-In Application Reference
State	AB 341/SB 1018 – Mandatory Commercial Recycling	Requires commercial businesses generating 4 cubic yards per week or more of solid waste to adopt recycling practices	**Yes.** Recyclable materials generated as part of project implementation would be recycled in accordance with AB 341/SB 1018 as applicable.	Criterion 3.14-1 Section 3.14.5.2
State	CCR Title 24, Part 11 (CALGreen)	Establishes minimum mandatory standards as well as voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency, water conservation, material conservation, and interior air quality	**Yes.** Solid waste generated would be recycled in accordance with CALGreen requirements for recycling percentages.	Criterion 3.14-1 Section 3.14.5.2
State	CCR Title 22, Division 4.5	Controls storage, treatment, and disposal of hazardous waste under the Department of Toxic Substance Control	**Yes.** Hazardous waste generated by the project would be handled and disposed of in conformance with CCR Title 22, Division 4.5.	Criterion 3.14-1 Section 3.14.5.2
Local	Santa Cruz County Code, Chapter 7.20 Solid Waste	Promotes the health, safety, and general welfare of the public; minimizes detrimental effects to communities and neighborhoods; protects the environment; and achieves County and state-wide goals to reduce landfill disposal and greenhouse gas emissions	**Yes.** The project would conform to the requirements of Chapter 7.20 of the County Code.	Criterion 3.14-1 Section 3.14.5.3
Local	Santa Cruz General Plan	Guides and regulates land use and development in unincorporated areas of the County	**Yes.** The project would conform to the Santa Cruz County General Plan goals and policies related to waste.	Criterion 3.14-1 Section 3.14.5.3

Notes: LORS = laws, ordinances, regulations, and standards; RCRA = Resource Conservation and Recovery Act; CEQA = California Environmental Quality Act; CEC = California Energy Commission; CIWMA = California Integrated Waste Management Act; AB = Assembly Bill; SB = Senate Bill; CCR = California Code of Regulations; CALGreen = California Green Building Standards; County = Santa Cruz County.

3.14.5.1 Federal

Resource Conservation and Recovery Act

The RCRA, which amends the Solid Waste Disposal Act of 1965, was enacted in 1976 to address municipal and industrial solid waste generated nationwide. The act gives the U.S. Environmental Protection Agency the authority to control hazardous waste from "cradle to grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. The RCRA also sets forth a framework for the management of nonhazardous solid waste. The federal Hazardous and Solid Waste Amendments to the RCRA were adopted in 1984 and were aimed

at waste minimization and phasing out land disposal of hazardous waste, as well as providing guidance for corrective action of releases. The amendments also allowed for increased enforcement authority for the U.S. Environmental Protection Agency, more stringent hazardous waste management standards, and a comprehensive underground storage tank program. Amendments to the RCRA in 1986 further enabled the U.S. Environmental Protection Agency to address environmental hazards relative to underground tank storage of petroleum and other hazardous substances.

Nonhazardous solid waste: Federal involvement is limited to establishing minimum criteria that prescribe the best practicable controls and monitoring requirements for solid waste disposal facilities. RCRA Subtitle D assigns responsibility for the regulation of nonhazardous waste to the states (42 USC 6901).

Nonhazardous waste generated as part of project implementation would be handled and disposed of in accordance with Subtitle D.

Hazardous waste: RCRA Subtitle C establishes a "cradle to grave" system of hazardous waste management by instituting controls for generation, transportation, treatment, storage, and disposal of hazardous waste (42 USC 6901). Above certain levels of waste produced, Subtitle C applies to all states and all hazardous waste generators. RCRA also establishes waste regulations for energetic wastes (explosives) in 40 Code of Federal Regulations Part 266, Subpart M.

Hazardous waste generated as part of project implementation would be handled and disposed of in accordance with Subtitle C.

3.14.5.2 State

California Integrated Waste Management Act (Assembly Bill 939)

Pursuant to the California Integrated Solid Waste Management Act of 1989 (Public Resources Code 40050 et seq.) or Assembly Bill (AB) 939, all cities in California are required to reduce the amount of solid waste disposed of in landfills. AB 939 required a reduction of 25% by 1995 and 50% by 2000. Contracts that include work that will generate solid waste, including C&D debris, have been targeted for participation in source reduction, reuse, and recycling programs. C&D waste is heavy, inert material that creates significant problems when disposed of in landfills. Because C&D waste is heavier than paper and plastic, it is more difficult for counties and cities to reduce the tonnage of disposed waste. For this reason, C&D waste has been specifically targeted by the State of California for diversion from the waste stream. Projects that generate C&D waste should emphasize deconstruction and diversion planning rather than demolition. Deconstruction is the planned, organized dismantling of a prior construction project, which allows maximum use of the deconstructed materials for recycling in other construction projects and sends a minimum amount of the deconstruction material to landfills. Waste should be diverted from disposal in landfills (particularly Class III landfills) and maximize source reduction, reuse, and recycling of C&D debris. AB 939 also required cities and counties to prepare solid waste planning documents (e.g., a source reduction and recycling element, a household hazardous waste element, and a non-disposal facility element).

Waste generated as part of project implementation would be handled and disposed of in accordance with AB 939 requirements.

Assembly Bill 341/Senate Bill 1018 Mandatory Commercial Recycling

Mandatory Commercial Recycling was one of the measures the California Air Resources Board adopted in the AB 32 Scoping Plan pursuant to the California Global Warming Solutions Act (Chapter 488, Statutes of 2006). The Mandatory Commercial Recycling Measure focuses on increased commercial waste diversion as a method to reduce greenhouse gas emissions. It is designed to achieve a reduction in greenhouse gas emissions of 5 million metric tons of carbon dioxide equivalent. To achieve the measure's objective, an additional 2 to 3 million tons of materials annually will need to be recycled from the commercial sector by the year 2020 and beyond (CalRecycle 2025c).

The regulation was adopted at CalRecycle's January 17, 2012, monthly public meeting. This regulation reflects the statutory provisions of AB 341 (Chesbro, Chapter 476, Statutes of 2011) and provides additional procedural clarifications and sets forth the requirements of the statewide mandatory commercial recycling program. The regulation was approved by the Office of Administrative Law on May 7, 2012, and became effective immediately. On June 27, 2012, the Governor signed Senate Bill 1018, which included an amendment that requires a business that generates 4 cubic yards or more of commercial solid waste per week to arrange for recycling services (CalRecycle 2025c).

Recyclable materials generated as part of project implementation would be recycled in accordance with AB 341/Senate Bill 1018 as applicable.

California Code of Regulations Title 24, Part 11

In 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code, Title 24 Part 11, commonly referred to as CALGreen, establishes minimum mandatory standards as well as voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency, water conservation, material conservation, and interior air quality. The CALGreen standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all new construction of residential and nonresidential buildings. CALGreen standards are updated periodically. The latest version (CALGreen 2022) became effective on January 1, 2023.

Mandatory CALGreen standards pertaining to water, wastewater, and solid waste include the following (24 CCR Part 11):

- Reduction in indoor water use through compliance with specified flow rates for plumbing fixtures and fittings
- Reduction in outdoor water use through compliance with a local water-efficient landscaping ordinance or the California Department of Water Resources' Model Water Efficient Landscape Ordinance
- Diversion of 65% of C&D waste from landfills

Solid waste generated would be recycled in accordance with CALGreen requirements for recycling percentages.

California Code of Regulations Title 22, Division 4.5

The Hazardous Waste Control Act of 1972 established standards for the handling, transportation, treatment, and disposal of hazardous waste. The regulatory framework is documented in California Code of Regulations (CCR) Title 22, Division 4.5, which is enforced by the Department of Toxic Substances Control.

Hazardous waste generated by the project would be handled and disposed of in conformance with CCR Title 22, Division 4.5.

3.14.5.3 Local

Santa Cruz County Code Chapter 7.20 Solid Waste

The Santa Cruz County Board of Supervisors adopted the ordinance creating a revised Chapter 7.20 Solid Waste on October 19, 2021. The ordinance repealed Chapters 7.20, 7.21, 7.23, 7.24, 7.25 and 7.26 of the County Code relating to Solid Waste and replaced them with a revised Chapter 7.20 (Santa Cruz County 2021a). The purpose of Chapter 7.20 is to promote the health, safety, and general welfare of the public; minimize detrimental effects to communities and neighborhoods; protect the environment; and achieve County and state-wide goals to reduce landfill disposal and greenhouse gas emissions (Santa Cruz County 2021b).

For this project, the following articles and subsections are particularly relevant:

Article IV: Storage and Accumulation of Discarded Materials on Private Property

7.20.120: (A) Every person owning, occupying, or controlling any residential dwelling unit, industrial premises, commercial business, or other premises, other than a County resource management facility, where discarded materials are produced or accumulated, shall provide and maintain on the premises suitable containers in good repair and of sufficient capacity to store the accumulation of discarded materials during the intervals between collection, transport, processing, or disposal. Containers must be easily identifiable and accessible to tenants, employees, vendors, contractors, visitors, and customers, and must display proper signage of the approved and prohibited discarded material types for that container. Such containers may be provided and maintained by the County-authorized service provider(s). Generators may be required to exclusively use containers provided by the County-authorized service provider(s) in order to ensure that the containers are compatible with collection equipment and applicable law. The Director retains the right to require containers to meet certain standards, such as container color, labels, or other specifications, including, but not limited to, those specified in 14 CCR, Division 7, Chapter 12, Article 3.

7.20.130: It shall be unlawful for the owner, occupant, or manager of any premises to allow the accumulation of any discarded materials in, on, or under any premises at any time which is, or may become, a menace to health and sanitation or a fire hazard. It shall be unlawful for the owner, occupant, or manager of any premises to ever at any time suffer, permit, or allow any discarded materials of any kind to remain in, on, or under such premises for a period exceeding that allowed by applicable law. Any unauthorized accumulation of discarded materials on any property or premises is hereby declared an unlawful public nuisance, is hereby prohibited, and may be abated pursuant to Article X of chapter 7.20 [Ord. 5383 § 2, 2021].

7.20.140: Any industrial, commercial, or business establishment wherein discarded materials are handled, produced or stored in large quantities is subject to review by a County code enforcement officer. The person in possession of the establishment shall comply with such requirements as the enforcement officer may deem necessary for the sanitary storage, collection, transport, processing, or disposal of the waste on the premises. [Ord. 5383 § 2, 2021].

7.20.150: Discarded materials containers shall not be placed on curbside or otherwise adjacent to streets or roadways to facilitate discarded materials collection more than 24 hours prior to pick-up time, and they shall be removed from the pick-up site within 24 hours after they have been emptied. Certain fees may be assessed for customers of the County-authorized service provider regarding proper use, care, and placement of collection containers; and these fees shall be described in the franchise agreement, if applicable. [Ord. 5383 § 2, 2021].

7.20.160: Discarded materials containers on all premises shall be emptied and discarded materials shall be collected and properly transported to a County resource management facility or other approved location not less than once per week. Discarded materials may be collected and transported by a County-authorized service provider or self-hauled in accordance with SCCC 7.20.250. A County code enforcement officer or other County-authorized designee may require occupants of the premises to manage, transport, or dispose of discarded materials in a prescribed manner or place. More frequent collection or transport of discarded materials may be required of premises where discarded materials are produced in such quantities, or are of such nature, that such increased frequency is necessary to prevent the occurrence of vector infestations or odor nuisances. [Ord. 5383 § 2, 2021].

Article VII: Required Diversion of Covered Materials

7.20.270: (A) All generators, including all property owners, owners of commercial businesses, and residents living in single-family structures, multi-family structures and mixed-use buildings, including those entities authorized to self-haul their waste pursuant to SCCC 7.20.250, must participate in a program to divert covered materials, including the requirements to:

(1) Subscribe to covered materials collection service offered by a County-authorized service provider, or self-haul covered materials in accordance with SCCC 7.20.250 and applicable law.

(2) Separate covered materials for collection or transport, and ensure that no covered materials are deposited in a solid waste container or receptacle; deposited at any County disposal facility; or are otherwise disposed of. Generators shall not place prohibited container contaminants in discarded materials containers. Failure to properly segregate covered materials or observation of prohibited container contaminants may result in non-collection and/or the assessment of contamination processing fees by the County or its authorized designee(s).

The project would conform to the requirements of Chapter 7.20 of the County Code.

Santa Cruz County General Plan

The Santa Cruz County General Plan 2024 guides and regulates land use and development in unincorporated areas of the County. The Parks, Recreation and Public Facilities Element includes policies aimed at addressing topics related to providing community facilities and infrastructure to support existing and future populations. The policies and programs within this element are derived from various source documents, including but not limited to, the County Strategic Plan, and adopted plans for parks, stormwater management, and solid waste management (Santa Cruz County 2024). For this project, the following policies are particularly relevant.

Policies

PPF 4.5.1: Establish, in conformance with state law, materials recovery through recycling, reuse and composting, as the primary and fundamental strategy of solid waste management by the County, with landfill disposal as a secondary and essential component. Designate materials recovery and reuse projects as a funding priority in allocating capital expenditures for solid waste management.

PPF 4.5.2: Take into account the whole materials management system to achieve a zero waste goal by focusing on reducing and eliminating materials from entering into the waste stream first and foremost; as a secondary strategy focus on reusing materials; and as a tertiary strategy recycling and composting all remaining materials for their highest and best use.

PPF 4.5.10: Require all development projects, except single-family dwellings, to provide sufficient and accessible space for the storage and collection of recyclable materials separate from, and in addition to, space for refuse storage and collection. Encourage owners of existing buildings to provide such space, where feasible.

PPF 4.5.19: Ensure that solid waste collection contracts maintain a distinction between recyclable materials and refuse.

PPF 4.5.23: Prohibit the disposal of radioactive waste, hazardous waste and ozone depleting compounds in County landfills.

PPF 4.5.28: Maintain consistent standards of collection and ensure availability of collection service throughout the unincorporated County.

The project would conform to the Santa Cruz County General Plan goals and policies related to waste.

3.14.6 Agencies and Agency Contacts

Federal and some state agencies discussed in this section would all be involved in the regulation of the waste generated by the project. However, the regulations are administered and enforced primarily through the designated California Environmental Protection Agency Certified Unified Program Agency, which is the Santa Cruz County Environmental Health Division. Environmental Health is responsible for enforcing state statutes, regulations and the local ordinance (Chapter 7.100) pertaining to the storage, use, and disposal of hazardous materials and hazardous waste (SCCEH 2025a). The contact information for nonhazardous and hazardous waste management agencies is listed in Table 3.14-5.

A draft HMBP has been prepared and is included as Appendix 3.5B; however, approval of the HMBP from the Santa Cruz County Environmental Health Division will be superseded by California Energy Commission approval of the project under the opt-in program.

Table 3.14-5. Agency Contacts for Waste Management

Permit or Approval	Agency Contact	Applicability
Solid Waste and Recycling	Santa Cruz County Recycling and Solid Waste Services	Prior to waste-generating activities.

Table 3.14-5. Agency Contacts for Waste Management

Permit or Approval	Agency Contact	Applicability
	County of Santa Cruz 701 Ocean Street, 4th Floor, Santa Cruz, California 95060 Phone: 831.454.2160 dpwweb@santacruzcountyca.gov	
Hazardous Waste/HMBP*	Santa Cruz County Environmental Health Division County Government Center 701 Ocean Street, 3rd Floor, Room 312 Santa Cruz, California 95060 Phone: 831.454.2022 EnvironmentalHealth@santacruzcountyca.gov	During construction and/or operations when hazardous materials would be stored on site.

Sources: Santa Cruz County 2025; SCCEH 2025b.
Notes: HMBP = Hazardous Materials Business Plan.
* State and local approvals will be superseded by California Energy Commission approval of the project under the opt-in program.

3.14.7 Permits and Permit Schedule

The temporary storage for disposal of hazardous wastes would be included in the project's HMBP (Appendix 3.5B). No additional permits are required.

3.14.8 References

CalRecycle (California Department of Resources Recycling and Recovery). 2025a. "Santa Cruz County." SWIS Facility/Site Search [online database]. Accessed October 8, 2025. https://www2.calrecycle.ca.gov/SolidWaste/Site/Search.

CalRecycle. 2025b. "Landfill Tonnage Reports." Accessed October 14, 2025. https://www2.calrecycle.ca.gov/LandfillTipFees.

CalRecycle. 2025c. "California's Mandatory Commercial Recycling Law Background." Accessed October 14, 2025. https://calrecycle.ca.gov/recycle/commercial/.

DTSC (California Department of Toxic Substances Control). 2025. "California Commercial Offsite Hazardous Waste Permitted Facilities." Accessed October 14, 2025. http://www.envirostor.dtsc.ca.gov/public/commercial_offsite.asp.

Santa Cruz County. 2021a. "Agenda Item DOC-2021-826." Accessed November 18, 2025. https://cdi.santacruzcountyca.gov/Portals/19/2021%20Ordinance%20New%20County%20Code%207_20%20Solid%20Waste.pdf.

Santa Cruz County. 2021b. "Solid Waste." Chapter 7.20 in *Santa Cruz County Code*. Adopted October 19, 2021. Accessed November 18, 2025. https://www.codepublishing.com/CA/SantaCruzCounty/html/SantaCruzCounty07/SantaCruzCounty0720.html#7.20.010.

Santa Cruz County. 2024. “Parks, Recreation, and Public Facilities.” Chapter 7 in *Santa Cruz County General Plan*. Adopted November 15, 2022. Effective March 18, 2024. Accessed October 14, 2025. https://cdi.santacruzcountyca.gov/Portals/35/CDI/Planning/Policy/GeneralPlanTownPlans/General%20Plan%20Chapters/GP%20Chapter%207_PPF%20Certified%20Clean_032724_Final.pdf?ver=uBoBF4x_MZwP27hWX77Oyg%3d%3d&timestamp=1712076403535.

Santa Cruz County. 2025. “Recycling and Solid Waste.” Santa Cruz County Community Development and Infrastructure. Accessed October 14, 2025. https://cdi.santacruzcountyca.gov/PublicWorks/RecyclingSolidWaste.aspx.

SCCEH (Santa Cruz County Environmental Health). 2025a. “Hazardous Materials & Waste.” Accessed November 17, 2025. https://www.scceh.com/NewHome/Programs/HazardousMaterialsWaste.aspx.

SCCEH. 2025b. “Hazardous Materials Management Plans.” Accessed October 14, 2025. https://www.scceh.com/NewHome/Programs/HazardousMaterialsWaste/HazardousMaterialsManagementPlans.aspx.

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3.15 Water Resources

This section describes the potential effects that construction and operation of the Seahawk Battery Energy Storage System Project (project) may have on water resources at and in the vicinity of the project site. The project would consist of an up to 200-megawatt containerized battery energy storage system (BESS) facility on an approximately 16-acre footprint on a 47-acre property in unincorporated Santa Cruz County. The primary components of the project include a BESS facility using lithium-iron phosphate batteries or similar technology, inverters and transformers, an on-site collector substation, a generation interconnect (gen-tie) line, an operations and maintenance building, a fire protection system, access improvements, stormwater management, a noise mitigation wall, a Supervisory Control and Data Acquisition system, and temporary construction laydown areas. The project would interconnect from the project substation to the adjacent Pacific Gas & Electric Company Green Valley Substation via a 115-kilovolt gen-tie transmission line. The gen-tie line would be installed underground from the project substation to the Point of Change of Ownership at an overhead riser pole on the Pacific Gas & Electric parcel, and an overhead gen-tie line would connect to the Point of Interconnection at the Pacific Gas & Electric Green Valley Substation.

The information presented in this section is based on a site-specific drainage analysis, a storm water control operation and maintenance plan, a Water Supply Assessment, and readily available online resources. This evaluation of water resources includes the following elements:

- Section 3.15.1 describes the existing environment that could be affected, including drainage features, groundwater, water quality, and flooding.
- Section 3.15.2 identifies potential environmental impacts that may result from project construction, operation, maintenance, and decommissioning.
- Section 3.15.3 discusses potential cumulative effects.
- Section 3.15.4 identifies avoidance and mitigation measures that would be considered during project construction, operation, maintenance, and decommissioning.
- Section 3.15.5 presents laws, ordinances, regulations, and standards (LORS) applicable to water resources.
- Section 3.15.6 identifies regulatory agency contacts and describes permits required for the project related to water resources.
- Section 3.15.7 provides references used to develop this section.

The following environmental setting and impact evaluation are based, in part, on the following project-specific technical documents, included as appendices to this application:

- Appendix 2A – Site Plan Package
- Appendix 3.15A – Downstream Impact Report (C2G Civil Consultant Group 2025), August 6, 2025
- Appendix 3.15B – Storm Water Control Operation and Maintenance Plan, revised December 10, 2024
- Appendix 3.15C – Storm Water Control Plan, December 10, 2024
- Appendix 3.15D – Water Supply Assessment

A summary of the water resources evaluation is provided in the table below.

		Potentially Significant Impact	Less than Significant Impact with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the Project:					
1	Violate any water quality standards or waste discharge requirements, or otherwise substantially degrade water quality?	☐	☐	☒	☐
2	Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
3	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: a. Result in substantial erosion or siltation on- or off-site; b. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; c. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; and/or d. Impede or redirect flood flows?	☐	☐	☒	☐
4	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
5	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

3.15.1 Affected Environment

This subsection describes existing climate, drainage features, groundwater, water quality, water supply, and flooding potential at the project site and surrounding region.

3.15.1.1 Climate

The project site is in an area characterized by a moderate Mediterranean climate, with temperatures typically varying between 38°F to 73°F. The average maximum temperature in the project vicinity, based on temperature

data recorded at the Watsonville Water Works, CA Remote Automatic Weather Station (National Weather Service Station No. 049473), from 1908 to 2016 ranged from 60°F to 73°F, and the average minimum temperature ranged from 38°F to 52°F. The average annual precipitation at the Watsonville Water Works, CA weather station from 1908 to 2016 was approximately 21.52 inches (WRCC 2025).

Projected future climate conditions in California indicate gradual warming, with an increase in extremely hot days relative to historical norms, and greater year-to-year precipitation variability. Warming of approximately 3.6°F to 12.6°F is expected by the end of the century. Additionally, there would be fewer wet days, but increased precipitation on the wettest days (i.e., wetter winters and drier springs and autumns), resulting in modest annual precipitation changes, but an increase in the frequency of dry years (Pierce et al. 2018).

3.15.1.2 Drainage Features

The project site lies within the Pajaro River Watershed, where the Pajaro River is the largest coastal stream between San Francisco Bay and the Salinas River Watershed in Monterey County (RWMG 2019). The watershed is approximately 1,300 square miles and includes portions of Santa Cruz, Santa Clara, San Benito, and Monterey Counties. Its large size contributes to the number of diverse environments, physical features, and land uses within the watershed. Tributaries to the Pajaro River, the largest of which is the San Benito River, serve as the major routes for surface flow and drainage throughout the watershed, which ultimately drains into Monterey Bay. Surface waters within the region are overseen by the Central Coast Region 3 Regional Water Quality Control Board (RWQCB), and its water quality control plan, known as the Basin Plan (RWQCB 2024). Pajaro River begins just west of San Felipe Lake, which is formed by the confluence of Pacheco Creek, Tequisquita Slough, and Ortega Creek. Regionally, the project site is within the Salsipuedes Creek Watershed (180600020803), named after Salsipuedes Creek, which is a tributary to Pajaro River (Figure 3.15-1, RWQCB Hydrologic Setting, and Figure 3.15-2, USGS Hydrologic Setting). Surface waters in the Salsipuedes Creek Watershed include Amesti Creek, Casserly Creek, CCC Creek, Pinto Lake, College Lake, and Salsipuedes Creek (EPA 2025).

The project site is between Pinto Lake to the west and College Lake to the east. The project site currently drains northwest to southeast (Figure 3.15-3, Local Drainage Features). Additionally, there is a ridge that separates drainage from the north and south sides of the site into two distinct on-site valleys. These valleys continue to drain easterly crossing at least one other parcel before entering the high-water elevation of the seasonal lake (at least 500 feet from the project site), known as College Lake. College Lake is a seasonal lake in a topographic depression along the Zayante–Vergeles Fault zone. It receives inflows from several tributaries and drains into Salsipuedes Creek (Appendix 3.15A).

3.15.1.3 Groundwater

3.15.1.3.1 Groundwater Basin Description

The project overlies the Corralitos–Pajaro Valley Groundwater Subbasin, also referred to as the Pajaro Valley Groundwater Subbasin (California Department of Water Resources [DWR] Basin No. 3-002.01), which covers approximately 120 square miles (Figure 3.15-4, Groundwater Basins and Water Agencies) (PVWMA 2021). The coastal Pajaro Valley straddles southern Santa Cruz County and northern Monterey County (Figure 1-1, Regional Map, in Chapter 1, Executive Summary). The valley covers approximately 120 square miles and is bordered on the northeast by the coastal Santa Cruz Mountains and on the southwest by the Pacific Ocean. The northern boundary of the valley is generally considered to be the drainage divide between the Aptos Creek Watershed and the Pajaro River Watershed; the southern boundary of the valley is generally considered to be the drainage divide between

Elkhorn Slough and Morro Coho Slough (PVWMA 2021). The basic geologic structure of the Pajaro Valley is characterized by a basement of granitic rocks overlain by westward-dipping Purisma Formations and the Aromas Red Sands Formation. The Purisima Formation underlies the valley at depths ranging from at or near land surface along the northern and eastern boundaries, to as much as 900 feet below the land surface near the mouth of the Pajaro River. The Aromas Red Sands is a major aquifer within the valley and overlies the Purisma Foundation. The aquifers within the groundwater basin are interspersed with clay layers that vary from impermeable to semipermeable and limit the vertical movement of water (PVWMA 2021).

Groundwater recharge is the result of complex interactions between land cover and slope, soils, geology, and other physical conditions. The primary sources of recharge to the Pajaro Valley Subbasin are infiltration of rainfall, seepage of streamflow from the Pajaro River and its tributaries, and percolation of irrigation water. The variation in precipitation and streamflow influences how and when the Pajaro Valley Subbasin is recharged. Although there is a large capacity for groundwater storage in the Pajaro Valley Subbasin, the amount of water that can recharge the aquifer is limited by the valley's hydrogeologic conditions. Even in very wet years, the Pajaro River and creeks such as the Corralitos and Salsipuedes provide only a limited percentage of water to groundwater storage in the basin because of the presence of the impermeable clay layers (PVWMA 2021).

Seawater intrusion in the Pajaro Valley Subbasin, a result of groundwater overdraft, was first documented in 1953 and has become an increasing problem since then (PVWMA 2021). The Pajaro Valley Subbasin is in severe overdraft, causing groundwater elevations to drop below sea level and leading to seawater intrusion. Seawater intrusion has caused chloride contamination of groundwater wells up to 3 miles inland (PVWMA 2021). More recent groundwater data indicates that chloride concentrations as a measure of salinity have been relatively stable, although there are wells with increasing concentrations (PVWMA 2021).

DWR has designated the Pajaro Valley Subbasin as a high-priority basin with regard to enacting the Sustainable Groundwater Management Act of 2014 (DWR 2025a). Pajaro Valley Water Management Agency (PV Water) is the Groundwater Sustainability Agency for the Pajaro Valley Subbasin, and in accordance with Sustainable Groundwater Management Act (SGMA), received approval for its alternative management plan, the Pajaro Valley Basin Management Plan, to adhere to SGMA requirements (PVWMA 2021). The groundwater budget for the Pajaro Valley Subbasin previously estimated an average deficit of 12,100 acre-feet per year (AFY) during a simulation period of 1964 through 2009. As a result, PV Water established a target of reducing groundwater production in the basin by approximately 12,100 AFY (RWMG 2019). According to the 2022 update of the Pajaro Valley Basin Management Plan, the projects and management actions enacted from the 2014 update have reduced groundwater pumping, increased groundwater storage, and reduced seawater intrusion (PVWMA 2021).

3.15.1.3.2 Groundwater Wells

A review of the U.S. Geological Survey's national water information system database for information about wells within 0.5 miles of the project site was completed, and the location of groundwater wells on and within 0.5 miles of the project site is shown in Figure 3.15-5, Groundwater Wells. A summary of well completion information and historical groundwater level data is provided in Table 3.15-1. According to the Storm Water Control Plan, depth to groundwater is approximately 10 to 16 feet below ground surface (Appendix 3.15C).

Table 3.15-1. Groundwater Well Inventory

Well Name	Well Depth (Feet)	Land Surface Elevation (Feet MSL)	Start Date	End Date	Range of Water Level (Feet MSL)	Distance from Project Site (Feet – Direction)	USGS Site Status
011S002E28F001M	265	118	01/05/1970	09/09/1983	-20–31	0 (on site)	Inactive
011S002E28K001M	Unknown	195	08/10/1978	08/15/1983	73–117	500 (southeast)	Inactive
011S002E28C002M	250	90	01/07/1970	11/14/1980	12–55	1,000 (north)	Inactive
011S002E33C001M	125	87.50	01/06/1970	03/15/1983	-10–19	2,000 (south)	Inactive
011S002E29J001M	Unknown	110	01/13/1970	11/11/1980	-22–113	2,000 (southwest)	Inactive
011S002E28Q001M	Unknown	82	01/07/1970	03/18/1981	-6–82	2,500 (south)	Inactive

Source: USGS 2025.
Notes: MSL = mean sea level; USGS = U.S. Geological Survey.

3.15.1.4 Water Quality

3.15.1.4.1 Surface Water Quality

As noted above, the project site is in the Salsipuedes Creek Watershed. There are no surface waters on the project site, and the closest surface water feature to the project site is Pinto Lake, which is approximately 0.5 miles to the west (Figure 3.15-1). According to the U.S. Environmental Protection Agency (EPA) watershed database, water quality is not monitored or known for Amesti, Casserly, or CCC Creeks, but both Pinto Lake and Salispuedes Creek are listed as impaired (EPA 2025). Pinto Lake, which has beneficial uses including drinking water, aquatic life, and recreation, is impaired by algae, ammonia, biological poisons, low oxygen, and other causes (EPA 2025). Salispuedes Creek, which has a beneficial use for aquatic life, is listed as impaired by metals (EPA 2025).

3.15.1.4.2 Groundwater Quality

Water quality varies widely both spatially and vertically throughout the Pajaro Valley Subbasin (RWMG 2019). For example, concentrations of total dissolved solids (TDS), a measure of salts, range from a minimum of 120 milligrams per liter (mg/L) to a maximum of over 27,000 mg/L. The locations with the highest TDS concentrations include the western boundary, consistent with the mapped seawater intrusion front. Eastern areas are elevated, including Murphy Crossing and the East Area, where stream flow infiltration of high TDS water originating in the upper reaches of the Pajaro River Watershed occurs. Seawater intrusion is the greatest source of salts to the aquifer system, with approximately 20% of the groundwater within the Pajaro Valley Subbasin observed to have chloride concentrations greater than 100 mg/L (RWMG 2019).

Elevated groundwater concentrations of nitrate (NO_3) are found in the sand dunes of the San Andreas and Springfield Terraces, as well as in the eastern area between Highways 129 and 152. The main source of nitrates in the Pajaro Valley Subbasin is direct infiltration via agricultural land uses, followed by streamflow infiltration. Given that no water quality objectives are explicitly stated for the Parajo Valley water area in the current Water Quality Control Plan for the Central Coastal Basin (RWQCB 2024), the threshold concentrations for each constituent of concern were selected based on the thresholds defined for neighboring basins. The analysis suggests a significant amount of assimilative capacity with respect to TDS remains in the Parajo Valley Groundwater Basin, with more than 90% of the area having concentrations below 1,000 mg/L TDS. For nitrates, the analysis suggests some level of remaining assimilative capacity for more than 80% of the basin. However, nearly 20% of the Pajaro Valley Subbasin has average nitrate concentrations that exceed the selected threshold of 45 mg/L.

The City of Watsonville may need to address a new hexavalent chromium regulation in the future that could require mitigation of naturally occurring hexavalent chromium in its water supply wells. Approximately 90% of the City of Watsonville's drinking water demands are supplied by 12 groundwater wells extracting from the Pajaro Valley Subbasin. The need for mitigation would be determined once a new hexavalent chromium contaminant limit is determined by the RWQCB. All 12 wells are impacted by hexavalent chromium, six of which would exceed a new 10 parts per billion maximum contaminant level regulatory limit; 50% of the City of Watsonville's water supply would be in violation of the new maximum contaminant level. Until treatment is implemented, the impacted wells would not meet primary drinking water standards, leaving the City of Watsonville vulnerable to drinking water maximum contaminant level violations. The City of Watsonville is asking the state for a review of economic impacts on communities and for financial assistance to comply with the regulation (City of Watsonville 2021).

According to the Phase I Environmental Site Assessment prepared for the project site and its review of environmental databases, none of the identified surrounding federal, state, or tribal agency database listings were

considered an environmental concern to the subject property based on one or more of the following rationale: absence of reported releases, regulatory status, separating distance relative to the subject property, presumed hydrogeologic gradient relative to the subject property, and/or nature/extent of contamination (Appendix 3.5A). Groundwater quality data obtained from the U.S. Geological Survey for wells in the project area are summarized in Table 3.15-2.

Table 3.15-2. Groundwater Quality Data

Site Name	Start Date	End Date	Water Quality Concerns	Max Concentration Measured	Distance from Project Site (Miles)
011S002E28F001M	11/21/1978	8/15/1983	Iron, TDS, manganese	1,600 ug/L, 375 mg/L, 850 mg/L	0 (on site)
011S002E28K001M	3/16/1972	3/14/1989	Iron/TDS	230 ug/L, 412 mg/L	500 (southeast)
011S002E28C002M	4/21/1971	4/21/1971	Chloride	42 mg/L	1,000 (north)
011S002E33C001M	08/15/1979	08/14/1981	Manganese/Iron	960 ug/L/2,600 ug/L	2,000 (south)
011S002E29J001M	11/21/1978	11/11/1980	Chloride	25 mg/L	2,000 (southwest)
011S002E28Q001M	---	---	---	---	2,500 (south)

Source: USGS 2025.
Notes: mg/L = milligrams per liter; ug/L = micrograms per liter; TDS = total dissolved solids; — = not available/not tested.

The existing on-site well was tested in 2022 for nitrates, specific conductance, total dissolved solids, temperature, and pH. The results reported on June 13, 2022, indicated that all analytes were below the drinking water standards, where applicable (no drinking water limits are available for temperature and pH) (MBAS 2022).

3.15.1.5 Flooding Potential

Flood zones are identified on Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps as Special Flood Hazard Areas and "other areas of flood hazard." A Special Flood Hazard Area is defined as the area that would be inundated by a flood event having a 1% chance of being equaled or exceeded in any given year. The 1% annual chance flood is also referred to as the base flood or 100-year flood, and is the national standard used by all federal agencies for the purposes of requiring the purchase of flood insurance and regulating new development. Similarly, the 0.2% annual chance flood is referred to as the 500-year flood. According to FEMA Flood Insurance Rate Maps (Panel 06087C0384E), the project site does not occur within any FEMA flood hazard zones (FEMA 2025).

DWR conducted a study to identify flood-prone areas within California. This study, which mapped flood zones and floodplains for the 100-year, 200-year, and 500-year floods, was conducted to supplement the studies by FEMA. The 100-year flood zones, referred to as "Flood Awareness Zones," were reviewed for the project site and found not to contain any 100-year Flood Awareness Zones (DWR 2025b).

Additionally, the project site is almost 6 miles inland and would not be susceptible to any tsunami wave hazards. Seiches are waves and oscillations within confined or semi-confined bodies of water that are seismically induced by ground shaking. The project site is not immediately adjacent to any enclosed or semi-enclosed bodies of water, and although approximately within 500 feet of College Lake, a seasonal lake, the project site is approximately 30

feet higher in elevation to the highest lake level; therefore, there is a very low potential for seiche waves to adversely affect the project site (see Criterion 3.15.2.3.4 for further discussion).

3.15.2 Impact Analysis

The following sections present the potential effects on water resources from construction, operation, maintenance, and decommissioning of the proposed project.

3.15.2.1 Methodology

The impact analysis is based on a site-specific hydrology/water quality report, Water Supply Assessment, engineering drawings, and readily available resources provided online. Potential direct and indirect project impacts related to water resources were evaluated against the California Environmental Quality Act (CEQA) significance criteria and are discussed below. The impact analysis evaluates potential impacts during project construction, operation, and decommissioning.

3.15.2.2 Impact Evaluation Criteria

CEQA Guidelines Appendix G is a screening tool, not a method for setting thresholds of significance. CEQA Guidelines Appendix G is typically used in the Initial Study phase of the CEQA process, asking a series of questions. The purpose of these questions is to make a determination as to whether a project requires an Environmental Impact Report, a Mitigated Negative Declaration, or a Negative Declaration. Per the Governor's Office of Planning and Research, "Appendix G of the Guidelines lists a variety of potentially significant effects but does not provide a means of judging whether they are indeed significant in a given set of circumstances."

The answers to the CEQA Guidelines Appendix G questions are not determinative of whether an impact is significant or less than significant. Nevertheless, the questions presented in CEQA Guidelines Appendix G are instructive. With respect to hydrology and water quality, CEQA Guidelines Appendix G asks, in part, would the project:

- Violate any water quality standards or waste discharge requirements, or otherwise substantially degrade water quality?
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?
- 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:
    a. Result in substantial erosion or siltation on- or off-site?
    b. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?
    c. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?
    d. Impede or redirect flood flows?
- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

3.15.2.3 California Environmental Quality Act Appendix G Assessment Criteria

Criterion 3.15-1 Would the project violate any water quality standards or waste discharge requirements, or otherwise substantially degrade water quality?

Construction

Less than Significant. Construction of the project would have the potential to result in substantial additional sources of polluted runoff through activities such as clearing and grading, stockpiling of soils and materials, concrete pouring, painting, and asphalt surfacing that would potentially have short-term impacts on surface water quality if not managed appropriately. Typically, BESS and gen-tie line construction includes equipment such as bulldozers, graders, water trucks, rollers, backhoe/trenching machines, excavators, concrete trucks/concrete pumps, cranes, dump trucks, flatbed and low-bed trucks, pickup trucks, small hydraulic cranes, and rough-terrain cranes/forklifts. Pollutants associated with these construction activities that could substantially degrade water quality include soils, debris and other materials generated during clearing, fuels and other petroleum fluids associated with the equipment used for construction, paints, concrete slurries, asphalt, and other hazardous materials.

Non-stormwater discharges during construction would include periodic application of water for dust control. Because dust control is necessary during windy and dry periods to prevent wind erosion and dust plumes, water would be applied in sufficient quantities to wet the soil, but not so excessively as to produce runoff from the construction site. Water applied for dust control would either quickly evaporate or locally infiltrate into shallow surface soils. This means that water applied for dust control is unlikely to affect groundwater or surface water features, and thus would not cause or contribute to exceedances of water quality objectives contained in the Basin Plan.

Pollutants associated with construction could degrade water quality if they are mobilized by stormwater or non-stormwater flows into surface waters. Sediment is often the most common pollutant associated with construction sites because of the associated earth-moving activities and areas of exposed soil. Sediment that is washed off site can result in turbidity in surface waters, which can impact aquatic species. In addition, when sediment is deposited into receiving waters it can smother species, alter the substrate and habitat, and alter the drainage course. Hydrocarbons (such as fuels, asphalt materials, and oils) and hazardous materials (such as paints and concrete slurries) discharged from construction sites could also impact aquatic plants and animals downstream. Debris and trash could be washed into existing storm drainage channels to downstream surface waters and could impact wildlife and aesthetic value.

Stormwater runoff from the project site drains from northwest to southeast across at least one other parcel before entering the high-water elevation of the seasonal lake known as College Lake, approximately 500 feet from the project site (Appendix 3.15A). According to EPA water quality data, College Lake is not identified as a surface water body in the Salsipuedes Creek Watershed (EPA 2025). However, Salsipuedes Creek is listed as impaired by metals (Figure 3.15-6, Impaired Waterbodies).

Under the National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) program, Stormwater Pollution Prevention Plans (SWPPPs) are required to be prepared, and the best management practices (BMPs) identified in the SWPPPs are required to be implemented for all construction sites greater than 1 acre to reduce the potential for off-site discharges of pollutants in surface water. In

compliance with the CGP, the project would implement construction BMPs that would minimize disturbance, protect slopes, reduce erosion, and limit or prevent various pollutants from entering surface water runoff.

The project's grading plans would include details on the location and type of BMPs necessary to reduce the potential for project-induced erosion and scour, including temporary BMPs to be implemented during construction (per the statewide CGP), and permanent BMPs to be installed and maintained per Santa Cruz County Code (SCCC) Chapter 7.79, Runoff and Pollution Control, and the County of Santa Cruz (County) Construction Site Stormwater Pollution Control BMP Manual (County of Santa Cruz 2011). The exact location and type of temporary BMPs to be installed during construction would depend on site-specific conditions, construction schedule, and proposed activities, all of which are outlined in the construction SWPPP that would be prepared for the project. Typical temporary BMPs used for similar projects include energy dissipaters, silt fences, fiber rolls, gravel/sandbags, construction road stabilization, and stabilized construction entrances. As the project-specific SWPPP is prepared, the location, type, and number of specific BMPs may be refined based on the final designs to most effectively achieve the objective of reducing turbidity and other pollutant loads in stormwater runoff. The provisions of the CGP would ensure that site-specific conditions are taken into consideration when developing construction SWPPPs, that personnel developing and implementing construction SWPPPs are qualified, and that BMPs are adequately monitored and maintained.

Dewatering is not expected to be required. The Geotechnical Engineering Report conducted for the project concluded that, based on observations during the field investigation and a review of monitoring well data from several historical monitoring wells in the area, depths to groundwater range from 10 to 16 feet below ground surface (Appendix 3.4A).

Because the actual presence or absence of shallow groundwater is dependent on local geological and climatic conditions, it is possible that locally perched groundwater could be encountered. Therefore, it is possible that construction-related dewatering discharges could be required. Nonetheless, any dewatering activity that would be discharged to the land surface would need to comply with the provisions of General Waste Discharge Requirements (WDRs) and ensure compliance with the Basin Plan (RWQCB 2024). If required, a Notice of Intent to comply with General WDRs would be submitted to the Central Coast RWQCB, in addition to a discharge monitoring plan and any additional information requested by the Central Coast RWQCB. RWQCB staff would then determine whether coverage under the General WDRs is appropriate and, if so, would notify the applicant by letter of coverage. This permit process is the mechanism by which the Central Coast RWQCB would ensure that discharges of groundwater would not violate Basin Plan standards. If contaminated groundwater is unexpectedly discovered during discharge monitoring, the Central Coast RWQCB would be notified. Groundwater would be passed through a treatment unit prior to being discharged to land or surface water.

Operations

Less than Significant. Once constructed, the proposed BESS facility would result in a substantial increase in impervious surfaces at the site, currently entirely pervious, which could potentially result in discharge of polluted stormwater runoff. Potential sources of polluted runoff include incidental spills of petroleum products and hazardous substances from maintenance vehicles and equipment.

In compliance with SCCC Chapter 7.79, Runoff and Pollution Control, private development projects that add or replace more than 5,000 square feet of impervious area are considered "large projects" and are required to implement permanent water quality BMP measures to ensure that pollutant discharges and runoff flows from development are reduced to the maximum extent practicable, and that receiving water quality objectives are not violated throughout the life of the project. In compliance with the SCCC, a Stormwater Control Operation and Maintenance Plan and a Preliminary Stormwater Control Plan have been developed for the proposed project (Appendix 3.15B and Appendix 3.15C) to provide the sizing calculations and stormwater control features that would be incorporated into the project design to comply with the County stormwater management requirements. The proposed substation and BESS would be constructed on a raised pad, and runoff from the site's three drainage management areas would drain southeast into three different bioretention areas. For upstream run-on flows, there would be a stormwater bypass system to convey the water around the site. The proposed bioretention areas would provide stormwater treatment and detention (Appendix 2C). After treatment and retention, stormwater flows would leave the project site at the same location as the predevelopment condition.

In accordance with County requirements, the bioretention areas have been upsized to increase the detention volume to a 25-year storm event releasing at a 5-year pre-development rate (Appendix 3.15A). According to the Preliminary Stormwater Control Plan, the bioretention volumes were sized to meet County requirements and include some conservative assumptions because some portions of the site are impervious in the existing condition and assumed to be entirely pervious (Appendix 3.15C).

The County also requires that the project include routine inspections and ongoing maintenance as part of project operations, which were included in the Stormwater Control Operation and Maintenance Plan (Appendix 3.15B).

By implementing the pollution control measures described in the Storm Water Control Operation and Maintenance Plan (Appendix 3.15B), the proposed project would limit the possibility of contributing contaminants that might exceed local water quality objectives or contribute to the degradation of beneficial uses of Salsipuedes Creek, in compliance with the County requirements and the Regional Phase II Municipal Separate Storm Sewer Systems (MS4) Permit.

As a result, the proposed project would not violate applicable water quality objectives or waste discharge requirements, and would comply with all federal, state, and local laws addressing water quality in stormwater and non-stormwater discharges. Potential construction and operations impacts would be **less than significant.**

Criterion 3.1-2 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?

Less than Significant. Water supply for construction is anticipated to be purchased from a local water purveyor and trucked to the site. During construction, an estimated 12.6 acre-feet of untreated water would be required for common construction-related purposes, including dust suppression, soil compaction, and grading. Dust-control water may be used during ingress and egress of construction vehicle and equipment traffic and during construction of the project. Drinking water would be provided via portable water coolers. According to the Water Supply Assessment prepared for the project, project operation is estimated to require 4.2 AFY of water for landscape irrigation and fire suppression system testing (Appendix 3.15D).

The project site is within the City of Watsonville's service area, which sources its water from the Pajaro Valley Subbasin and surface water from Corralitos and Browns Creeks (City of Watsonville 2021). Surface water from the creeks is not always available, and during those times, groundwater from the Pajaro Valley Subbasin becomes the sole source of water supply. Groundwater supplies 90% to 100% of the City of Watsonville's water supply, and the city's pumping from the Pajaro Valley Subbasin represents approximately 14% of the total annual pumping from the Pajaro Valley Subbasin (City of Watsonville 2021).

According to DWR in accordance with the SGMA, the Pajaro Valley Subbasin is designated as "critically overdrafted," which is defined as a basin where continuation of present water management practices would probably result in significant adverse overdraft-related environmental, social, or economic impacts (DWR 2025a). Groundwater overdraft occurs when groundwater use exceeds the amount of recharge into an aquifer, which over time can lead to a decline in groundwater levels. For coastal areas, lowered groundwater levels can allow for seawater intrusion, which increases the salinity and adversely affects water quality.

Groundwater resources in the Pajaro Valley Subbasin have been managed by PV Water since the agency's formation in 1984. PV Water has completed multiple water supply projects to help reduce overdraft, lessen seawater intrusion, and improve and protect water quality within the entire basin. The 2022 update to the Pajaro Valley Basin Management Plan demonstrated that projects and management actions enacted since the 2014 plan have reduced groundwater pumping, increased groundwater storage, and reduced seawater intrusion (PVWMA 2021). According to the City of Watsonville's 2020 Urban Water Management Plan, there is sufficient water to supply projected demands out to 2045 under normal, single dry year, and multiple dry year scenarios (City of Watsonville 2021). However, the projected water demands during a multiple dry year scenario in 2045 would reach 9,440 AFY, which is 13% more than recent history and could exacerbate declining water levels. The region's more recent history has shown that the City of Watsonville's groundwater levels have recovered after droughts, although seawater intrusion is still occurring outside the City of Watsonville's water service area (City of Watsonville 2021).

According to the Storm Water Control Plan, the project site consists of Watsonville loam soil, which does not allow for substantive groundwater infiltration (Appendix 3.13C). As a result, even though the project would introduce new impervious surfaces, it would not substantively affect on-site groundwater recharge of precipitation.

The project site is currently operating as an apple orchard, with an average water demand of 0.75 AFY per acre (Appendix 3.15D). The project would redevelop a 16-acre portion of the site, and the remaining 31 acres would remain as an apple orchard. The 16-acre portion of the site has an existing demand of 12 AFY. The construction demand would be 12.6 acre-feet for an 18-month period, or 8.4 AFY. During operation of the project, the estimated demand would 4.2 AFY. Amortized over 20 years, the project would have an estimated demand of 4.5 AFY (Appendix 3.15D). Therefore, the project would result in a substantially reduced demand compared to existing conditions. As a result, the potential impacts to groundwater supplies for construction and operations would be **less than significant**.

Criterion 3.15-3 ***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:***

a ***Result in substantial erosion or siltation on- or off-site?***

b ***Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?***

c ***Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?***

d ***Impede or redirect flood flows?***

Less than Significant. Construction of the project would alter drainage patterns at the site by introducing new impervious surfaces. As mentioned above, part of adherence to County requirements requires analysis of existing and proposed stormwater conditions that would occur due to implementation of the project. To analyze the potential impacts of the proposed project in relation to the hydrology and drainage patterns criterion, watershed hydrologic runoff calculations were performed in accordance with County requirements. Existing and proposed runoff were completed for the project in accordance with County guidelines and requirements. The project proposes three infiltration basins that have been sized to detain the 25-year storm event that releases stormwater at a 5-year pre-development rate, consistent with County requirements (Appendix 3.15A).

The proposed grading and stormwater drainage features would include a stormwater bypass system to convey run-on from upstream to maintain overall existing drainage patterns and to route on-site runoff to the proposed infiltration facilities. Water quality treatment and hydromodification requirements would be met consistent with County requirements. These drainage control features would be incorporated into project design plans (Appendix 2C). As a result of implementation of appropriately sized drainage control features as part of project design plans, the proposed project would not substantially alter the existing drainage pattern of the site or increase impervious surfaces in a manner that would result in substantial erosion or siltation on or off site; substantially increase the rate or amount of runoff that would result in flooding on or off site; or contribute runoff that would exceed the capacity of existing or planned stormwater drainage systems (see Criterion 3.15.2.3.1 regarding potentially polluted runoff). Therefore, potential stormwater drainage impacts from construction and operations would be less than significant.

The BESS site is not within a 100-year floodplain as mapped by FEMA and is not within a Flood Awareness Zone as determined by DWR (DWR 2025b; FEMA 2025) (Figure 3.15-7, FEMA). Therefore, the project would not substantially impede or redirect 100-year flood flows. The majority of stormwater runoff would flow toward the infiltration facilities in accordance with County requirements. As a result, construction and operations would not substantively impede or redirect flood flow, and impacts would be **less than significant**.

Criterion 3.15-4 In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

Less than Significant. As noted above, the project site is not within a 100-year Flood Hazard Area and is well inland such that it is not susceptible to tsunami hazards. Seiche hazard zones are limited to areas immediately adjacent to enclosed or semi-enclosed bodies of water. College Lake, a seasonal lake that is typically drained each spring, is within approximately 500 feet of the project site boundary; however, the elevation of the lake is never higher than 60 feet above mean sea level, whereas the project site elevation is at least 90 feet above mean sea level. Therefore, considering the distance to the lake, elevation difference, and seasonality of the lake, the risk of seiche hazards adversely affecting the project is considered low, and the project site would not be subject to seiche hazards.

In addition, operations and maintenance activities associated with a BESS facility would require limited storage of hazardous materials, and those that would be on site would be stored in designated, secured areas with secondary containment. A Hazardous Materials Business Plan for site operations would ensure that all handling, storage, and disposal of hazardous materials associated with project operation would be appropriately prepared and conducted in accordance with all regulatory requirements (Appendix 3.5B). See Section 3.5, Hazardous Materials Handling, and Section 3.14, Waste Management, for further discussion of hazardous materials. As such, the potential construction and operations impacts related to risk of release of pollutants due to project inundation would be **less than significant**.

Criterion 3.15-5 Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less than Significant. As noted above, the proposed project would adhere to all applicable drainage control requirements during construction and operation, and would not involve any other water discharge that is not already discussed for Criterion 3.15.2.3.1. Adherence to these stormwater quality control requirements is consistent with Central Coast RWQCB Basin Plan policies and objectives. Therefore, construction and operation of the project would not conflict or obstruct with implementation of the Basin Plan (RWQCB 2024), and construction and operations impacts would be less than significant.

Water supply for the project would be provided by the City of Watsonville, which sources its water primarily from groundwater in the Pajaro Valley Subbasin. The Pajaro Valley Water Management Agency has prepared a Basin Management Plan, last updated in 2021, as an approved alternative to the Groundwater Sustainability Plan to comply with the SGMA. Construction and operation of the proposed project would not conflict with or obstruct implementation of the projects and management actions of the Basin Management Plan, which include recharge and recovery project improvements, surface water diversions to College Lake, recharge facilities, and recycled water deliveries (PVWMA 2021). In addition, as discussed above, the project would result in a substantially reduced water demand compared to existing conditions.

Therefore, the project would not conflict with or obstruct implementation of a sustainable groundwater management plan, and the potential construction and operations impacts would be **less than significant**.

3.15.3 Cumulative Effects

As defined by California Public Resources Code Section 21083; Title 14 CCR, Sections 15064(h), 15605(c), 15130, and 15355, a cumulative effect refers to a proposed project's incremental effect paired with closely related past,

present, and reasonably foreseeable future projects whose impacts compound or increase the incremental effect of the proposed project.

The geographic scope of cumulative effects on hydrology and water quality differs somewhat depending on the issue being addressed. The geographic scope for surface water quality and hydrology is typically watershed-based, whereby projects contributing flow to the same water bodies as the proposed project would be considered. For groundwater impacts, the geographic scope of cumulative effects would be the groundwater aquifer affected by the proposed project. As discussed above, the potential project impacts to surface water and groundwater were determined to be less than significant.

Surface Water

Not Cumulatively Considerable. In the absence of regulatory controls, the primary impact of the proposed project in the cumulative scenario would be increases in the area covered by impervious surfaces, development of access driveways and utility corridors, and the release of non-point-source pollutants (e.g., motor fuels, trash, sediment). The proposed project, along with other cumulative projects occurring within the Pajaro River Watershed, would be required to comply with applicable federal, state, and local water quality regulations. The proposed project, along with other projects of greater than 1 acre (which includes most of the projects in the cumulative scenario), would be required to obtain coverage under the NPDES CGP, which requires project proponents to identify and implement stormwater BMPs that effectively control erosion and sedimentation and other construction-related pollutants. Further, nearly all projects identified in the cumulative scenario would be required to adhere to County and/or city drainage control requirements that meet state NPDES MS4 Permit requirements. Such projects are required to implement site design; source control; and, in some cases, treatment control BMPs to control the volume, rate, and water quality of stormwater runoff from the project site during long-term operations. This is implemented locally by the County and/or city by requiring new development projects to submit and implement a Storm Water Control Plan. These drainage control regulatory requirements are watershed-based, and, therefore, water quality impacts would not be cumulatively considerable.

Groundwater Resources

Not Cumulatively Considerable. The proposed BESS site is in the Pajaro Valley Subbasin, which is considered by DWR to be a high priority basin and is required to prepare a Groundwater Sustainability Plan or an approved alternative (DWR 2025a). Seawater intrusion is the primary adverse effect caused by the critical overdraft condition, but projects and management actions enacted since the 2014 Basin Plan have been shown to be increasing groundwater storage, reducing groundwater extractions, and reducing seawater intrusion (PVWMA 2021). Although the subbasin is considered in critical overdraft, the project would result in a substantially reduced water demand compared to existing conditions. As a result, groundwater impacts would not be cumulatively considerable.

Hydrology and Drainage Pattern

Not Cumulatively Considerable. In the absence of regulatory controls, the primary impact of the proposed project in the cumulative scenario would be alteration of the natural hydrology of the region through increases in the area covered by impervious surfaces. The typical impact of substantial increases in impervious surfaces is that peak flows within the watershed's drainages are greater in magnitude, shorter in duration, and more responsive to storm events because a greater portion of precipitation is carried by surface runoff rather than percolated into the soil. New roads and/or transmission line corridors can often block or redirect stormwater flows if improperly designed. These impacts are undesirable with respect to management of stormwater flow capacities and flood hazards.

However, based on the hydrology and drainage control reports prepared for the project, which are consistent with County requirements, drainage control features would be incorporated into project design plans to provide on-site storage and treatment (Appendices 3.15A, 3.15B, and 3.15C). Cumulative projects would be required to adhere to these same regulatory requirements such that any increases in impervious surfaces would be required to detain/retain stormwater volumes consistent with County requirements through the use of on-site infiltration facilities or other means. As a result, the additional impervious surfaces associated with cumulative development would have minimal to no hydrologic impact on receiving waters in the watershed. Therefore, hydrologic impacts would not be cumulatively considerable.

Flood Hazards

Not Cumulatively Considerable. The proposed BESS site is not within an identified Flood Hazard Area (i.e., 100-year FEMA flood zone or DWR Flood Awareness Zone). Just as with the proposed project, cumulative projects would be required to adhere to local stormwater drainage control requirements, which require on-site detainment of any increases in stormwater runoff associated with any increases in impervious surfaces. Further, cumulative project development would be subject to CEQA, which mandates that development within a floodplain not substantially impede or redirect flood flows or cause off-site flood-related impacts. As a result, the proposed project would not combine to contribute to cumulatively considerable flood-related impacts.

Water Planning

Not Cumulatively Considerable. The project site overlies the Pajaro Valley Subbasin, which is subject to the SGMA and is being managed by PV Water in accordance with the Basin Plan. As noted above, the proposed project is not expected to violate any water quality standards, and measures would be taken both during construction and throughout operation to prevent potential contaminants from leaving the site by runoff. All cumulative projects would equally be required to comply with these regulations and standards, which are consistent with Basin Plan policies, and thus, through compliance with RWQCB requirements, an NPDES permit, and implementation of a SWPPP, the project would not cumulatively conflict with or obstruct implementation of the Central Coast RWQCB Basin Plan.

3.15.4 Mitigation Measures

No mitigation measures beyond the project design's avoidance and minimization measures are required because no significant impacts would occur.

3.15.5 Laws, Ordinances, Regulations, and Standards

Federal, state, and local LORS applicable to water resources are discussed in this subsection and are summarized in Table 3.15-3.

Table 3.15-3. LORS Applicable to Water Resources

Jurisdiction	LORS	Applicability	Project Conformity	Opt-In Application Reference
Federal	Clean Water Act	Requires adherence to NPDES stormwater and	**Yes.** Project would include preparation and implementation of a	Criterion 3.15-1 Criterion 3.15-3

Table 3.15-3. LORS Applicable to Water Resources

Jurisdiction	LORS	Applicability	Project Conformity	Opt-In Application Reference
		water discharge requirements.	Stormwater Pollution Prevention Plan and construction BMPs during construction activities to prevent off-site transport of pollutants. For operation, project would design and construct stormwater treatment controls to protect the water quality of receiving waters.	Criterion 3.15-5 Section 3.15.5.1
Federal	Antidegradation Policy	Requires states to develop statewide antidegradation policies and identify methods for implementing them.	**Yes.** Project would implement construction and post-construction BMPs to prevent off-site transport of pollutants.	Criterion 3.15-1 Criterion 3.15-3 Criterion 3.15-5 Section 3.15.5.1
Federal	Safe Drinking Water Act	Authorizes the U.S. Environmental Protection Agency to set national health-based standards for drinking water.	**Yes.** Treatment controls of stormwater (e.g., on-site infiltration) would aid in the protection of receiving waters and groundwater to ensure that water resources used for drinking water are protected.	Criterion 3.15-1 Criterion 3.15-3 Criterion 3.15-5 Section 3.15.5.1
Federal	National Flood Insurance Act	Established the National Flood Insurance Program to provide flood insurance within communities willing to adopt floodplain management programs to mitigate future flood losses.	**Yes.** Stormwater drainage controls (i.e., infiltration facilities) would ensure that project peak storm runoff does not exceed stormwater volumes under existing conditions.	Criterion 3.15-4 Section 3.15.5.1
Federal	Executive Order 11988	FEMA requires local governments covered by federal flood insurance to pass and enforce a floodplain management ordinance that specifies minimum requirements for any construction within the 100-year floodplain.	**Yes.** Stormwater drainage controls (i.e., infiltration facilities) would ensure that project peak storm runoff does not exceed stormwater volumes under existing conditions.	Criterion 3.15-4 Section 3.15.5.1
State	Porter–Cologne Water Quality Control Act	The basic water quality control law establishes the legal and regulatory framework for California's water quality control to	**Yes.** Stormwater drainage controls (i.e., infiltration facilities) would provide post-construction treatment of stormwater runoff and prevent off-site transport of pollutants.	Criterion 3.15-1 Criterion 3.15-3 Section 3.15.5.2

Table 3.15-3. LORS Applicable to Water Resources

Jurisdiction	LORS	Applicability	Project Conformity	Opt-In Application Reference
		implement the provisions of the Clean Water Act.	In addition, the project is expected to require Waste Discharge Requirements from the RWQCB. A Waste Discharge Requirement application would be submitted to the Central Coast RWQCB.	
State	California Water Code	Establishes districts and local agencies with specific statutory provisions to manage surface water and authority to exercise some forms of groundwater management.	**Yes.** Stormwater drainage controls (i.e., infiltration facilities) would provide post-construction treatment of stormwater runoff and prevent off-site transport of pollutants.	Criterion 3.15-1 Criterion 3.15-2 Criterion 3.15-3 Section 3.15.5.2
State	California Toxics Rule	Establishes water quality criteria for certain toxic substances to be applied to waters in the state.	**Yes.** Stormwater drainage controls (i.e., post-construction treatment controls) would ensure that water quality of receiving waters is protected.	Criterion 3.15-1 Criterion 3.15-3 Section 3.15.5.2
State	Sustainable Groundwater Management Act	SGMA requires governments and water agencies of high- and medium-priority basins to halt overdraft and bring groundwater basins into balanced levels of pumping and recharge.	**Yes.** Project site is in Pajaro Valley Groundwater Subbasin, which is a high priority basin and subject to SGMA requirements.	Criterion 3.15-2 Criterion 3.15-5 Section 3.15.5.2
Local	Phase II Municipal NPDES Permit	Permit serves as an NPDES permit under the federal Clean Water Act and waste discharge requirements under California law.	**Yes.** Project design would include post-construction treatment controls to protect water quality.	Criterion 3.15-1 Criterion 3.15-3 Criterion 3.15-5 Section 3.15.5.3
Local	Santa Cruz County Code Chapter 7.79	Chapter 7.79, Runoff and Pollution Control, provides the stormwater standards to comply with the requirements of the NPDES Phase II MS4 Permit for stormwater and non-stormwater discharges.	**Yes.** The project's stormwater management features would be designed consistent with the County of Santa Cruz stormwater requirements to ensure consistency with the NPDES Phase II MS4 Permit.	Criterion 3.15-1 Criterion 3.15-3 Criterion 3.15-5 Section 3.15.5.3

Table 3.15-3. LORS Applicable to Water Resources

Jurisdiction	LORS	Applicability	Project Conformity	Opt-In Application Reference
Local	Santa Cruz County Code Chapter 16.20, Grading, and Chapter 16.22, Erosion Control	Chapter 16.20, Grading, provides the grading requirements for earthwork activities, which must be provided in an erosion control plan pursuant to Chapter 16.22.	**Yes.** The project's contractor would prepare and implement erosion control prevention measures as detailed in an erosion control plan.	Criterion 3.15-1 Criterion 3.15-3 Criterion 3.15-5 Section 3.15.5.3

Notes: LORS = Laws, Ordinances, Regulations, and Standards; NPDES = National Pollutant Discharge Elimination System; BMP = best management practice; RWQCB = Regional Water Quality Control Board; SGMA = Sustainable Groundwater Management Act; FEMA = Federal Emergency Management Agency; MS4 = municipal separate storm sewer system.

3.15.5.1 Federal

Clean Water Act

The Clean Water Act (CWA) was first introduced in 1948 as the Water Pollution Control Act. CWA authorizes federal, state, and local entities to cooperatively create comprehensive programs to eliminate or reduce pollution in state waters and tributaries. The primary goals of the CWA are to restore and maintain the chemical, physical, and biological integrity of the nation's waters and to make all surface waters fishable and swimmable. As such, the CWA forms the basic national framework for the management of water quality and the control of pollutant discharges. The CWA also sets forth objectives to achieve the abovementioned goals. These objectives include regulating pollutant and toxic pollutant discharges; providing for water quality that protects and fosters the propagation of fish, shellfish, and wildlife; developing waste treatment management plans; and developing and implementing programs for the control of non-point sources of pollution.

Since its introduction, major amendments to the CWA have been enacted (e.g., 1961, 1966, 1970, 1972, 1977, and 1987). Amendments enacted in 1970 created the EPA, and amendments enacted in 1972 deemed the discharge of pollutants into waters of the United States from any point source unlawful unless authorized by an EPA NPDES permit. Amendments enacted in 1977 mandated development of a Best Management Practices Program at the state level and provided the Water Pollution Control Act with the common name of "Clean Water Act," which is universally used today. Amendments enacted in 1987 required EPA to create specific requirements for discharges.

In response to the 1987 amendments to the CWA and as part of Phase I of its NPDES permit program, EPA began requiring NPDES permits for MS4s generally serving, or located in, incorporated cities with 100,000 or more people (referred to as municipal permits); 11 specific categories of industrial activities (including landfills); and construction activity that disturbs 5 acres or more of land. Phase II of EPA's NPDES permit program, which went into effect in early 2003, extended the requirements for NPDES permits to numerous small MS4s, construction sites of 1 to 5 acres, and industrial facilities owned or operated by small MS4s. The NPDES permit program is typically administered by individual authorized states. In 2008, EPA published draft effluent limitation guidelines for the construction and development industry. On June 27, 2016, EPA finalized its 2016 Effluent Guidelines Program Plan.

In California, the NPDES stormwater permitting program is administered by the State Water Resources Control Board (SWRCB), which was created by the legislature in 1967. The joint authority of water distribution and water quality protection allows the SWRCB to provide protection for the state's waters through its nine RWQCBs. The RWQCBs develop and enforce water quality objectives and implement plans that would best protect California's waters, acknowledging areas of different climate, topography, geology, and hydrology. The RWQCBs develop basin plans for their hydrologic areas, issue WDRs, enforce action against stormwater discharge violators, and monitor water quality.

Clean Water Act Section 303 (Beneficial Use and Water Quality Objectives)

The Central Coast RWQCB is responsible for the protection of the beneficial uses of waters within Santa Cruz County. The Central Coast RWQCB uses its planning, permitting, and enforcement authority to meet its responsibilities adopted in its Basin Plan (RWQCB 2024) to implement plans, policies, and provisions for water quality management.

In accordance with state policy for water quality control, the Central Coast RWQCB employs a range of beneficial use definitions for surface waters, groundwater basins, marshes, and mudflats that serve as the basis for establishing water quality objectives and discharge conditions and prohibitions. The Basin Plan identifies existing and potential beneficial uses supported by the key surface water drainages throughout its jurisdiction. Under CWA Section 303(d), the State of California is required to develop a list of impaired water bodies that do not meet water quality standards and objectives. A total maximum daily load defines how much of a specific pollutant/stressor a given water body can tolerate and still meet relevant water quality standards. The Central Coast RWQCB has developed total maximum daily loads for select reaches of water bodies.

Clean Water Act Section 401 (Water Quality Certification)

CWA Section 401 requires that an applicant for any federal permit (e.g., a U.S. Army Corps of Engineers Section 404 permit) obtain certification from the state, ensuring that discharges to waters of the United States comply with provisions of the CWA and with state water quality standards. For example, an applicant for a permit under CWA Section 404 must also obtain water quality certification per CWA Section 401. CWA Section 404 requires a permit from the U.S. Army Corps of Engineers prior to discharging dredged or fill material into waters of the United States, with exceptions. For the project site, the Central Coast RWQCB must provide the water quality certification required under CWA Section 401 to minimize or eliminate the potential water quality impacts associated with the action(s) requiring a federal permit.

Clean Water Act Section 402 (National Pollutant Discharge Elimination System)

The NPDES permit program, as authorized by CWA Section 402, was established to control water pollution by regulating point sources that discharge pollutants into waters of the United States (33 USC 1342). In California, EPA has authorized the SWRCB permitting authority to implement the NPDES program.

Regulations (Phase II Rule) that became final on December 8, 1999, expanded the existing NPDES program to address stormwater discharges from construction sites that disturb land equal to or greater than 1 acre and less than 5 acres (small construction activity). The regulations also require that stormwater discharges from small MS4s be regulated by an NPDES General Permit for Storm Water Discharges Associated with Construction Activity (CGP), Order No. 99-08-DWQ. The CGP requires development and implementation of a SWPPP, which describes BMPs the discharger would use to protect stormwater runoff. The SWPPP must contain a visual monitoring program, a chemical monitoring program for non-visible pollutants to be implemented if there is a failure of BMPs, and a sediment-monitoring plan if the site

discharges directly to a water body listed on the 303(d) list for sediment. Routine inspection of all BMPs is required under the provisions of the CGP. On September 8, 2022, the SWRCB issued a new CGP (Order No. 2022-0057-DWQ, NPDES No. CAS000002), which became effective on September 1, 2023.

Clean Water Act Section 404

CWA Section 404 established a permitting program to regulate the discharge of dredged or fill material into waters of the United States, which include wetlands adjacent to national waters (33 USC 1344). This permitting program is administered by the U.S. Army Corps of Engineers and enforced by EPA.

The project would include preparation and implementation of a SWPPP and BMPs during construction activities to prevent off-site transport of pollutants. For operation, the project would design and construct stormwater treatment controls to protect the water quality of receiving waters.

Federal Antidegradation Policy

The Federal Antidegradation Policy (40 CFR 131.12) requires states to develop statewide antidegradation policies and identify methods for implementing them. Pursuant to the federal regulation, state antidegradation policies and implementation methods must, at a minimum, protect and maintain (1) existing in-stream water uses; (2) existing water quality where the quality of the waters exceeds levels necessary to support existing beneficial uses, unless the state finds that allowing lower water quality is necessary to accommodate economic and social development in the area; and (3) water quality in waters considered an outstanding national resource.

The project would implement construction and post-construction BMPs to prevent off-site transport of pollutants.

Safe Drinking Water Act

Congress passed the Safe Drinking Water Act in 1974 to protect public health by regulating the nation's public drinking water supply. The act authorizes EPA to set national health-based standards for drinking water to protect against both naturally occurring and human-made contaminants that may be found in drinking water.

Per Section 1424(e) of the Safe Drinking Water Act, EPA established the Sole Source Aquifer Program in 1977 to help prevent contamination of groundwater from federally funded projects. The Sole Source Aquifer Program allows for EPA environmental review of any project that is financially assisted by federal grants or federal loan guarantees to determine whether such projects would have the potential to contaminate a sole source aquifer.

The Wellhead Protection Program was developed as part of the Ground Water Protection Strategy for States and Tribes under the 1986 Amendments to the Safe Drinking Water Act. The Wellhead Protection Program includes delineation of Wellhead Protection Program areas, detection of possible contamination, remediation and monitoring of contamination, contamination prevention, and public education and participation. In March 2021, EPA made a determination to issue drinking water regulations for perfluorooctanoic acid (PFOA) and per- and polyfluoroalkyl substances (PFAS), and as part of that process issued a PFAS Strategic Roadmap in October 2021. This roadmap states that EPA would issue drinking water regulations for PFAS under an accelerated time frame.

The project's treatment controls of stormwater (e.g., on-site infiltration) would aid in the protection of receiving waters and groundwater to ensure that water resources used for drinking water are protected.

National Flood Insurance Act

The National Flood Insurance Act of 1968 established the National Flood Insurance Program to provide flood insurance within communities that were willing to adopt floodplain management programs to mitigate future flood losses. The act also required the identification of all floodplain areas in the United States and the establishment of flood-risk zones within those areas. FEMA is the primary agency responsible for administering programs and coordinating with communities to establish effective floodplain management standards. FEMA is responsible for preparing Flood Insurance Rate Maps that delineate the areas of known special flood hazards and their risk applicable to the community. The program encourages the adoption and enforcement by local communities of floodplain management ordinances that reduce flood risks. In support of the program, FEMA identifies Flood Hazard Areas throughout the United States on FEMA flood hazard boundary maps.

The project's stormwater drainage controls (i.e., infiltration facilities) would ensure that project peak storm runoff does not exceed stormwater volumes under existing conditions.

Executive Order 11988

Under Executive Order 11988, Floodplain Management, FEMA is responsible for management of floodplain areas defined as the lowland and relatively flat areas adjoining inland and coastal waters subject to a 1% or greater chance of flooding in any given year (the 100-year floodplain). FEMA requires that local governments covered by federal flood insurance pass and enforce a floodplain management ordinance that specifies minimum requirements for any construction within the 100-year floodplain. Executive Order 11988 addresses floodplain issues related to public safety, conservation, and economics. It generally requires federal agencies constructing, permitting, or funding a project in a floodplain to avoid incompatible floodplain development, be consistent with the standards and criteria of the National Flood Insurance Program, and restore and preserve natural and beneficial floodplain values.

The project's stormwater drainage controls (i.e., infiltration facilities) would ensure that project peak storm runoff does not exceed stormwater volumes under existing conditions.

3.15.5.2 State

Porter–Cologne Water Quality Control Act

The Porter–Cologne Water Quality Control Act of 1967 (California Water Code Section 13000 et seq.) (Porter–Cologne Act) is the basic water quality control law for California. The Porter–Cologne Act established the legal and regulatory framework for California's water quality control. The California Water Code authorizes the SWRCB to implement the provisions of the CWA, including the authority to regulate waste disposal and require cleanup of discharges of hazardous materials and other pollutants.

As discussed previously, California is divided into nine RWQCBs, governing implementation and enforcement of the California Water Code and the CWA. The project site is within Region 3, also known as the Central Coast Region. Each RWQCB is required to formulate and adopt a Basin Plan for its region. The Central Coast RWQCB Basin Plan is a comprehensive document that reports beneficial uses for surface water and groundwater, defines narrative and numeric parameters to protect water quality, and describes implementation programs to protect waters throughout the region. This Basin Plan must adhere to the policies set forth in the California Water Code and established by the SWRCB. Each RWQCB is also given authority to include within its Basin Plan water discharge

prohibitions applicable to particular conditions, areas, and types of waste. The original 1970 Basin Plan for the Central Coast Region has been amended over time and is reviewed and updated as necessary, with a triennial review occurring on an ongoing basis. The current version of the Basin Plan was published in June 2024 and incorporates amendments through October 2025 (RWQCB 2024).

The project's stormwater drainage controls (i.e., infiltration facilities) would provide post-construction treatment of stormwater runoff and prevent off-site transport of pollutants.

Pursuant to provisions of the Porter–Cologne Act, the RWQCBs regulate discharging waste, or proposing to discharge waste, within any region that could affect a water of the state (California Water Code Section 13260[a]). The SWRCB defines a water of the state as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code Section 13050[e]). All waters of the United States are waters of the state. Wetlands, such as isolated seasonal wetlands, that are not generally considered waters of the United States are considered waters of the state if, "under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation" (SWRCB 2021). If a CWA Section 404 permit is not required for a project, the RWQCB may still require a permit (WDRs) for impacts to waters of the state under the Porter–Cologne Act.

The project is expected to require a WDR from the RWQCB. A WDR application would be submitted to the Central Coast RWQCB.

The NPDES Industrial General Permit (State Board Order WQ 2014-0057-DWQ, as Amended By Order WQ 2015-0122-DWQ & Order WQ 2018-0028-DWQ) regulates industrial stormwater discharges and authorizes non-stormwater discharges from industrial facilities in California. The Industrial General Permit is called a general permit because many industrial facilities are covered by the same permit but comply with its requirements at their individual industrial facilities. The SWRCB and RWQCBs implement and enforce the Industrial General Permit. The stormwater regulations require a broad range of industrial facilities to comply with the Industrial General Permit. They include manufacturing facilities, mining operations, disposal sites, recycling yards, transportation facilities, and others.

Based on a review of Attachment A of the Industrial Storm Water General Permit, which contains a complete list of required facilities, the project is not subject to an Industrial General Permit.

California Water Code

The California Water Code includes 22 kinds of districts or local agencies with specific statutory provisions to manage surface water. Many of these agencies have statutory authority to exercise some forms of groundwater management. For example, a Water Replenishment District (California Water Code Section 60000 et seq.) is authorized to establish groundwater replenishment programs and collect fees for that service, and a Water Conservation District (California Water Code Section 75500 et seq.) can levy groundwater extraction fees. Through special acts of the legislature, 13 local agencies have been granted greater authority to manage groundwater. Most of these agencies, formed since 1980, have the authority to limit export and even control some in-basin extraction upon evidence of overdraft or the threat of an overdraft condition. These agencies can also generally levy fees for groundwater management activities and for water supply replenishment.

The project's stormwater drainage controls (i.e., infiltration facilities) would provide post-construction treatment of stormwater runoff and prevent off-site transport of pollutants.

California Toxics Rule

In 2000, EPA promulgated the California Toxics Rule, which establishes water quality criteria for certain toxic substances to be applied to waters in the state. In 1994, a California state court revoked the state's water quality control plans, which contained numeric criteria for water quality. This was in direct violation of the CWA and required EPA action. EPA then implemented the California Toxics Rule. EPA promulgated this rule based on CWA Section 303(c)(2)(B), which dictates that states must adopt numeric criteria in order to protect human health and the environment. The California Toxics Rule establishes acute (i.e., short-term) and chronic (i.e., long-term) standards for bodies of water such as inland surface waters and enclosed bays and estuaries that are designated by the RWQCBs as having beneficial uses protective of aquatic life or human health.

The project's stormwater drainage controls (i.e., post-construction treatment controls) would ensure that water quality of receiving waters is protected.

Sustainable Groundwater Management Act

On September 16, 2014, Governor Brown signed into law a three-bill legislative package—Assembly Bill 1739, Senate Bill 1168, and Senate Bill 1319—collectively known as the SGMA. The SGMA requires governments and water agencies of high- and medium-priority basins to halt overdraft and bring groundwater basins into balanced levels of pumping and recharge. Under the SGMA, these basins should reach sustainability within 20 years of implementing their sustainability plans. For critically over-drafted basins, sustainability should be achieved by 2040. For the remaining high- and medium-priority basins, 2042 is the deadline. Through the SGMA, DWR provides ongoing support to local agencies through guidance, financial assistance, and technical assistance. The SGMA empowers local agencies to form Groundwater Sustainability Agencies to manage basins sustainably, and requires those Groundwater Sustainability Agencies to adopt Groundwater Sustainability Plans for critical (i.e., medium- to high-priority) groundwater basins in California. The Pajaro Valley Subbasin is a high-priority basin and is subject to the requirements of the SGMA.

Water supplied for the project, if sourced from groundwater, would be subject to any limitations and conservation measures that may be in place through the Pajaro Valley Subbasin's Basin Management Plan.

3.15.5.3 Local

Municipal National Pollutant Discharge Elimination System Permit

The Central Coast RWCQB adopted Resolution No. R3-2013-0032, which approved post-construction stormwater management requirements for development projects in the Central Coast region. The requirements apply to small MS4s subject to post-construction requirements of the Phase II Municipal General Permits and are intended to apply to development projects to protect watershed processes so that beneficial uses of receiving waters affected by stormwater management are maintained and, where applicable, restored. The requirements focus on low-impact development (LID) and other types of control measures. LID treatment systems implement water harvesting and use, infiltration, and evapotranspiration. LID is an effective approach to managing stormwater to minimize the adverse effects of urbanization and development on watershed processes and beneficial uses resulting from changes in stormwater runoff conditions. LID strategies can achieve significant reductions in pollutant loading and

runoff volumes, and enhance groundwater recharge rates. The proper implementation of LID techniques results in greater benefits than single-purpose stormwater and flood control infrastructure.

The project design would include post-construction treatment controls to protect water quality.

Santa Cruz County Code Chapter 7.79, Runoff and Pollution Control

SCCC Chapter 7.79 addresses runoff and pollution control to comply with the Phase II Municipal General Permit and to protect the health, safety, and welfare of the public by protecting surface water and groundwater quality, groundwater recharge, beneficial uses, marine habitats, watershed health, and ecosystems of the receiving waters in Santa Cruz County, including the Monterey Bay, from discharge of pollutants and the adverse effects of hydromodification, and to comply with federal and state laws concerning stormwater. Chapter 7.79 requires compliance with industrial and construction NPDES discharge permits. Additionally, prior to issuing a County permit under Title 16, Environmental and Resource Protection, a SWPPP must be prepared addressing the use of BMPs during construction, including appropriate BMPs from the County Construction Site Stormwater Pollution Control BMP Manual (County of Santa Cruz 2011). New development and redevelopment must also mitigate impacts due to development, and implement BMPs per the County's Design Criteria. These BMPs include measures to control the volume, runoff rate, and potential pollutant load of stormwater runoff from new development and redevelopment projects; to minimize the generation, transport, and discharge of pollutants; to prevent runoff in excess of predevelopment conditions; and to maintain predevelopment groundwater recharge.

The project design would include post-construction treatment controls to protect water quality.

Santa Cruz County Code Section 16.20, Grading, and Section 16.22, Erosion Control

The County Grading Ordinance, adopted as SCCC Chapter 16.20, sets forth rules and regulations to control all grading, including excavations, earthwork, road construction, dredging, diking, fills, and embankments. It also establishes administrative procedures for the issuance of permits, and provides for approval of grading plans and inspections. Grading permits require Planning Commission approval for grading in excess of 8,000 cubic yards, or for which an Environmental Impact Report was prepared, or for grading in excess of 1,000 cubic yards that is visible from a scenic corridor roadway. All other grading permits, including those for agricultural grading, must be approved by the Planning Director, pursuant to SCCC Section 16.20.040 and Section 16.20.195, through a staff-level administrative process.

Agricultural grading is defined as any grading that takes place on land designated for commercial agricultural use, as specified in SCCC Section 16.50.040, provided, however, that agricultural grading does not include any grading on such lands connected with the construction of access roads or building sites, except greenhouse sites. Agricultural grading on less than 20% slopes, as well as vineyards and associated terracing (regardless of slope), does not require a regular grading permit and is instead subject to agricultural grading regulations. However, defined "specialized agricultural activities," such as greenhouses, indoor growing, aquaculture, and any cannabis cultivation activities involving more than 100 cubic yards, is not considered agricultural grading and requires a regular grading permit, and grading on 20% slopes or more also requires a regular grading permit. Specialized agricultural activities also require a regular grading permit rather than a less-specific agricultural grading permit.

A proposed grading plan must be accompanied by an erosion control plan and erosion preventive measures, in accordance with the requirements of the County Erosion Control Ordinance of SCCC Chapter 16.22.

The project would adhere to all grading and erosion control consistent with the SCCC.

3.15.6 Agency Contacts, Permits, and Permit Schedule

Applicable agency contacts for hydrology and water quality are shown in Table 3.15-4. The project would prepare a Spill Prevention and Control Countermeasure Plan, and approval of the Spill Prevention and Control Countermeasure Plan would be superseded by California Energy Commission approval under the opt-in program. In addition, the project would be designed per Santa Cruz County Fire Department requirements and standards for BESSs; however, approval from the Santa Cruz County Fire Department would be superseded by California Energy Commission approval of the project under the opt-in program.

Table 3.15-4. Agency Contacts

Issue/Approval	Agency	Address	Contact
National Pollutant Discharge Elimination System Construction General Permit	Central Coast Regional Water Quality Control Board, National Pollution Discharge Elimination System or Discharge of Waste to Waters of the United States, documents submitted via SMARTS	Arwen Wyatt-Mair Senior Water Resources Control Engineer (805) 542-4695 arwen.wyattmair@waterboards.ca.gov	Stormwater Pollution Prevention Plan for construction activities
Waste Discharge Requirements	Same agency as above	Same contact as above	Discharge of fill to waters of the state under the Porter–Cologne Act

Note: SMARTS = Stormwater Multiple Application and Report Tracking System.

3.15.7 References

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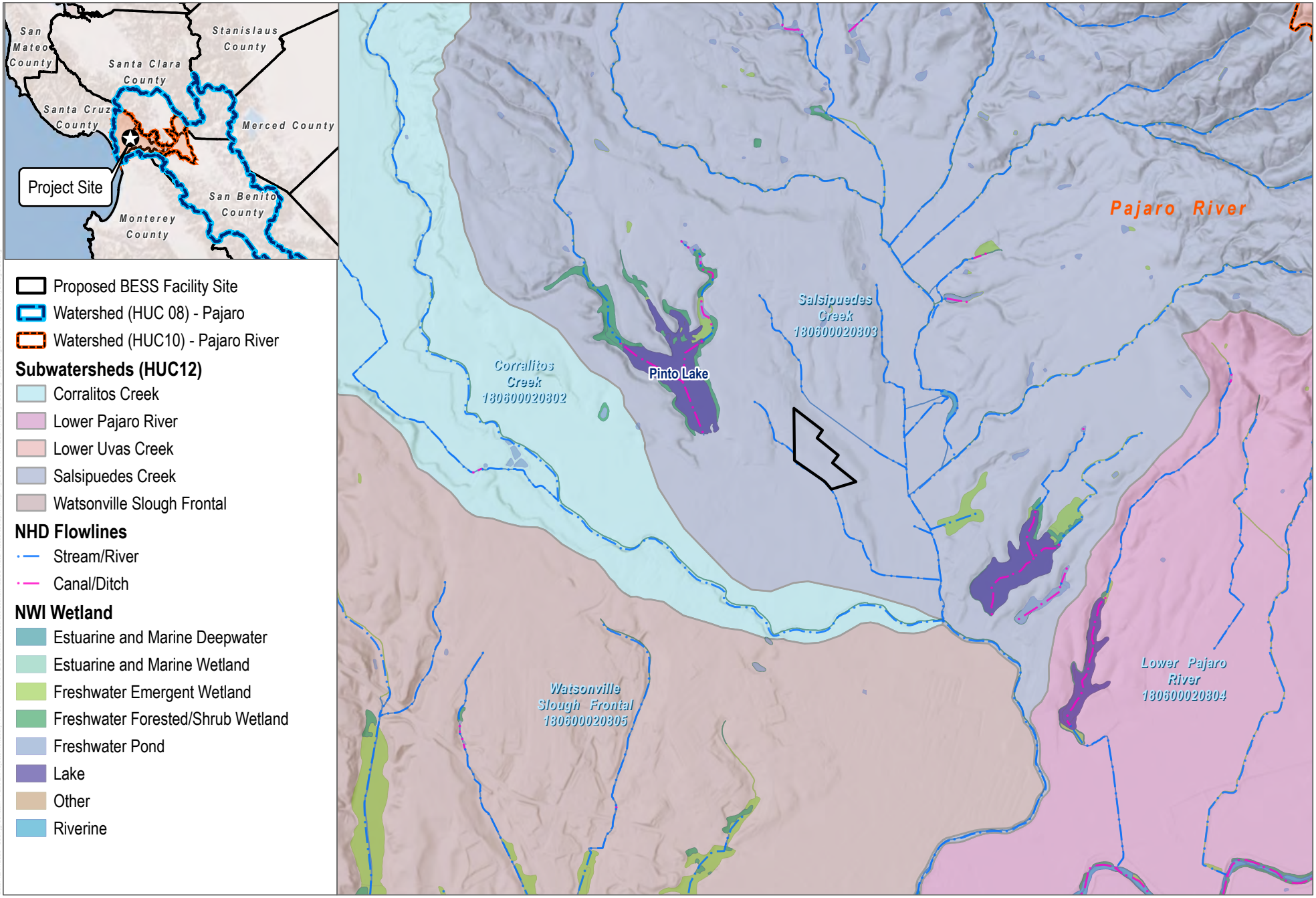

SOURCE: Esri World Hillshade; USGS

DUDEK

0 2,200 4,400 Feet

FIGURE 3.15-1

RWQCB Hydrologic Setting

Seahawk Battery Energy Storage System Project

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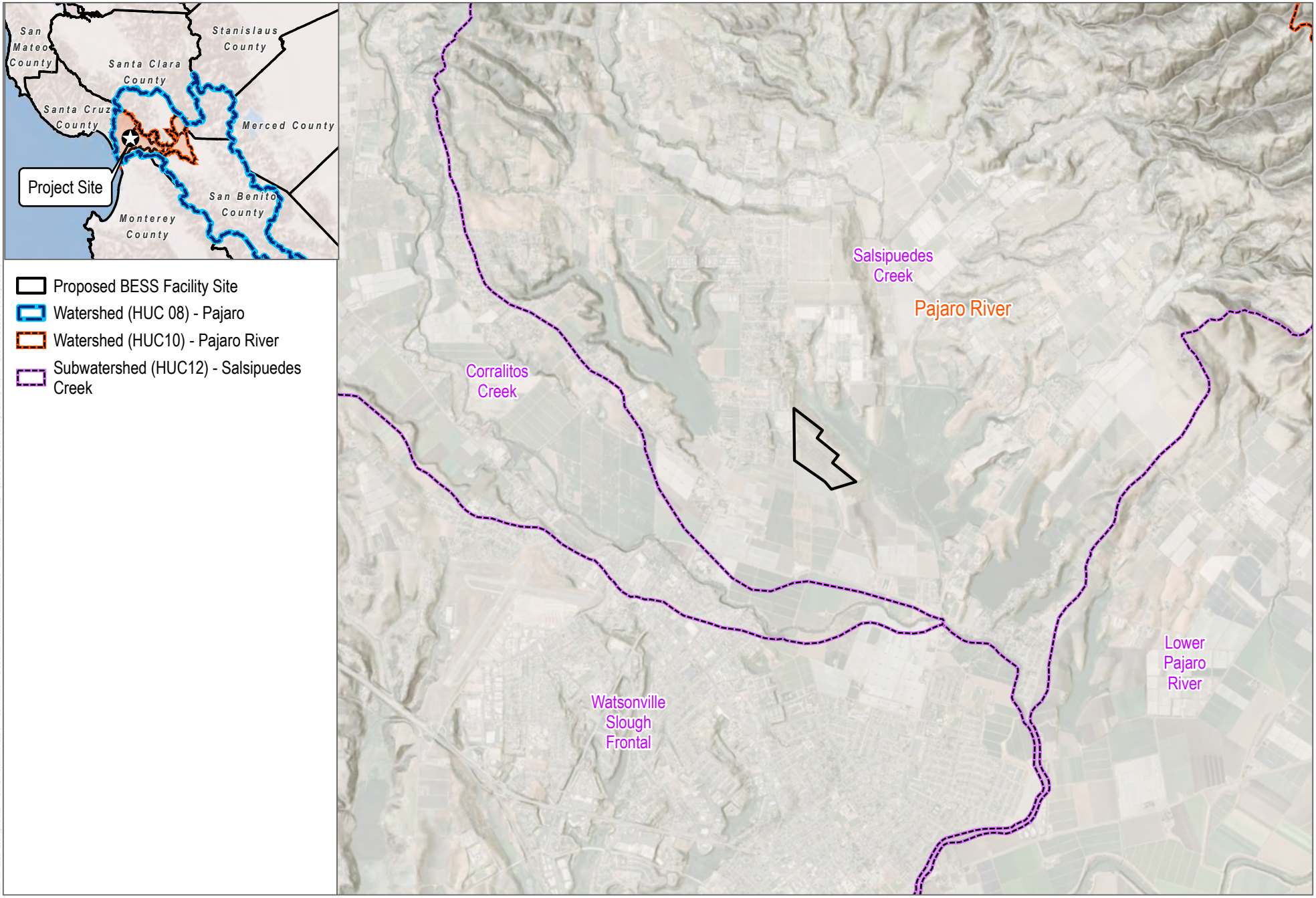

SOURCE: World Hillshade; USGS

DUDEK

0 2,200 4,400 Feet

FIGURE 3.15-2

USGS Hydrologic Setting

Seahawk Battery Energy Storage System Project

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Existing Drainage Direction

Off-site area that drains to Proposed BESS Facility Site

SOURCE: C2G / Civil Consultants Group, Inc 2024

DUDEK

0 2,500 5,000 Feet

FIGURE 3.15-3

Local Drainage Features

Seahawk Battery Energy Storage System Project

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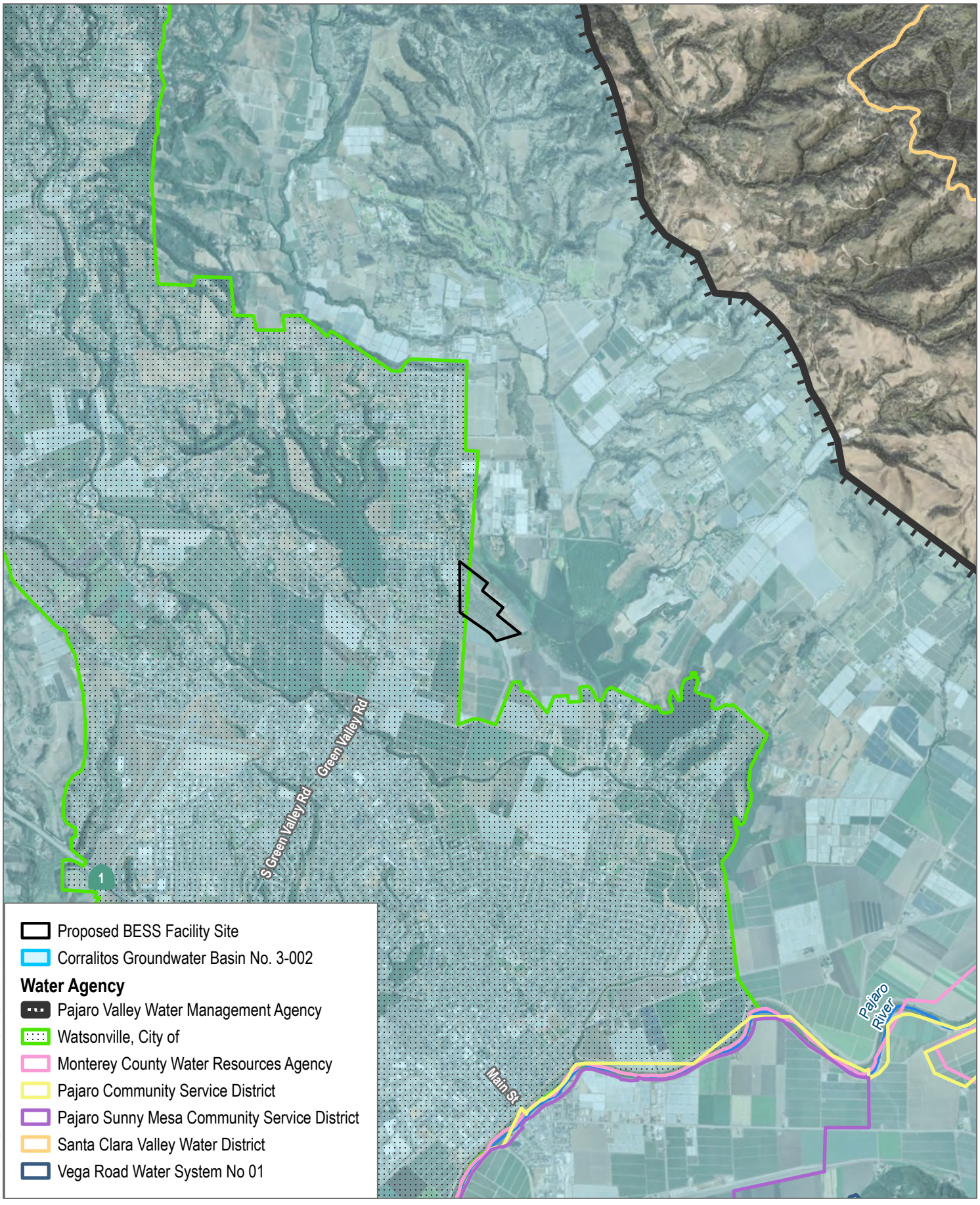

SOURCE: DWR; RWQCB; Maxar 2024; Open Street Map 2023

DUDEK

0 2,000 4,000 Feet

FIGURE 3.15-4

Groundwater Basins and Water Agencies

Seahawk Battery Energy Storage System Project

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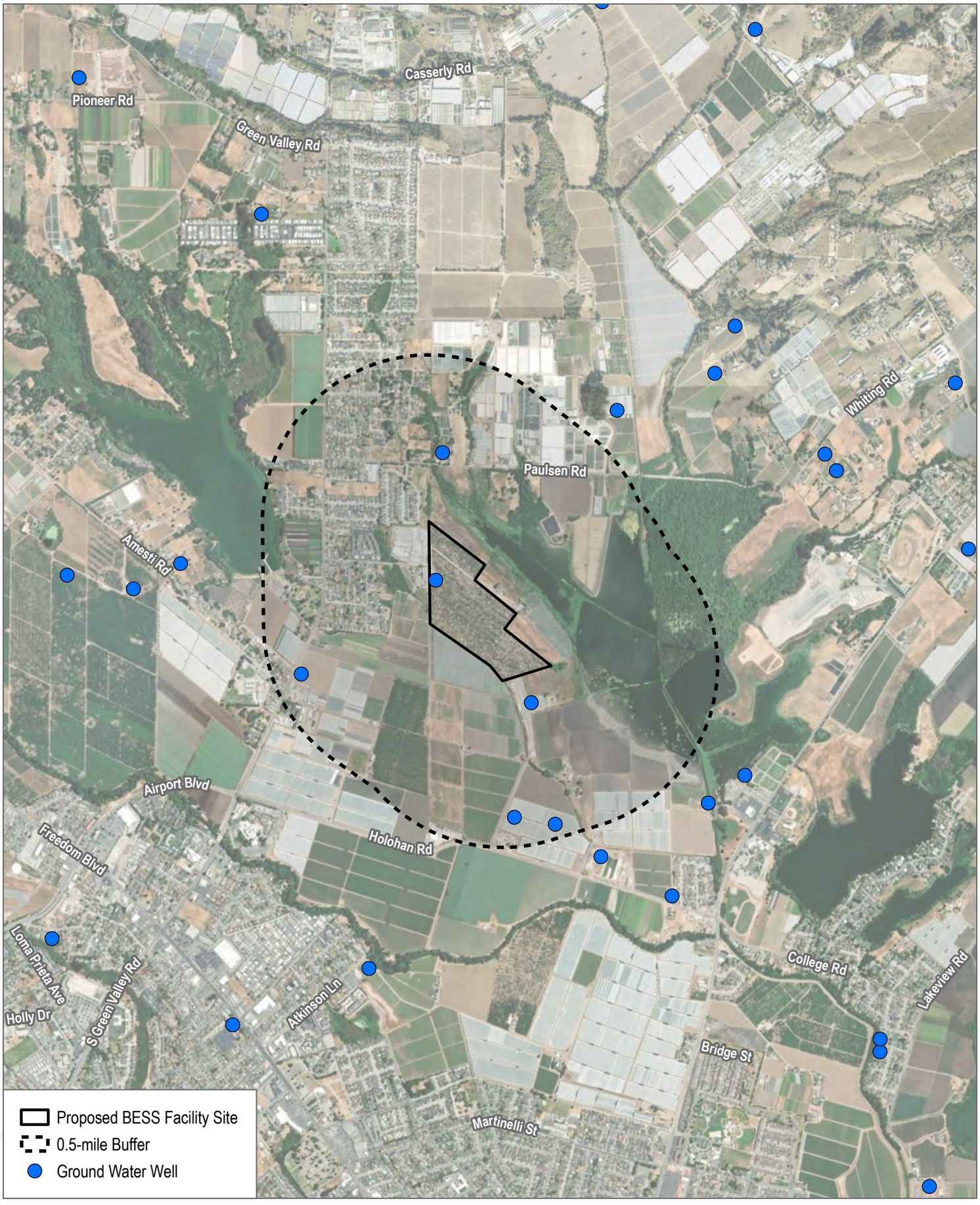

SOURCE: USGS 2025; Maxar 2024; Open Street Map 2023

DUDEK

0 1,000 2,000 Feet

FIGURE 3.15-5

Groundwater Wells

Seahawk Battery Energy Storage System Project

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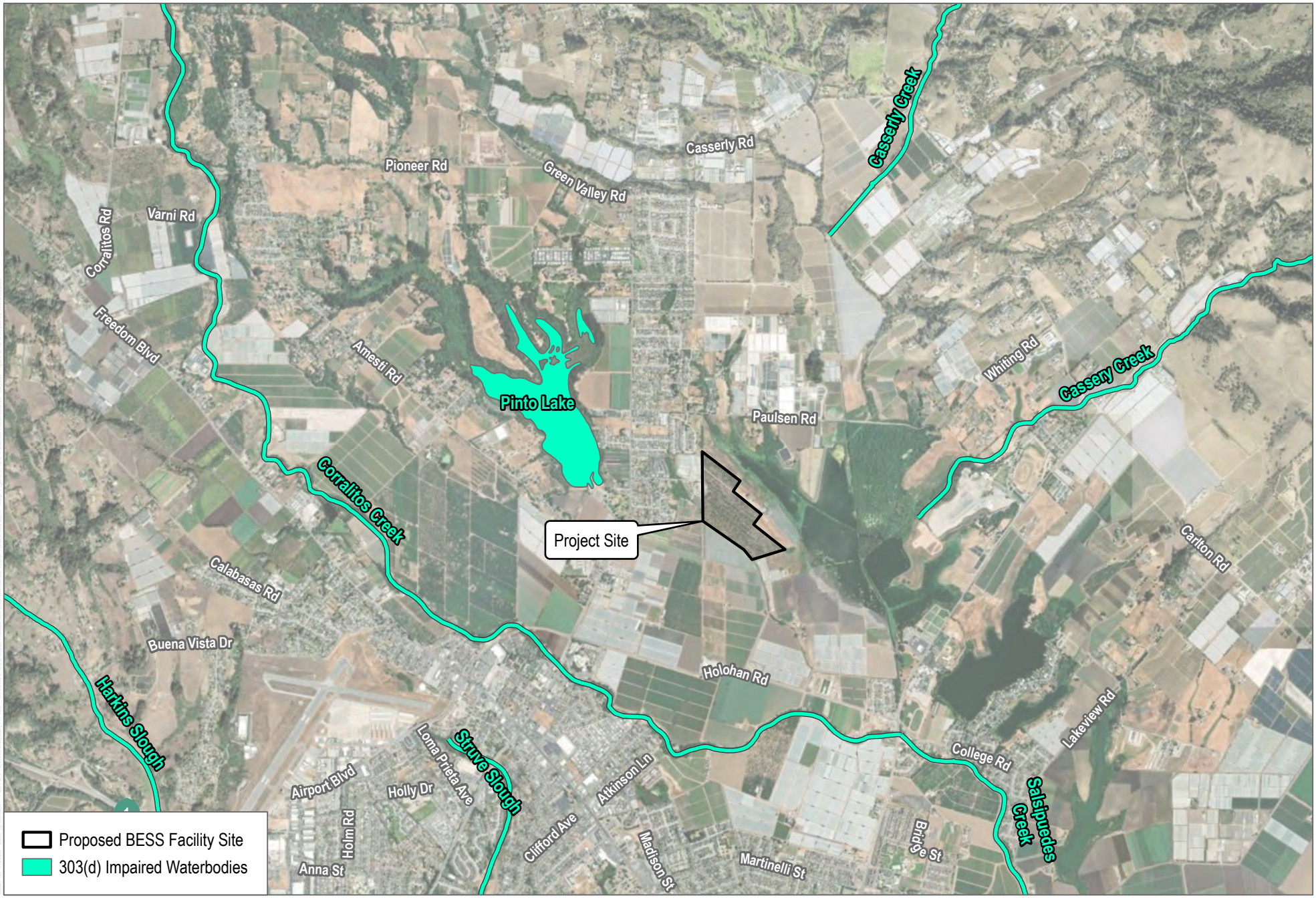

SOURCE: California State Water Resources Control Board 2025; Maxar 2024; Open Street Map 2023

DUDEK

0 1,500 3,000 Feet

FIGURE 3.15-6

Impaired Waterbodies

Seahawk Battery Energy Storage System Project

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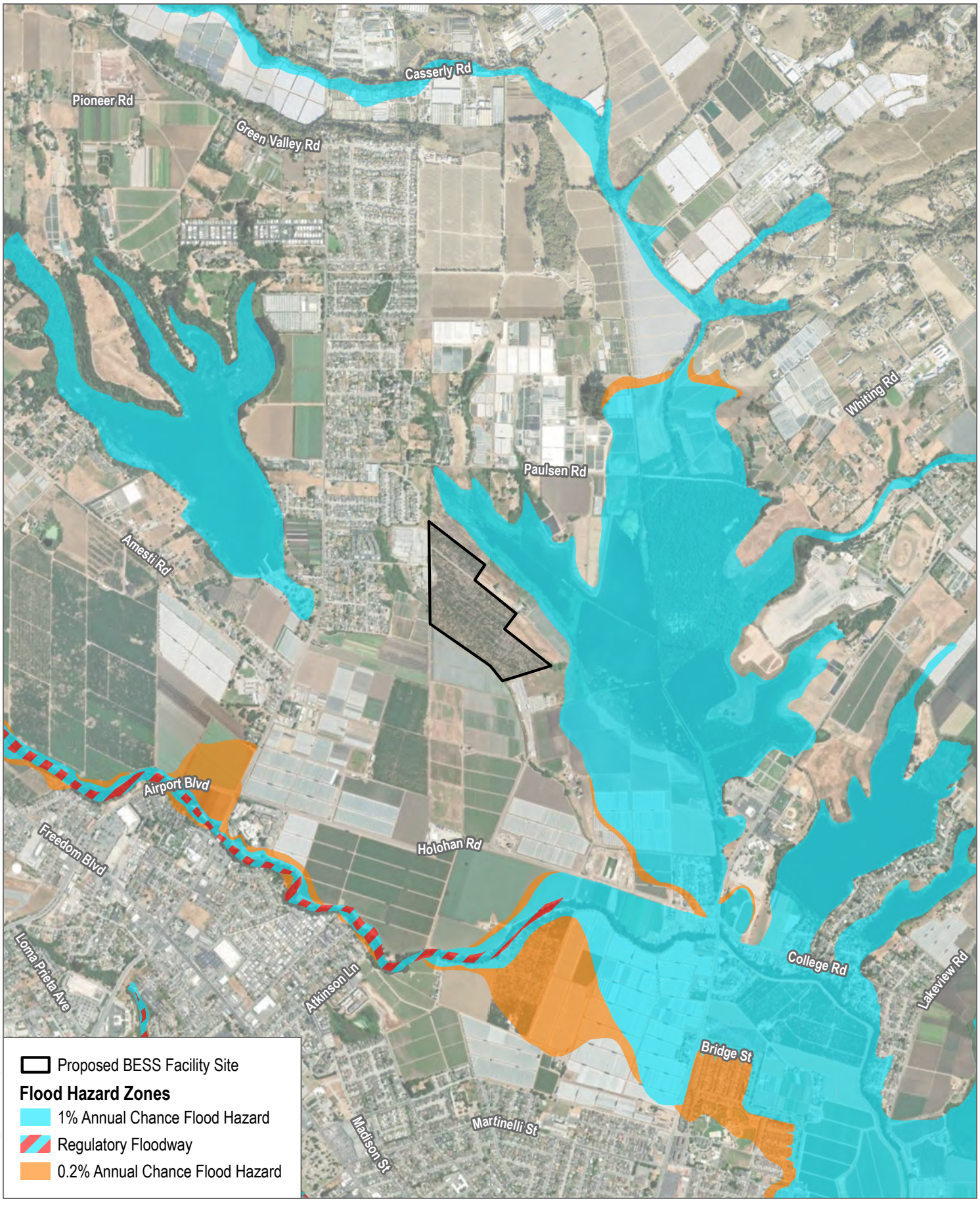

SOURCE: FEMA 2025; Maxar 2024; Open Street Map 2023

DUDEK

0 1,000 2,000 Feet

FIGURE 3.15-7

FEMA

Seahawk Battery Energy Storage System Project

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3.16 Wildfire

This section describes the potential effects that the construction, operation, and decommissioning of the Seahawk Battery Energy Storage System Project (project) may have on potential wildfire impacts. The project would consist of a 200-megawatt battery energy storage system (BESS) facility using lithium-iron phosphate batteries installed in racks inside of prefabricated energy storage containers. The project would include components such as an operations and maintenance building, an on-site collector substation, a fire protection system, a noise mitigation wall, and Supervisory Control and Data Acquisition monitoring. The project would interconnect from an on-site collector substation to the adjacent Pacific Gas & Electric Company (PG&E) Green Valley Substation via a 115-kilovolt generation interconnection (gen-tie) transmission line. The gen-tie line would be installed underground from the project substation to the Point of Change of Ownership at an overhead riser pole on a PG&E parcel, and an overhead gen-tie line would connect to the Point of Interconnection at the PG&E Green Valley Substation.

Per California Public Resources Code (PRC) Section 25545.19, the project site plan was discussed between the applicant, fire authorities, technical experts, and the project team prior to application submittal. On December 11, 2024, the applicant and members of the Watsonville Fire Department, North County Fire Department, and Pajaro Valley Fire District conducted a site visit to discuss project details, and later that evening held a public neighborhood meeting to answer questions. The applicant also worked with the Energy Storage Response Group to develop a presentation, which the Energy Storage Response Group presented in-person on May 6, 2025, to local first responders at the Watsonville government building. Representatives from the Pajaro Valley Fire District, the Watsonville Fire Department, and other local first responders also attended the presentation virtually. Most recently, the applicant held a virtual meeting on February 19, 2026, with Jed Wilson and Joe Paquin from the Pajaro Valley Fire District to discuss the project, and the applicant informed them of its intention to submit an Opt-In Certification Application to the California Energy Commission.

The information presented herein is based on a review of existing resources and applicable laws, regulations, guidelines, and standards. Publicly available sources were reviewed in the development of this section, including the California Department of Forestry and Fire Protection (CAL FIRE) Fire and Resource Assessment Program (FRAP) database (CAL FIRE 2025a); the CAL FIRE Office of the State Fire Marshal fire prevention program; the Santa Cruz County General Plan; the Santa Cruz County Fire Code; Santa Cruz County Code (SCCC) Chapter 7.92; Title 8, Chapter 9 of the Watsonville Municipal Code; the Santa Cruz County Local Hazard Mitigation Plan; applicable sections of the California Fire Code (CFC), as adopted by the Santa Cruz County Fire Department (SCCFD), including Chapters 12 and 49; National Fire Prevention Association (NFPA) Standards 51b, 70 (National Electrical Code), 855, 1141, and 1142 (2024); and Underwriters Laboratory (UL) Standard 9540.

This evaluation of wildfire includes the following elements:

- Section 3.16.1 describes the existing environment that could be affected, including vegetation and fuels, climate, topography, Fire Hazard Severity Zone (FHSZ) designation, fire history, and emergency response and fire protection.
- Section 3.16.2 identifies potential environmental impacts that may result from project construction, operation, maintenance, and decommissioning.
- Section 3.16.3 discusses potential cumulative effects.
- Section 3.16.4 identifies mitigation measures that would be considered during project construction, operation, maintenance, and decommissioning.

- Section 3.16.5 presents laws, ordinances, regulations, and standards (LORS) applicable to wildfire.
- Section 3.16.6 identifies regulatory agency contacts.
- Section 3.16.7 describes permits required for the project related to wildfire.
- Section 3.16.8 provides references used to develop this section.

A summary of the wildfire evaluation is provided in the table below.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
1) If located in or near SRAs or lands classified as VHFHSZs, substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
2) If located in or near SRAs or lands classified as VHFHSZs, 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?	☐	☐	☒	☐
3) If located in or near SRAs or lands classified as VHFHSZs, 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?	☐	☐	☒	☐
4) If located in or near SRAs or lands classified as VHFHSZs, 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?	☐	☐	☐	☒

3.16.1 Affected Environment

3.16.1.1 Regional

Wildfire is a seasonal threat in Santa Cruz County. It is particularly concerning in the Santa Cruz Mountains and in the wildland/urban interface (WUI), where urban development abuts or intermingles with wildland or vegetative fuels. Santa Cruz County and the nearby unincorporated communities near the project site contain several miles of WUI, where established development meets open space areas. The project site is in western Santa Cruz County, California, in an environment where the combination of terrain, vegetation, and weather permits the spread of wildfire when conditions are right. Fire environments are dynamic systems that encompass a range of

environmental factors and site characteristics. Fires can occur in any environment where conditions are conducive to ignition and fire spread. The three major components of the fire environment are topography, vegetation (fuels), and climate. The state of each component and its interactions with others determine the potential characteristics and behavior of a fire at any given moment. Understanding the existing wildland vegetation and urban fuel conditions on and adjacent to the project site is necessary to understand the potential for fire within and around the site. This section describes the fire environment at the project site and the surrounding area, including a summary of the fire history.

3.16.1.2 Project Site

The project site is on an approximately 47-acre agricultural site (Assessor's Parcel Number [APN] 051-101-77 and APN 051-101-78) in unincorporated Santa Cruz County, California. The project would be constructed on approximately 16 acres (site plan area, including setbacks and access roads) on the north-easterly portion of the property; a long-term land lease is proposed to accommodate development of the BESS. Development of the BESS facility would occur west of the existing State Route 152 transportation corridor and south of the unincorporated community of Interlaken. The project site is within the U.S. Geological Survey 7.5-minute Watsonville West Quadrangle, Township 11S, Range 2E, Sections 21 and 28.

The project site is on the coastal plain west of the Santa Cruz Mountains, in the Coast Ranges Geomorphic Province (CGS 2002; Harden 2004). The Coast Ranges are northwest-trending mountain ranges (2,000 to 4,000 feet, occasionally 6,000 feet above sea level) and valleys (CGS 2002). The project site is in the Pajaro Valley and in the Central Coast ecological subregion and the Central Western California ecological region (Jepson Flora Project n.d.). Elevation on the project site gently rises from west to east, ranging from approximately 40 to 80 feet above mean sea level (USGS 2024).

Topography and terrain influence fire behavior by affecting fire spread rates. Typically, in the absence of strong winds, rates of spread and fire intensity are higher on the upslope side of a fire's perimeter and lower on the downslope side (NWCG 2024). Flat terrain tends to have little effect on fire spread, resulting in fires that are driven by wind. The project site is on relatively level terrain and is surrounded by relatively level terrain. There are no narrow canyons, box canyons, chimneys, or other terrain features that would exacerbate a wildfire burning near the project site.

3.16.1.3 Vegetation

The project site and adjacent lands are used for fruit orchards and other agricultural uses that appear to be well-established. Surface vegetation consists mainly of annual weeds and non-native grasses. This surface vegetation appears to have been regularly cleared from the project site (e.g., raked or disced) from the start of the fire season (May) after the surface vegetation cures, so that surface vegetation is limited to the area within the dripline of the orchard trees.

3.16.1.4 Vegetation Dynamics

Variations in vegetative cover type and species composition have a direct effect on fire behavior. Some plant communities and their associated plant species exhibit increased flammability due to plant physiology (resin content), biological function (flowering, retention of dead plant material), physical structure (bark thickness, leaf size, branching patterns), and overall fuel loading. For example, non-native grass-dominated plant communities become seasonally prone to ignition and produce lower-intensity, higher-spread-rate fires. In comparison, chaparral

can produce higher heat intensity and higher flame lengths under strong, dry wind patterns, but does not typically ignite or spread as quickly as light, flashy grass fuels.

It is critical to consider the dynamic nature of vegetation communities. The risk of wildfire at the project site is highly dependent on vegetation conditions, including moisture content and the amount of cured/dead and live plant material. Wildfire risk is lowest during the period each year when vegetation moisture content is too high to sustain a fire. The period typically runs from October through May, when the area receives most of its precipitation and the surface vegetation is primarily live, green plant material. The risk of wildfire increases with the onset of a prolonged dry period during the summer and early fall when moisture content decreases and annual herbaceous vegetation cures.

The entire project site consists of agricultural land, except for the built structures. Additionally, much of the area immediately surrounding the project site is agricultural land. Vegetation that may be of concern would include the dense tree and shrub vegetation adjacent to College Lake, which is within 500 feet of the project site. This vegetation is also present approximately 500 feet west of the project site, in two patches north and south of Minto Road. North of Minto Road, this vegetated patch lies between the PG&E Green Valley Substation and a business center; south of Minto Road, it lies between agricultural areas and a neighborhood. With the right conditions to encourage fire behavior (i.e., wind and dry vegetation), vegetation around College Lake and off of Minto Road could pose a fire threat to the project site. Irrigated agricultural lands near the project site would not contribute to potential fire behavior because they are not easily ignitable if irrigated.

The project site and surrounding area generally lack the continuous areas of flammable vegetation that would make the site at high risk for a destructive wildfire. The vegetation present, which is primarily maintained fruit and nut tree orchards, does not support sufficient fuel loads to support the spread of high-intensity or rapidly spreading wildfire. There is potential for wildfire to spread in poorly maintained areas where annual weeds can develop, but these areas are confined by roads or other non-combustible surfaces, and by maintained agricultural areas. As a result, any wildfire that may occur in the project area is anticipated to be limited in its potential growth and intensity.

The project's development footprint would be cleared, graded, and covered in a noncombustible, compacted road base. The BESS facility site would be subject to regular disturbance in the form of vegetation maintenance in between and around the BESS containers and access roads, and would not be allowed to accumulate excessive biomass over time, which would result in reduced fire ignition, spread rates, and intensity.

The gen-tie line and associated right-of-way would include construction of a graded and compacted roadway, along with vegetation management where vegetation is cleared to maintain a safe distance between the lines and the surrounding vegetation. Within the right-of-way, vegetation management would include vertical and horizontal maintenance, as well as removal of dead and dying materials. The gen-tie line would be within an area of land called a "right-of-way," which is an area of land the applicant does not own but has been granted the right to use for installing, repairing, operating, and maintaining the transmission lines. Generally, vegetation management does not occur in the right-of-way; however, sometimes trees may be identified that have the potential to grow or fall into the lines.

3.16.1.5 Weather

The general climate within the Watsonville area makes it ideal for both human habitation and agriculture. Temperature extremes are rare and experienced for only short durations. Temperatures range from lows of 28°F to highs of 95°F. Typical temperatures range from 50 to 70°F, and the mild Mediterranean-type climate provides a long crop-growing period of approximately 237 days per year. Rainfall increases with distance inland from the

Monterey Bay. The average annual rainfall is 21 inches. Of all precipitation, 90% occurs November through April, with February being the wettest month. The project site experiences diurnal changes in the prevailing wind direction. Daytime prevailing winds are from the southwest (Monterey Bay), and nighttime prevailing winds are from the northeast, with an average wind speed of 8 miles per hour (City of Watsonville 2005).

The risk of significant wildfire exists in Santa Cruz County. Due to local topography, fuels (forest, chaparral, grasslands), and certain weather conditions, Santa Cruz County is prone to periodic large wildfire events. Due to the topography and the current land use of the project site, the aforementioned factors would be of more concern in areas designated as a FHSZ rather than the project site itself, which is further detailed in the next section.

3.16.1.6 Historical Wildland Fires and Ignitions

Fire history data provides valuable information regarding fire spread, fire frequency, ignition sources, and vegetation/fuel mosaics across a given landscape. One important use for this information is as a tool for pre-fire planning because fire history data can inform how to best protect lives, property, and ecosystems from wildfires. It is advantageous to know which areas may have burned recently and therefore may provide a tactical defense position, what type of fire burned on the site, and how a fire may spread.

Fire history in the area can be represented by the CAL FIRE FRAP database (CAL FIRE 2025a). FRAP summarizes fire perimeter data dating to the late 1800s, but it is incomplete because it only includes fires larger than 10 acres and has incomplete perimeter data, especially for the first half of the twentieth century (Syphard and Keeley 2016). 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 an increased probability of future wildfires.

According to available data from the CAL FIRE FRAP database,[1] there have been six fires within 5 miles of the project site. No fires have burned on the footprint of the BESS facility (CAL FIRE 2025a). The California Public Utilities Commission (CPUC) collects and publishes data on utility-caused fires. According to CPUC fire ignition data from 2014 through 2023, six utility fires have been recorded within Santa Cruz County. Three of these fires were within 5 miles of the project site. The closest utility fire was within the City of Watsonville, approximately 1.75 miles south of the site. The second closest utility fire was approximately 2.75 miles east of the project site, off of Carlton Road. The third utility fire was off of Buena Vista Drive in the Freedom neighborhood, approximately 2.5 miles southwest (CPUC n.d.). Utility-caused fires that were the result of bulk transmission equipment are recorded but not published; there may be other utility-caused fires in the project area. Figure 3.16-1, Fire History, shows the recorded fire perimeters from FRAP within 5 miles of the project site.

The Moss Landing site experienced one major battery fire in January 2025, a smaller follow-up fire in February 2025, earlier non-fire overheating incidents in 2021–2022, and a separate 2022 fire at a neighboring PG&E facility (Vistra Corp n.d.a). None of the recorded incidences at the Moss Landing Energy Storage Facility transitioned to a wildfire in the vegetation on adjacent lands.

The January 2025 fire at the Moss Landing Energy Storage Facility prompted the evacuation of 1,200 to 1,500 local residents. According to County of Monterey authorities, a Level 2 activation of Monterey County's Emergency Operations Center was enacted shortly after notification of the fire from the nearby North County Fire Protection

[1] Based on polygon GIS data from CAL FIRE's FRAP database, which includes data from CAL FIRE, U.S. Department of Agriculture Forest Service Region 5, Bureau of Land Management, National Park Service, Contract Counties, and other agencies. The data set is a comprehensive fire perimeter GIS layer for public and private lands throughout the state and covers fires 10 acres and greater from 1878 to 2023.

District (Energy Storage News 2025). According to the American Clean Power Association, the Moss Landing battery installation was housed inside a retrofitted 1950s-era power plant structure, in contrast to nearly all grid batteries installed in the past several years in modular, purpose-built outdoor containers, making Moss Landing "an anomaly among the industry" as "[l]ess than one percent of utility-scale energy storage installations are housed indoors" (Maisch 2025). According to the project owner, Vistra Energy, the fire was limited to the 300-megawatt battery installation within the indoor portion of the facility and did not spread to any of the other energy storage facilities or the natural gas plant located on site (Vistra Corp n.d.b). Phase 1 of the Moss Landing Energy Storage Facility project was announced in 2018 and operational by the end of 2020, before today's standards and requirements set by NFPA 855 were created and before the California Fire Code first incorporated NFPA 855 into the 2022 code cycle. NFPA 855 requires that batteries included in energy storage projects are listed to the safety specifications included in UL 9540 and undergo rigorous fire testing. This standard ensures that equipment incorporated into battery energy storage facilities are tested, certified, and safe for operation on the electric grid (Maisch 2025; WECC 2025). Specifically, the International Fire Code first added a section on large battery storage projects in 2018 (incorporated into the CFC in 2020), and NFPA's safety standard for stationary battery storage (NFPA 855) came out in late 2019 for the 2020 calendar year.

The Moss Landing Phase 1 facility also used nickel manganese cobalt chemistry batteries. While this chemistry was used in early storage installations, the industry later moved to lithium-iron phosphate cells, which are present today in more than 80% of utility-scale storage projects (Maisch 2025). Based on discussions with Original Equipment Manufacturers, the industry is trending toward lithium-iron phosphate batteries for future BESS deployments due to their affordability and superior thermal stability (WECC 2025).

3.16.1.7 Fire Hazard Severity Zones

The Office of the State Fire Marshal's Fire Hazard Severity Zone Maps Program includes map data documenting areas of significant fire hazards in the state (CAL FIRE 2025b). These maps categorize geographic areas of California into different FHSZs. The classifications are Moderate, High, and Very High FHSZs. CAL FIRE uses FHSZs to classify anticipated fire-related hazards for the entire state, and includes classifications for State Responsibility Areas (SRAs), Local Responsibility Areas (LRAs), and Federal Responsibility Areas. Fire hazard severity classifications consider vegetation, topography, weather, crown fire production, and ember production and movement.

The project site and the surrounding area are on LRA lands (CAL FIRE 2025b), where a local agency is primarily responsible for fire suppression. According to FHSZ maps, the project site and the surrounding area are within an LRA but are not within LRA FHSZ areas. The nearest FHSZ designation is an SRA Very High Fire Hazard Severity Zone (VHFHSZ), approximately 3 miles west, close to Corralitos Lagoon; SRA High FHSZ, approximately 1.90 miles northeast, near Pajaro Valley Memorial Park; and SRA Moderate FHSZ, 1.30 miles northeast, close to Rose Reservoir. As shown in Figure 4.17-1 of the Santa Cruz County Sustainability Update, fire hazards are generally most significant in the North Coast and Mountain regions of Santa Cruz County, with more moderate fire hazard areas in the Urban and South County regions (County of Santa Cruz 2022a). Figure 3.16-2, Fire Hazard Severity Zones, displays the FHSZs near the project site.

The CPUC has published High Fire-Threat District (HFTD) maps. The HFTD maps show areas where there is an increased risk (including likelihood and potential impacts on people and property) for utility-associated wildfires (CPUC 2025). The project site and the surrounding area are not within a Tier 2 (High) or Tier 3 (Extreme) HFTD. The nearest HFTD is 2.5 miles east of the project site in the foothills of the Santa Cruz Mountains (CPUC 2021).

3.16.1.8 Post-Fire Slope Instability and Drainage Pattern Changes

A wildfire may create a burned landscape that is more susceptible to debris flows. Changes to vegetation and soil due to a wildfire can increase the probability of runoff and erosion in a watershed during a rainfall event, and thus the likelihood of a debris flow triggered by a rainfall event. Debris flows may damage natural resources, property, and infrastructure, and may lead to injuries and fatalities. The community's downslope of burned terrain may be vulnerable to damage from debris flows, such as what occurred in Montecito, California, in 2018 (Congressional Research Service 2023).

The U.S. Geological Survey's Post-Wildfire Debris Flow Hazard Assessment uses geospatial data related to basin morphometry, burn severity, soil properties, and rainfall characteristics to estimate the probability and volume of debris flows that may occur in response to a design storm (USGS 2025a). The U.S. Geological Survey publishes the results of this assessment online on a map viewer that shows recent burn perimeters, the hazard, and the likelihood of a debris flow within the fire perimeter. No data is available for the project site, and no fires have burned close to the project site to cause any likelihood of post-fire debris flow or combined hazard (USGS 2025b).

3.16.1.9 Emergency Response and Fire Protection

The project site is on LRA lands, where the local agency is responsible for fire suppression and emergency response. The Pajaro Valley Fire Protection District (PVFPD) is the primary provider of emergency services to the project site. However, PVFPD's 2024–2025 Engineer's Report notes that the Watsonville Contract Boundary extends into the PVFPD service boundary, and would also serve the project site (PVFPD 2021, 2023). The nearest fire station is Watsonville Fire Station 2, approximately 2.6 miles from the project site and next to the Watsonville Municipal Airport. The next closest fire responders would come from Pajaro Valley Fire Protection District Station 45, approximately 4.2 miles from the project site and northeast toward the mountains. These existing stations were analyzed herein due to their proximity to the project site.

Table 3.16-1 provides a summary of the fire and medical delivery system for the closest responding stations (listed based on distance to the project site). Travel distances were derived from Google road data, and travel times were calculated using response speeds of 35 miles per hour (mph), consistent with nationally recognized NFPA 1710 and the Insurance Services Office (ISO) Public Protection Classification Program's Response Time Standard formula (Time=0.65 + 1.7(Distance)). The ISO response travel time formula discounts speed for intersections and vehicle deceleration, and does not include turnout time for responders.

Table 3.16-1. Closest Responding Stations Summary

Station No.	Location	Travel Distance to BESS Entrance (miles)[1]	Maximum Travel Distance to PG&E Green Valley Substation (miles)[2]	Travel Time to BESS Facility Entrance[3]
Watsonville Fire Department Station 2	370 Airport Boulevard, Watsonville, California 95076	2.2	2.2	5 minutes and 4 seconds
Pajaro Valley Fire Protection District Station 45	562 Casserly Road, Watsonville, California 95076	3.3	3.2	7 minutes and 47 seconds

Table 3.16-1. Closest Responding Stations Summary

Station No.	Location	Travel Distance to BESS Entrance (miles)[1]	Maximum Travel Distance to PG&E Green Valley Substation (miles)[2]	Travel Time to BESS Facility Entrance[3]
Watsonville Fire Department Station 1	115 2nd Street, Watsonville, California 95076	3.8	3.8	8 minutes and 18 seconds

Notes: BESS = battery energy storage system; PG&E = Pacific Gas & Electric.
Sources: PVFPD 2023; Santa Cruz LAFCO 2021; Watsonville Fire Station 2024.
1 Distance measured to the BESS facility entrance off Minto Road.
2 Distance measured to the PG&E Green Valley Substation entrance off Minto Road.
3 Assumes travel at 35 miles per hour (mph) and does not include donning turnout gear or fire dispatch time. Actual travel speeds are likely to be closer to 45 mph speed limits.

Within the area's emergency services system, fire and emergency medical services are also provided by other fire stations within the PVFPD service area and the City of Watsonville. Generally, each agency is responsible for structural fire protection and wildland fire protection within its area of responsibility. However, mutual-aid agreements enable non-lead fire agencies to respond to fire emergencies outside of their district boundaries. In the project area, fire agencies cooperate under existing agreements between fire districts/departments, the Emergency Medical Services Integration Authority, and the Fire Chiefs Association. Additional agreements include the California Fire Master Mutual Aid Agreement, California Master Cooperative Wildland Fire Management and Stafford Act Response Agreement, California Fire Assistance Agreement, and PRC Section 4129 (County of Santa Cruz 2014).

Although additional resources outside of the PVFPD service area could respond to an emergency at the project via existing mutual aid agreements, none are closer than the PVFPD and City of Watsonville fire stations listed in Table 3.16-1. Given that the PVFPD and City of Watsonville fire stations listed in Table 3.16-1 are closer than any mutual-aid resources, a response aside from the nearest fire stations would only be anticipated in the unlikely event of a large wildfire, conflagration, or similarly substantial event that necessitates a sizable emergency response.

The SCCFD investigated response times, mutual aid, and consolidation, and documented performance measures for all departments. The SCCFD Long-Range Master Plan provides turnout time and travel times for fire department units in accordance with NFPA 1710 and 1720. According to the SCCFD Long-Range Master Plan, after processing an emergency call, turnout times are 60 to 80 seconds 90% of the time, and travel time is approximately 240 seconds 90% of the time. The total time for the arrival of the first unit is approximately 455 to 475 seconds 90% of the time (SCCFD 2023). The County of Santa Cruz report on response times, mutual aid, and consolidation confirms that the three full-time fire districts met the response time goals on 90% of structure fire calls (County of Santa Cruz 2014). The response time standards in NFPA 1720 are summarized in Table 3.16-2.

Table 3.16-2. NFPA 1720 Staffing and Response Time Standards

Land Classification	Population Density	Response Time Goal	Staffing
Urban	>1,000 people per square mile	≤9 minutes	≥15 staff
Suburban	500–1,000 people per square mile	≤10 minutes	≥10 staff
Rural	<500 people per square mile	≤14 minutes	≥6 staff

Table 3.16-2. NFPA 1720 Staffing and Response Time Standards

Land Classification	Population Density	Response Time Goal	Staffing
Remote	Travel distance ≥8 mile	Directly dependent on travel distance	≥4 staff

Source: NFPA 2020.
Note: NFPA = National Fire Protection Association.

The SCCFD Long-Range Master Plan notes that call processing or fire department notification is approximately 60 seconds 90% of the time (SCCFD 2023), in accordance with the NFAPA 1225 standard. NFPA 1710 estimates a turnout time of 80 seconds for fire incidents, and NFPA 1720 estimates a similar turnout time of 90 seconds for fire stations. It is assumed that the project would be classified as "Rural," with a 14-minute first-in fire engine response time. Watsonville Fire Department Station 2 would provide an initial response as the closest existing fire station. Total response time, including call and turnout time, from Watsonville Fire Department Station 2 is calculated at roughly 6 minutes and 44 seconds to the entrance of the BESS facility. As indicated in Table 3.16-1, the response from the listed fire stations to the project site with call turnout time conforms to the response time standard of 12 minutes or less for rural areas. All response calculations are based on an average response speed of 35 mph, consistent with nationally recognized NFPA 1710.

3.16.2 Impact Analysis

The following subsections cover potential wildfire-related impacts associated with construction and operation of the proposed project.

3.16.2.1 Methodology

To identify and assess potential impacts related to wildfire, publicly available information from CAL FIRE and the County of Santa Cruz (County) was reviewed, in addition to information provided by the applicant.

3.16.2.2 Impact Evaluation Criteria

The potential for impacts related to wildfire was evaluated using the criteria described in Appendix G of the California Environmental Quality Act Guidelines (14 CCR 15000 et seq.). A project could have a significant environmental impact in terms of wildfire if it is located in or near SRAs or lands classified as a VHFHSZ and would:

- Substantially impair an adopted emergency response plan or emergency evacuation plan.
- 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.
- 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.
- 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.

3.16.2.3 California Environmental Quality Act Appendix G Assessment Criteria

Criterion 3.16-1 If located in or near SRAs or lands classified as VHFHSZs, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact. The project site is not within an SRA or on lands classified as a VHFHSZ. The County has adopted a county-wide emergency operations plan, the Santa Cruz County Operational Area Emergency Operations Plan (County of Santa Cruz 2024), but does not have an adopted emergency evacuation plan. Although wildfire is identified as a potential hazard, the Emergency Operations Plan does not identify specific wildfire hazards associated with BESS facilities or lands in predominantly agricultural areas. The project is required to meet state and local fire code requirements for new facilities and BESSs, including providing access and an adequate water supply throughout the facility. These fire protection features would be maintained throughout the construction, operation, and decommissioning phases. The limited size of the project's operational workforce would not generate significant traffic volumes during an emergency evacuation scenario that could complicate area-wide emergency evacuation efforts. Driveways built to connect to existing local roads for direct site access would not affect designated emergency evacuation routes, and the driveways would not conflict with potential evacuation routes for surrounding land uses, and **no impact** would occur.

Criterion 3.16-2 If located in or near SRAs or lands classified as VHFHSZs, would the project, 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?

Less than Significant. The project site is not within an SRA or on lands classified as a VHFHSZ. The project site and the surrounding area contain generally level terrain, and the surrounding lands are predominantly used for agricultural purposes that include regular irrigation and maintenance of weeds and undesirable vegetation. Due to these factors, the project area is generally at a low risk for wildfire, as evidenced by the absence of recorded wildfires near the project site (CAL FIRE 2025a). The project, including its construction, operation, and decommissioning phases, would not substantially alter this low risk. Given the fire protection systems of BESS enclosures, the UL 9540A testing to be performed, and the vegetation management and setbacks to occur, the project would not facilitate wildfire spread, and is anticipated to reduce projected flame lengths through vegetation management to levels that would be manageable by firefighting resources.

The highest potential risk of a wildfire originating within the project site would occur during the construction and demolition phases; however, through adherence to applicable provisions of Chapter 33, Fire Safety During Construction and Demolition, of the most recent edition of the CFC, the potential risk would be **less than significant**.

Construction and Decommissioning

Less than Significant. The construction and decommissioning phases of the proposed project are anticipated to potentially create the most significant fire hazard due to the potential for sparks and the increased human 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, craftsworkers, supervisory personnel, support personnel, and construction management personnel) would range from approximately 50 to 250 workers, depending on the phase of construction. Construction and

decommissioning activities would introduce potential ignition sources to the project site, including the use of heavy machinery and the potential for sparks during welding activities or other hot work. Construction best practices would be implemented to manage risk. In addition, the project would be required to comply with County, state, and SCCFD requirements for construction activities, including fire safety practices, to reduce the possibility of fires during construction activities. Additionally, vegetation management would be implemented at the start of and throughout all phases of construction, and combustible materials would not be brought on site until site improvements (e.g., utilities, access roads, fire hydrants, vegetation management) have been implemented. In addition to the installation of the above fire prevention features, the project would implement construction fire safety and fire prevention measures in accordance with CFC Chapter 33. These include providing fire prevention equipment on site (e.g., fire extinguishers) throughout all phases of construction and decommissioning, and following the work practices listed in CFC Chapter 33 for hazardous activities, such as hot work and fueling.

Provided the above site improvements and fire prevention features required by CFC Chapters 5 and 33 are appropriately implemented and approved by the SCCFD, construction and decommissioning activities are not anticipated to exacerbate wildfire risk such that project workers would be exposed to the uncontrolled spread of a wildfire or pollutant concentrations from a wildfire. Therefore, construction and decommissioning impacts would be less than significant.

Operation

Less than Significant**.** The proposed BESS facility would include installation of up to 266 BESS enclosures plus supporting medium-voltage skids and an on-site substation. The project is not in an area considered a VHFHSZ or within an FHSZ in the SRA (see Figure 3.16-2). The project site is currently used for agricultural purposes and contains an apple orchard. Orchard trees do not present a wildfire risk due to their low fuel loads and the limited amount of ignitable material. Surface vegetation, which consists of annual grasses and herbaceous plants, could serve as potential fuel sources. Existing potential ignition sources near the project site include the vehicles that travel along Minto Road, agricultural operations associated with adjacent orchards, electrical equipment at the Green Valley Substation, and arson-related ignitions. Development of the proposed project would introduce new potential sources of ignition to the project site, including the BESS modules, energized substation equipment, the gen-tie line, increased human activity on the project site, and additional vehicles traveling on internal and external roads. The project would be required to design, construct, and maintain structures, roadways, and facilities in compliance with applicable local, regional, state, and federal requirements (see Section 3.16.5, Laws, Ordinances, Regulations, and Standards) related to fire safety, emergency access, and evacuation, as well as building materials, setbacks, and defensible space requirements for development in fire hazard areas. The local, state, and federal rules, regulations, and policies in Section 3.16.5 set minimum standards for development strategies, building materials and systems, and fire-prevention strategies for development in fire-hazard areas to reduce the risk of wildfire damage and losses.

Wildland fire risk in the vicinity of the project site was reviewed, and it was determined that wildfires, as shown in Figure 3.16-1, have occurred in the general vicinity of the project site (within 5 miles). However, those fires have never occurred within the project site or on lands similar to the project site. Wildfire in the general vicinity predominantly occurs on the slopes and ridgelines of the Santa Cruz Mountains east of the project site. The fuels that carried these fires (Figure 3.16-1) are different than what is on the project site. Leaf litter and low brush are the primary carriers of fire spread in the areas where fires have occurred, and annual grass and herbaceous plants occur around the project site.

Slope

The project site is currently agricultural and is on flat land (USGS 2024). Topography and terrain influence fire risk by affecting fire spread rates. Typically, steep terrain results in faster fire spread upslope and slower fire spread downslope in the absence of wind. Flat terrain tends to have little effect on fire spread, resulting in fires that are driven by wind. There are no narrow canyons, box canyons, chimneys, or other terrain features that would exacerbate a wildfire burning near the project site. Additionally, extreme fire behavior driven by long, steep hillsides is not anticipated on this site. The proposed project would not create conditions that would result in steeper slopes or topographic features that would increase fire behavior. Project equipment and facilities would be set back from adjacent slopes and would not be at an increased risk of direct flame exposure due to fire spreading upslope. The project would not exacerbate wildfire risk related to slope.

Prevailing Winds

The prevailing wind pattern is from the southwest (onshore), but the presence of the Pacific Ocean causes a diurnal wind pattern known as the land/sea breeze system. During the day, winds are generally from the southwest (sea), and at night, winds are from the northeast (land). Wind speeds average approximately in the 1.3 to 8 mph throughout the year. Maximum wind gusts tend to come from the northeast direction and range similarly to the average wind speeds (WRCC 2026). As noted above, the project site is on a relatively level site. There are no terrain features, such as canyons, steep slopes, or saddles, that might funnel or strengthen prevailing winds.

Vegetation Management and Setbacks

The majority of the site is covered by an apple orchard composed of evenly spaced fruit trees, with a continuous layer of annual grasses and herbaceous plants on the ground surface. Based on historical images of the project site, the amount of vegetation on the project site and the surrounding orchards varies based on the time of year and the intensity of vegetation management performed by the land managers. In the spring, the overall volume of surface vegetation is low and increases until the vegetation matures in mid-summer. In actively maintained orchards like the one on the project site, the surface vegetation is cut or otherwise treated to remove excess vegetation. The density and size of the orchard trees are relatively static, with minor variation depending on the development of new trees and the removal of dead or dying trees (Google Earth 2026). Generally, the vegetation present on the project site and adjacent lands does not contain the volumes or arrangements that would exacerbate wildfires. Vegetation near the Green Valley Substation and the transmission poles, which are close to areas with tree cover, would follow applicable vegetation clearance mandates such as CPUC General Order 95, Rule 35, and PRC Sections 4292 and 4293 (see Section 3.16.5 for additional information about vegetation clearance).

Although development of a new BESS facility and the associated gen-tie line would introduce new potential ignition sources to the project site, the vegetation conditions on site do not represent a large volume of readily ignitable vegetation. Where needed, such as in the area near the Green Valley Substation and below the overhead portion of the gen-tie line, required vegetation clearance would be conducted prior to development of the project. Development of the project site would convert a portion of the site that is currently covered by the orchard into non-combustible surfaces (e.g., roads, gravel, equipment pads). Project components, including the BESS enclosures, would meet the applicable portions of the CFC regarding fire protection features and BESSs, which include elements of NFPA 855 and the applicable CPUC

General Order (GO) Rules (95 and 167-C). These codes and standards include provisions for vegetation management, setbacks from combustible vegetation, and clearances between equipment and project property lines and public streets.

Per the vegetation management requirements established by CFC Section 1207.5.7, "areas within 10 feet (3,048 m) on each side of outdoor ESS [energy storage systems] shall be cleared of combustible vegetation and other combustible growth." The CFC does permit "single specimens of trees, shrubbery or cultivated ground cover such as green grass, ivy, succulents or similar plants used as ground cover … provided that they do not form a means of readily transmitting fire." The project would incorporate landscaping that meets the above requirements to screen the BESS equipment. Between this landscaping and the property lines there would be a 100-foot setback where the vegetation would be maintained in a condition that does not readily transmit fire (e.g., mowed grass).

Additionally, CFC Section 1207.8.3 requires that the BESS be separated by a minimum of 10 feet from lot lines, public ways, buildings, stored combustible materials, hazardous materials, high-piled stock, and other exposure hazards. CFC Section 1207.8.1 requires remote outdoor installations to be located more than 100 feet from the hazards previously mentioned. Similarly, CFC Section 1207.5.8 requires BESSs to be separated from any means of egress by at least 10 feet, but this can be reduced if large-scale fire testing in accordance with UL 9540A is completed. The BESS technology used would meet relevant fire safety standards, including NFPA 855 and UL 9540, and have undergone UL 9540A testing, demonstrating that a fire involving one BESS would not propagate to an adjacent BESS.

As noted previously, vegetation management would occur around power poles and power lines. PRC Sections 4292 and 4293 require that a minimum of 10 feet of vegetation clearance be maintained around every electrical pole or tower, and that the appropriate clearance be maintained around electrical transmission and distribution lines for the operating voltage. Given the proposed gen-tie line voltage, there would be at least 10 feet of clearance from any vegetation around the lines. Given the low loads of vegetation and lack of sizable trees in the area of the gen-tie line, it is not anticipated that there would be any vegetation clearance issues related to the transmission poles for the underground portion of the gen-tie route. However, with regard to the PG&E transmission poles for the overhead portion of the gen-tie route, vegetation clearance may need to be performed and maintained for transmission poles 1, 2, and 3.

Battery Energy Storage System Fire Protection Systems

Exact specifications for the fire protection system and related technology-specific protection incorporated into the BESS enclosures would not be known until the BESS technology and selection have been finalized, but references to relevant CFC sections provide insight into the minimum requirements that would be met. In accordance with CFC Section 1207.5.5, a fire protection system that meets CFC requirements and is appropriate for the selected battery chemistry would be provided. Additional measures provided, as required in CFC Section 1207.6, would include exhaust ventilation with a gas detection system to maintain the concentration of flammable gas below 25% of the lower flammable limit; spill control and neutralization; explosion control; safety caps; and an approved method to prevent, detect, and minimize the impact of thermal runaway. The required combination of these features varies by battery technology, as shown in CFC Table 1207.7. However, any system that adheres to these requirements would reduce the risk of thermal runaway and would meet UL 9540 requirements, including being tested to the UL 9540A standard and demonstrating that fire within one BESS unit would not propagate to adjacent units. The UL 9540A test results for the currently proposed BESS is included as Appendix 3.16A.

Operational Summary

Given the project area's fire history and the primarily agricultural and residential land uses, it is anticipated that wildfires would not frequently occur. Those that do occur are anticipated to be small and limited to pockets or islands of combustible vegetation, such as a vacant parcel or fallowed agricultural field, that is surrounded by non-combustible roads or actively managed agricultural properties of limited combustibility. The terrain, vegetation, and weather conditions in the project area make catastrophic wildfires unlikely, even considering the anticipated increase in wildfire probability predicted in the County's Climate Action and Adaptation Plan (County of Santa Cruz 2022a).

The proposed project would introduce potential ignition sources to the site; however, all new BESS components would be constructed to the County Fire Code, NFPA 855, and current CFC standards. The project would be subject to additional requirements, including implementation of the construction fire prevention measures outlined in CFC Chapter 33. Additionally, vegetation management meeting the clearance requirements described in CFC Section 1207 would be implemented at the start of and throughout all phases of construction, and combustible materials would not be brought on site until site improvements (e.g., utilities, access roads, fire hydrants, vegetation management) have been implemented. Construction materials and BESS enclosures would be staged during construction on a cleared and leveled laydown yard. Finally, the BESS equipment during construction and operation would be separated from property lines by at least a 100-foot setback.

During operations, the BESS enclosures would be continuously monitored by a battery management system. The battery management system would automatically monitor the conditions within the BESS enclosures and communicate this information to the central monitoring station. The battery management system would alert the central station of abnormal conditions and shut off the unit should it be necessary. A thermal runaway event is unlikely, but should it occur, the BESS enclosures would include fire protection systems meeting CFC Chapter 12 and NFPA 855 requirements, including explosion prevention, fire detection and suppression, and ventilation, that would act to minimize the spread of a thermal runaway event or fire within the BESS enclosure. Further, the selected BESS technology would have been tested to the UL 9540A standard and demonstrated that the BESS enclosure construction and protection systems make fire spread to adjacent BESS enclosures unlikely. These fire prevention features, combined with the planned vegetation management and setbacks, would result in a low likelihood of a fire spreading from a BESS enclosure to off-site areas. Additional details are provided in Appendix 3.16B, Emergency Response Plan, which has been developed to support local emergency responders with critical safety and emergency response information related to the CATL EnerC+ lithium-ion BESS. Appendix 3.16C, Hazards Mitigation Analysis, also includes site-specific fire protection systems (Appendix 3.16C and Appendix 3.16D).

These fire protection features would form a redundant system of protection to minimize the likelihood of exposing workers, the nearby population, and structures to the uncontrolled spread of a wildfire. As such, accidental fires within the maintained landscape or structures on the project site would have limited ability to spread. Although these standards provide a high level of protection for the proposed project, there is no guarantee that compliance with these standards would prevent damage or destruction of BESS components by fire in all cases.

It is unlikely that off-site fires would impact the project site, given that the surrounding properties are actively managed agricultural lands with minimal buildup of combustible vegetation and broken up with service roads. Project components would primarily be constructed of non-combustible materials, including

metal, ceramic, and glass, so would be unlikely to be ignited by a nearby wildfire or embers carried from a wildfire in the area.

The proposed project would not exacerbate wildfire risks due to slope, prevailing winds, or other factors, and thereby expose project workers to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Impacts would be **less than significant.**

Criterion 3.16-3 If located in or near SRAs or lands classified as VHFHSZs, would the project 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?

Less than Significant. The project would involve development of agricultural land with up to 266 BESS enclosures, medium-voltage skids, an on-site substation, and a gen-tie line connecting the BESS facility to a nearby substation. The project would include installation and maintenance of supporting infrastructure, including driveways, roadways, and a perimeter wall, which would require ground disturbance and the use of heavy machinery associated with trenching, grading, site work, and other construction and maintenance activities. Thus, installation of related infrastructure could potentially result in temporary or ongoing impacts to the environment. However, the associated infrastructure for the project, such as roads, fuel modification zones, and water sources, would reduce the fire risk in the immediate area by reducing the volume of flammable vegetation and providing better access to emergency responders to suppress fires near the project site. The BESS facility would sit on a large, level pad composed of a noncombustible surface. Ignition events originating within the facility would lack the vegetation to sustain a fire. The gen-tie line connecting the facility to the nearby substation would be short, and only a portion of this would extend over vegetation that can sustain a fire. Additionally, the project is not on SRA lands nor on lands classified as a VHFHSZ. Development of the project, including the associated infrastructure, would result in a reduced volume of flammable vegetation and better access for emergency responders, and would not exacerbate fire risk.

Battery Energy Storage System

Although development of a BESS and the associated loop-in transmission line would introduce new potential ignition sources to the project site, the site would be largely converted from vegetation to BESS enclosures and associated components on graded and maintained areas. The proposed project would be developed according to all existing building codes and fire codes, as indicated in SCCC Chapter 7.92, which adopts the CFC, including Section 1207, Electrical Energy Storage Systems, and includes information for clearances and vegetation control. These codes include provisions for fuel modification and defensible space for fire prevention and safety. The BESS cabinets would contain fire prevention and abatement equipment. Management of these cabinets in a thermal incident are addressed in detail in the Emergency Response Plan prepared for the project (Appendix 3.16B).

Vegetation Management

Vegetation management and defensible space for the proposed project would be consistent with local and state regulations. This surpasses the minimum of 10 feet around BESS enclosures stated in CFC Section 1207.5.7. Additionally, as required by PRC Sections 4292 and 4293, a minimum of 10 feet of vegetation clearance would be provided around all power poles/towers, as well as the power lines associated with the proposed project and the associated gen-tie line. During the construction phase, the project would install a

laydown yard cleared of combustible vegetation for staging and storage of construction materials and the BESS enclosures. This laydown yard would be sufficiently large to contain the project equipment plus a suitable buffer (at least 10 feet wide) between the equipment and the edge of the laydown yard. Additionally, the project would complete planned vegetation management activities, such as mowing or discing annual vegetation around the project footprint, before combustible materials are delivered.

Adequate vegetation management must be performed before bringing any combustible materials onto the project site, and vegetation management activities would occur prior to the start of construction and throughout the life of the project. Consequently, the associated vegetation management activities would not exacerbate fire risk, provided that fuel modification and other vegetation management activities are implemented and enforced according to County and state requirements. The proposed vegetation management activities would reduce the fire risk by thinning and removing combustible vegetation.

Roads

The project would involve construction of internal access roads within the BESS facility and, if needed, an access road to access the gen-tie line route; otherwise, gen-tie line access would be via the Minto Road right-of-way. There would also be an internal circulation network with an unobstructed width of 20 feet. A secondary emergency access road would be provided to the site via a 20-foot-wide gravel, all-weather access road. Three options are being considered for the secondary emergency access road, which would extend the on-site access to the south, along the project's south/southeastern boundaries. Options 1 and 2 would go through a County-owned property (APN 051-101-59) to the south along two different alignments to connect to Grimmer Road. Option 1 would extend through undeveloped land and a parking area to connect to Grimmer Road that serves the County's parcel. Option 2 would extend from the project property through an existing parking area on the County's parcel to extend to Grimmer Road. Option 3 would extend southwest within APN 051-101-78, cross into the southern adjoining parcel (APN 051-101-53), continue southeast before turning west, then continue southeast and terminate where the Grimmer Road public right-of-way starts.

Routine maintenance and scheduled operation of the BESS would require up to eight workers in a light utility truck to visit the facility on a weekly basis. Typically, one major maintenance inspection would occur annually, requiring up to 20 workers for approximately 1 week. In addition, up to six workers would visit the site every 2 to 3 years to add or connect additional batteries to the facility using a crane and a forklift within the proposed facility boundary. Assuming a maximum of four daily trips per employee, the project could generate 25 to 80 daily trips. The added human activity would introduce new potential ignition sources to the project site. However, vegetation would be removed where gravel roads would be constructed and where fill would be placed from grading operations. Construction of project roadways and connections to existing roadways would provide increased accessibility for emergency services to the project site. Further, site access, including road widths and connectivity, would comply with the County's development review process, including review for compliance with the Santa Cruz County Fire Code. As required under the Santa Cruz County Fire Code, access roads and driveways would have an unobstructed vertical clearance of 15 feet above the roadways. All construction-related vehicles would have equipment capable of suppressing construction-related ignitions. The project owners would be responsible for long-term funding and maintenance of private roads and fire protection systems. Therefore, installing and maintaining site access roads in accordance with all relevant development codes would not exacerbate wildfire risk.

Utilities

The project would provide on-site water for firefighting purposes by connecting to the water main that serves Minto Road and would be designed to meet the CFC requirements for fire flow rates for providing a water supply for firefighting purposes. This water supply is intended to provide a readily available source of water for emergency responders to extinguish fires in the vegetation surrounding the BESS facility or to extinguish a fire in ancillary equipment or vehicles. As identified in the Emergency Response Plan prepared for the project, on-site water for firefighting is not to be used to extinguish a fire in a BESS container or in energized equipment (Appendix 3.16C). During construction and decommissioning of the project, untreated water would be required for common construction-related purposes, and restroom facilities would be portable units, serviced by licensed providers. Water and sewage from the restroom facilities would be stored in on-site tanks and serviced by trucks. Drinking water would be provided via portable water coolers.

There is an overhead line connecting to the PG&E Green Valley Substation, as shown in Figure 2-1, Project Site Plan. This overhead line goes over the road and bare ground, and has a short section that crosses over vegetation immediately west of the substation. However, this risk is limited because the overhead line is mostly over non-combustible surfaces. Additionally, vegetation management would be performed around all power poles/towers and power lines. Therefore, utilities associated with the proposed project would not exacerbate fire risk.

Summary

Installation and maintenance of project roads, service utilities, fuel modification, and other associated infrastructure would not exacerbate wildfire risks, provided that the appropriate fire prevention, access, and vegetation management activities are implemented as required by the PVFPD, SCCC, and state rules and regulations. Given that the activities involved with installation and maintenance of associated infrastructure would require ground disturbance and the use of heavy machinery associated with trenching, grading, site work, and other construction and maintenance activities, installation of related infrastructure could potentially result in temporary or ongoing impacts to the environment. However, installation and maintenance of roads, utilities, and vegetation management activities are part of the proposed project analyzed herein. As such, any potential temporary or ongoing environmental impacts related to these components have been accounted for and analyzed as part of the impact assessment conducted for the entirety of the project. Additionally, the proposed project would be required to comply with all regulatory requirements. No adverse physical effects beyond those already discussed in this Opt-In Application would occur as a result of implementing the project's associated infrastructure. Therefore, installation and maintenance of associated infrastructure would not exacerbate wildfire risk or result in impacts to the environment beyond those already disclosed, and impacts would be **less than significant.**

Criterion 3.16-4 If located in or near SRAs or lands classified as VHFHSZs, would the project 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?

No Impact. Vegetation plays a vital role in maintaining existing drainage patterns and the stability of soils. Plant roots stabilize the soil, and leaves, stems, and branches intercept and slow water, allowing it to percolate into the soil more effectively. If a fire were to denude the project site of surface vegetation, it would reduce the ability of the soil surface to absorb rainwater, and could allow for increased runoff that may include large amounts of debris or mudflows. If hydrophobic conditions exist post-fire (i.e., soil that

repels water instead of absorbing it), the rate of surface water runoff would be increased because water percolation into the soil would be reduced. The potential for surface runoff and debris flows, therefore, increases for areas recently burned by large wildfires (Moench and Fusaro 2012). As previously discussed and shown in Figure 3.16-1, no fires have burned on the project site in the recent past. Six wildfires have burned within a 5-mile radius of the project site, but these wildfires are not near the project site and are not in terrain or vegetation conditions similar to the project site. Typical annual vegetation management, including removal and thinning of vegetation around the project site, would not include soil excavation. These techniques would not denude the project site of vegetation, and root systems of the annual grasses and landscaping would remain intact to assist in the stabilization of the soil after mowing and potentially post-fire. Further, short grasses, like the grass that would remain after mowing, do not support high-intensity fire, so there is a low likelihood of hydrophobic soils developing post-fire.

The Santa Cruz Mountain range, which is approximately 2 miles from the project site, exhibits topographical diversity ranging from relatively flat to moderately steep lands. However, the distance of the project site to the mountain range is enough not to affect the project site's own topography. The project site is flat, with only a minor change in elevation throughout. Elevation across the project site ranges from approximately 40 feet to 80 feet above mean sea level (USGS 2024). The project site does not contain any terrain features that would amplify fire spread rates or intensity, such as narrow canyons.

Additionally, the Post-Wildfire Debris Flow Hazard Assessment Collection uses geospatial data related to basin morphometry, burn severity, soil properties, and rainfall characteristics to estimate the probability and volume of debris flows that may occur in response to a design storm (USGS 2025a). The U.S. Geological Survey publishes the results of this assessment online on a map viewer that shows recent burn perimeters and the hazard and the likelihood of a debris flow within the fire perimeter. No data are available for the project site, and no fires have burned close to the project site to remark on any likelihood of post-fire debris flow or combined hazard (USGS 2025b). In addition, the drainage pattern on the project site has not been altered due to a fire event and generally drains toward Paulsen Road. No wildfires have burned on the project site in the recent past. Further, the project site is not on SRA lands or on lands classified as a High FHSZ.

In summary, there is not a significant risk of landslides or flooding in the area of the proposed project. Therefore, with adherence to regulatory requirements and applicable design features, the project would not expose people or structures to downslope or downstream flooding or landslides as a result of runoff, post-fire slope instability, or drainage changes, and **no impact** would occur.

3.16.3 Cumulative Effects

Wildfires are not cumulative in the same way that traffic or pollution is, where each contribution provides a direct additive effect. For a wildfire to occur, there must be vegetation, terrain, and weather conditions that are conducive to its spread. This consists of a consistent fuel bed of low enough fuel moisture driven by dry, warm, and possibly windy weather. Even under such conditions, an ignition must occur to start the fire. This is not to say that there are never cumulative effects related to wildfire from projects. When there are multiple ignitions, fire suppression resources are spread thin, and each consecutive ignition, when co-occurring, would have fewer resources available to contain and extinguish it. The most common examples of this would be natural occurrences, such as dry lightning storms where many lightning strikes start many small fires that may later converge, or arson-caused fires where an individual purposely creates multiple, successive ignitions to inhibit the ability of fire suppression resources to contain all of them. However, the cumulative effect of ignitions reducing fire suppression capabilities would be

minimized by reducing the ignition risk associated with each respective project. Projects near the project site would be subject to a similar environmental review that includes wildfire analysis, meaning the said review processes would ensure compliance with all applicable regulations, and hazards would be mitigated. The same would be true of the associated infrastructure because it would be analyzed as part of those respective projects. Although power lines can be a potential ignition source that can lead to wildfires, these lines need to pass over or near vegetation and terrain that can sustain a fire. Power lines associated with the project would be short-span lines that would not pass over large, continuous areas of vegetation. Additionally, the project equipment and the equipment associated with nearby energy projects would be subject to vegetation management and operational regulations. Lastly, the area around the project site is not susceptible to slope failure or post-fire debris flows. Therefore, the cumulative effects of the proposed project and nearby projects related to wildfire would be **less than significant**.

3.16.4 Mitigation Measures

As analyzed above, no significant impacts related to wildfire were identified; thus, no mitigation measures are required. Impacts related to wildfire as a result of project implementation would be less than significant.

3.16.5 Laws, Ordinances, Regulations, and Standards

Federal, state, and local LORS applicable to wildfire are discussed below and summarized in Table 3.16-3.

Table 3.16-3. Laws, Ordinances, Regulations, and Standards Applicable to Wildfire

Jurisdiction	LORS	Applicability	Project Conformity	Opt-In Application Reference
Federal	North American Electric Reliability Corporation, Institute of Electrical and Electronics Engineers, National Electrical Safety Code	Electrical components of the proposed project. Most notably, overhead power lines.	**Yes**. All electrical components, most notably overhead power lines, would comply with the requirements of these LORS, most notably the vegetation management requirements.	Criterion 3.16-2 Criterion 3.16-3 Section 3.16.4.1
State	California Government Code Sections 51175–51189, Section 51182; CCR Title 14, Division 1.5, Chapter 7, Subchapter 3; PRC Sections 4290–4293; CPUC 8386, General Orders and Rules	LORS pertaining mainly to defensible space, vegetation management around power lines, and Fire Hazard Severity Zones.	**Yes**. Vegetation management around power lines would be in compliance with these requirements.	Criterion 3.16-2 Criterion 3.16-3 Criterion 3.16-4 Section 3.16.4.2
State	Part 2 of CCR Title 24, California Building Code	Standards for construction.	**Yes**. Project construction would comply with the California Building Code through compliance with	Criterion 3.16-2 Section 3.16.4.2

Table 3.16-3. Laws, Ordinances, Regulations, and Standards Applicable to Wildfire

Jurisdiction	LORS	Applicability	Project Conformity	Opt-In Application Reference
			the Santa Cruz County Code.	
State	Part 9 of CCR Title 24, California Fire Code, Chapter 12	Requirements for energy storage systems for fire department access, fire protection systems, setbacks, and vegetation management.	**Yes**. All project components would be in compliance with the requirements of the CFC, including those pertaining to fire apparatus access and BESS design.	Criterion 3.16-2 Criterion 3.16-3 Criterion 3.16-4 Section 3.16.4.2
Local	Santa Cruz County General Plan and Local Coastal Program	Policies and actions that guide fire-safe development and local emergency services.	**Yes**. Provides general principles that the project would follow, as well as policies that would impact the emergency services that would serve the project.	Criterion 3.16-.1 Criterion 3.16-2 Section 3.16.4.3
Local	Santa Cruz County Code	Adopts the CFC, which outlines the requirements pertaining to fire safety.	**Yes**. Contains pertinent local codes (fire, building, electrical) that all project components would have to be in compliance with.	Criterion 3.16-2 Criterion 3.16-3 Section 3.16.4.3
Local	County of Santa Cruz Local Hazard Mitigation Plan	Contains goals and objectives that are intended to reduce loss of life and property from natural disasters.	**Yes**. Identifies mitigation action items that aim to meet objectives and reduce the impacts of hazards, some of which would serve the project.	Criterion 3.16-1 Criterion 3.16-2 Section 3.16.4.3
Local	Santa Cruz County Operational Area Emergency Management Plan	Provides an overview of the jurisdiction's approach to emergency operations. Identifies emergency response policies; describes the response and recovery organization; and assigns specific roles and responsibilities to County of Santa Cruz departments, agencies, and community partners.	**Yes**. Facilitates response and recovery activities in an efficient and effective way, which the project would have to be in compliance with.	Criterion 3.16-2 Criterion 3.16-3 Section 3.16.4.3

Notes: LORS = laws, ordinances, regulations, and standards; CCR = California Code of Regulations; PRC = California Public Resources Code; CPUC = California Public Utilities Commission; BESS = battery energy storage system; CFC = California Fire Code.

3.16.5.1 Federal

North American Electric Reliability Corporation Standard FAC-003, Transmission Vegetation Management

According to the North American Electric Reliability Corporation Standard FAC-003, transmission vegetation management standards are applicable to all transmission lines operating at 200 kilovolts and higher and to lower-voltage lines designated by the Regional Reliability Organization as critical to the reliability of the region's electric system (NERC 2024). The elements and requirements of these standards apply to transmission line–related vegetation management activities in the project area.

All electrical components, most notably overhead power lines, associated with the project (including the gen-tie line), would comply with the requirements of these LORS, most notably the vegetation management requirements.

Institute of Electrical and Electronics Engineers Standard 516-2003 (Guide for Maintenance Methods on Energized Power Lines)

In accordance with the Institute of Electrical and Electronics Engineers' Standard 516-2003 (Guide for Maintenance Methods on Energized Power Lines), the project's transmission line vegetation management program requires identifying and documenting clearances between vegetation and any overhead supply conductors while considering transmission line voltage, effects of ambient temperature on conductor sag under maximum design loading, fire risk, line terrain, and elevation, and effects of wind velocities on conductor sway. The clearances identified must be no less than those outlined in this standard.

National Electrical Safety Code Section 23 Clearances

The project's transmission line vegetation management program requires identifying and documenting clearances between vegetation and any overhead supply conductors while considering transmission line voltage, the effects of ambient temperature on conductor sag under maximum design loading, fire risk, line terrain, and elevation, and the effects of wind velocities on conductor sway. The clearances identified must be at least those outlined in this standard.

National Fire Protection Association Codes, Standards, Practices, and Guides

NFPA codes, standards, recommended practices, and guides are developed through a consensus standards development process approved by the American National Standards Institute. This process brings together professionals representing varied viewpoints and interests to achieve consensus on fire and other safety issues. NFPA standards are recommended guidelines and nationally accepted good practices in fire protection, but are not laws or codes unless adopted as such or referenced as such by the CFC or the local fire agency.

- **NFPA 10, Standard for Portable Fire Extinguishers (2018):** A long-standing standard that specifies the types, sizes, ratings, and locations for portable fire extinguishers. It also provides information on how to calculate the number and size of portable fire extinguishers needed.
- **NFPA 11, Standard for Low-, Medium-, and High-Expansion Foam (2016):** NFPA 11 is a long-standing standard that provides recommendations for design and installation of firefighting foam systems and portable equipment. It also provides recommendations regarding calculating the amount of foam concentrate and solution needed for a flammable or combustible liquid fire.

- **NFPA 22, Standard for Water Tanks for Private Fire Protection (2018):** Provides recommendations for the design, construction, installation, and maintenance of tanks and accessory equipment that supply water for private fire protection.
- **NFPA 30, Flammable and Combustible Liquids Code (2018):** Provides safeguards to reduce the hazards associated with the storage, use, and handling of flammable and combustible liquids. It provides detailed information regarding tank storage, spacing, dispensing of liquids, portable containers, and other related operations. NFPA 30 is referenced by the CFC.
- **NFPA 68, Standard on Explosion Protection by Deflagration Venting:** NFPA 68 applies to the design, location, installation, maintenance, and use of devices and systems that vent the combustion gases and pressures resulting from a deflagration within an enclosure so that structural and mechanical damage is minimized.
- **NFPA 69, Standard on Explosion Prevention Systems (2024):** NFPA 69 protects pipes, ductwork, and dust collection systems. It covers explosion prevention, explosion isolation, oxidant concentration control, fuel concentration control, and ignition control systems, and provides requirements for designers, safety officers, and facility managers that are vital to helping prevent dust and spark explosions in woodworking, grain processing, machining, and other facilities.
- **NFPA 70, National Electrical Code (2017):** NFPA 70 is the standard for the design, installation, and inspection of electrical hazards. It includes recommendations for various types of occupancies, and also provides recommendations and criteria for the location and installation of "explosion-proof" electrical systems.
- **NFPA 72, National Fire Alarm and Signaling Code (2019):** NFPA 72 is the standard for the design, installation, and operation of fire alarm systems in various occupancies. This standard is used by fire alarm system designers when designing and installing a system. It is also used by fire agencies when reviewing plans for new systems.
- **NFPA 497, Classification of Flammable Liquids, Gases, or Vapors, and of Hazardous Locations for Electrical Installations in Chemical Process Areas (2017):** NFPA 497 is the standard used, along with NFPA 70, to determine flammable gas, flammable liquid, and combustible liquid hazards, and to recommend the areas that require explosion-proof electrical systems. It also sets forth the extent of the classified areas. Although the title says "chemical process areas," it is used as a standard for explosion-proof electrical systems because it defines various risks and contains numerous diagrams to help the electrical system designer.
- **NFPA 855, Standard for the Installation of Stationary Energy Storage Systems,** is the standard for the design, installation, operation, and removal of BESSs and components. It is the basis for much of CFC Chapter 12, Section 1207.

3.16.5.2 State

California Government Code

California Government Code Sections 51175 through 51189 provide guidance for classifying lands in California as fire hazard areas and requirements for management of property within those lands. CAL FIRE is responsible for classifying FHSZs based on statewide criteria and makes the information available for public review. Further, local agencies must designate, by ordinance, VHFHSZs within their jurisdiction based on the recommendations of CAL FIRE. Section 51182 sets forth requirements for maintaining property within fire hazard areas, such as defensible space, vegetative fuels management, building materials, and standards. Defensible space must consist of 100 feet of fuel modification on each side of a habitable structure, but not beyond the property line unless findings conclude that the clearing is necessary to significantly reduce the risk of structure ignition in the event of a wildfire.

California Code of Regulations

Title 14, Natural Resources

The California Code of Regulations (CCR) Title 14, Division 1.5, Chapter 7, Subchapter 3, Fire Hazard, sets forth requirements for defensible space if the distances specified by the California Government Code, above, cannot be met. For example, options that have similar practical effects include noncombustible block walls or fences, 5 feet of noncombustible material horizontally around a structure, installing hardscape landscaping or reducing exposed windows on the side of a structure with a less than 30-foot setback, or additional structure hardening, such as those required in the California Building Code (CBC), CCR Title 24, Part 2, Chapter 7A. CCR Title 14 Sections 1254 through 1256 establish requirements for vegetation clearance around electric poles and conductors in SRAs.

Title 24, California Building Code

Part 2 of CCR Title 24 contains the CBC. CBC Chapter 7A regulates building materials, systems, and/or assemblies used in the exterior design and construction of new buildings within a WUI fire area. The CBC establishes minimum requirements to safeguard public health, safety, and general welfare. The CBC aims to ensure the safety, health, accessibility, and sustainability of buildings and their occupants. It covers various aspects of building design, such as fire protection, structural integrity, energy efficiency, plumbing, electrical, mechanical, and accessibility. The CBC also incorporates national model codes and standards, as well as California-specific amendments that address the state's unique conditions and needs.

The purpose of CBC Chapter 7A is to establish minimum standards for the protection of life and property by increasing the ability of a building located in any FHSZ within an SRA or a WUI fire area to resist the intrusion of flames or embers projected by a vegetation fire, and to contribute to a systematic reduction in conflagration losses. New buildings located in such areas must comply with the ignition-resistant construction standards outlined in CBC Chapter 7A.

Project construction would comply with the CBC through compliance with the SCCC Ordinances.

California Fire Code

The California Fire Code (CFC), contained in CCR Title 24, Part 9, was created by the California Building Standards Commission and incorporates by adoption the International Fire Code of the International Code Council, with California amendments. The CFC establishes regulations to safeguard against the hazards of fire, explosion, and dangerous conditions in new and existing buildings, structures, and premises. The CFC also establishes requirements intended to provide safety for and assistance to firefighters and emergency responders during emergency operations. The provisions of the CFC apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of buildings and structures in California. The CFC includes regulations regarding fire-resistance-rated construction, fire protection systems such as alarm and sprinkler systems, fire services features such as fire apparatus access roads, means of egress, fire safety during construction and demolition, and WUI areas. CFC Chapter 12 applies to the installation, separation, operation, maintenance, repair, retrofitting, testing, commissioning, and decommissioning of energy systems used for generating or storing energy. Section 1207 specifically applies to electrical energy storage systems. The CFC is updated every 3 years, with the most recent CFC 2025 effective on January 1, 2026.

Chapter 3, Section 322, Storage of Lithium-Ion and Lithium Metal Batteries

CFC Chapter 3, Section 322 describes the construction and storage requirements for facilities storing lithium batteries. The section also describes the required fire protection features for these facilities.

Chapter 5, Fire Service Features

CFC Chapter 5 describes the requirements for fire service features for buildings, structures, and premises. Chapter 5 includes fire apparatus access road and fire department key box requirements.

Chapter 9, Fire Protection and Life Safety Systems

CFC Chapter 9 describes the requirements for active fire protection equipment systems to perform the functions of detecting a fire, alerting occupants or fire department of a fire emergency, mass notification, gas detection, controlling smoke, and controlling or extinguishing the fire.

Chapter 12, Energy Systems

CFC Chapter 12 describes the requirements for the installation, operation, and safety of systems that generate, store, or distribute energy. It ensures these systems do not pose fire or life safety risks.

Chapter 33, Fire Safety During Construction and Demolition

CFC Chapter 33 describes the minimum safeguards for construction, alteration, and demolition operations to provide reasonable safety to life and property from fire.

Chapter 49, Requirements for Wildland/Urban Interface Areas

CFC Chapter 49 provides the minimum standards to reduce the likelihood of life and property loss due to a wildfire through the use of performance and prescriptive requirements for construction and development in SRAs and LRAs designated as a Moderate, High, or Very High FHSZ.

All project components would be in compliance with the requirements of the CFC, including those pertaining to fire apparatus access and BESS design.

California Public Utilities Commission

General Order No. 131-D

The CPUC has sole and exclusive state jurisdiction over the siting and design of the project according to CPUC GO 131-D, Section XIV.B.

General Order No. 95

GO 95 describes the overhead line design, construction, and maintenance requirements. GO 95 applies to all overhead electrical supply and communication facilities outside buildings.

General Order No. 166

GO 166 describes the standards to ensure that jurisdictional electric utilities are prepared for emergencies and disasters to minimize damage and inconvenience to the public that may occur due to electric system failures, major outages, or hazards posed by damage to electric facilities. GO 166 applies to all electric utilities subject to the jurisdiction of the CPUC concerning matters relating to electric service reliability and safety.

General Order No. 167-C

GO 167-C establishes standards for electric-generating facilities and power plants to ensure that they are effectively maintained and operated to ensure safe and reliable service. The GO provides a method for enforcing General Duty Standards for Operations and Maintenance, Generator Maintenance Standards, Generator Operator Standards, Generator Logbook Standards, and other standards adopted pursuant to Public Utilities Code Section 761.3. The GO establishes a program for electric-generating facility audits and inspections and incident investigations. Other requirements established by GO 167-C include reporting safety incidents, submitting periodic compliance filing updates, and responding to Safety and Enforcement Division staff information requests. GO 167-C also provides a means to enforce the protocols for scheduling power plant outages of the California Independent System Operator and the other standards in GO 167. Proposed amendments to this GO to comply with Senate Bill 1383 (2022) by establishing standards for maintenance and operation of energy storage systems, provide oversight over reporting requirements in Senate Bill 38, and establish logbook standards for energy storage systems, among other technical updates, were adopted on March 13, 2025.

Decision 17-12-024

In response to devastating wildfires driven by strong Santa Ana winds, Rulemaking (R.) 08-11-005 was created to consider and adopt regulations to protect the public from potential fire hazards associated with overhead power line facilities and nearby communication facilities. The fire safety regulations apply only to areas referred to as “high-fire-threat areas” where there is a high risk for power line fire ignitions spreading rapidly.

In 2015, R.08-11-005 was closed and rulemaking R.15-05-006 was started to complete the unfinished tasks in R.08-11-005. These tasks included creating and adopting a statewide fire-threat map that outlines the boundaries of a new HFTD where the previously adopted regulations would apply; figuring out the need for more fire-safety regulations in the HFTD; and revising GO 95 to include a definition and maps of the HFTD, as well as new fire-safety regulations. As part of R.15-05-006, focus was on development and adoption of a statewide fire-threat map and identification, evaluation, and adoption of fire-safety regulations in the HFTD. In 2017, Decision (D.) 17-12-024 was issued to adopt regulations to enhance fire-safety in the HFTD and adopt the final CPUC Fire-Threat Map. The CPUC Fire-Threat Map describes the HFTD and consists of three areas: Tier 1 High Hazard Zones, Tier 2 Elevation Risk, and Tier 3 Extreme Risk areas.

Public Utilities Code 8386

Public Utilities Code 8386 describes the basic requirements for investor-owned utilities toward operating their equipment to minimize the risk of catastrophic wildfire posed by their electrical lines and equipment. Public Utilities Code 8386 also describes the required elements of a Wildfire Mitigation Plan prepared by an investor-owned utility, including the wildfire risks, risk drivers present in their service territory, and the strategies the investor-owned utility is performing to mitigate these risk/risk drivers.

Public Utilities Code 761.3

Public Utilities Code 761.3 focuses on the regulation and maintenance of electricity generation and storage facilities by the CPUC. The CPUC is responsible for implementing and enforcing standards to ensure the reliable operation of electricity generation and storage facilities, and is also responsible for enforcing protocols for scheduling power plant outages, which are managed by the Independent System Operator. The code does not apply to nuclear-powered generating facilities regulated by the Nuclear Regulatory Commission, nor to certain small power production and cogeneration facilities.

California Public Resources Code Section 25545.16

PRC Section 25545.16 requires that an application submitted to the California Energy Commission after January 1, 2026, in accordance with the provisions relating to certification of facilities by the California Energy Commission, and an application submitted to a local jurisdiction, as defined, for an energy storage system, include the applicant's certification that, at least 30 days before applying, the applicant met and conferred with the authority that has jurisdiction over fire suppression in the area where the energy storage system is proposed, as provided. The code prohibits the California Energy Commission from certifying or local authorities from approving the energy storage system unless, after installation is complete but before commencing operations or use of the batteries, the energy storage system is inspected by the authority with jurisdiction over fire suppression. The code requires that the applicant bear the cost of the inspection. As part of the next update to the California Building Standards Code considered after July 1, 2026, the code requires the Office of the State Fire Marshal to review and consider proposing provisions that restrict the location of energy storage systems to dedicated-use, noncombustible buildings or outdoor installations.

California Public Resources Code Section 4290

PRC Section 4290 requires minimum fire safety standards related to defensible space that are applicable to residential, commercial, and industrial building construction in SRA lands and lands classified and designated as VHFHSZs. These regulations include road standards for fire apparatus access, standards for signs identifying roads and buildings, fuel breaks and green belts, and minimum water supply requirements. These regulations do not supersede local regulations that equal or exceed minimum regulations required by the state.

California Public Resources Code Section 4291

PRC Section 4291 requires a reduction of fire hazards around buildings located adjacent to a mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or land that is covered in flammable material. The PRC requires a minimum 100 feet of vegetation management to be maintained around all buildings, and is the primary mechanism for conducting fire prevention activities on private property within CAL FIRE's jurisdiction. Further, PRC Section 4291 requires the removal of dead and dying vegetative materials from the roof of a structure, and trees and shrubs must be trimmed from within 10 feet of the outlet of a chimney or stovepipe. Exemptions may apply for buildings with an exterior constructed entirely of nonflammable materials.

California Public Resources Code Section 4292

PRC Section 4292 requires any person or entity that owns, controls, operates, or maintains an electrical transmission or distribution line on mountainous land or on forest-, brush-, or grass-covered lands to maintain a vegetation-free firebreak around specified electrical poles and towers. The statute requires a minimum clearance

of 10 feet in all directions, measured from the outer circumference of the pole or tower, where the pole or tower supports energized equipment such as switches, fuses, transformers, lightning arresters, line junctions, or dead-end or corner poles.

California Public Resources Code Section 4293 (Power Line Vegetation Clearance)

PRC Section 4293 requires that any person or entity that owns, controls, operates, or maintains an electrical transmission or distribution line on mountainous land or on forest-, brush-, or grass-covered lands maintain minimum vegetation clearances between energized conductors and surrounding vegetation. Required clearances range from 4 to 10 feet depending on line voltage, and must be sufficient to maintain clearance under high-temperature conditions. The statute also requires removing or trimming dead, diseased, decayed, or leaning trees, or portions thereof, that could contact or fall onto electrical lines. Enforcement authority rests with CAL FIRE or the local fire protection agency, which may allow site-specific exceptions where appropriate. The following standards are to be met:

- Maintain a clearance of the respective distances specified in this section in all directions between all vegetation and all conductors that are carrying electric current:
  - For any line operating at 2,400 or more volts but less than 72,000 volts: 4 feet
  - For any line operating at 72,000 or more volts but less than 110,000 volts: 6 feet
  - For any line operating at 110,000 or more volts: 10 feet

State Minimum Fire Safe Standards

The State Minimum Fire Safe Standards establish state minimum wildfire protection standards in conjunction with building construction and development in SRAs and VHFHSZs, as defined in California Government Code Section 51177(i). The design and construction of structures, subdivisions, and developments in SRAs and VHFHSZs must provide for basic emergency access and perimeter wildfire protection measures. These standards provide for emergency access; signing and building numbering; private water supply reserves for emergency fire use; and vegetation modification, fuel breaks, greenbelts, and measures to preserve undeveloped ridgelines. Subchapter 2 specifies the minimums for such measures.

California Department of Forestry and Fire Protection

CAL FIRE is tasked with reducing wildfire-related impacts and enhancing California's resources. CAL FIRE responds to all types of emergencies, including wildland fires and residential/commercial structure fires. In addition, CAL FIRE is responsible for the protection of approximately 31 million acres of private land within California and, at the local level, is responsible for inspecting defensible space around private residences. CAL FIRE is responsible for enforcing state fire safety codes included in the CCR and PRC. PRC Section 4291 states generally that any person operating any structure located on brush-covered lands or land covered with flammable material is required to maintain defensible space around the structure. CCR Title 14 Section 1254 identifies the minimum clearance required around utility poles. In SRAs within the jurisdiction of CAL FIRE, the Fire Safety Inspection Program is an important tool for community outreach and enforcement of state fire codes.

CAL FIRE also inspects utility facilities and makes recommendations regarding improvements in facility design and infrastructure. Joint inspections of facilities by CAL FIRE and the utility owner are recommended by CAL FIRE so that each entity may assess the current state of the facility and then successfully implement fire prevention techniques and policies. Violations of state fire codes discovered during inspections are required to be brought into compliance

with the established codes. If a CAL FIRE investigation reveals that a wildfire occurred as a result of a violation of a law or negligence, the responsible party could face criminal and/or misdemeanor charges. In cases where a violation of a law or negligence has occurred, CAL FIRE has established the Civil Cost Recovery Program, which requires parties liable for wildfires to pay for wildfire-related damages.

Fire Hazard Severity Zone Mapping

CAL FIRE's FRAP database provides data documenting areas of significant fire hazards throughout California based on fuel loading, slope, fire history, weather, and other relevant factors, as directed by PRC Sections 4201 through 4204 and California Government Code Sections 51175 through 51189. FHSZs are ranked from Moderate to Very High and are categorized for fire protection within a Federal Responsibility Area, SRA, or LRA under the jurisdiction of a federal agency, CAL FIRE, or local agency, respectively. As noted above and depicted in Figure 3.16-2, the project site and surrounding area is not within a VHFHSZ.

CAL FIRE 2024 Strategic Plan

PRC Sections 4114 and 4130 authorize the State Board of Forestry to establish a fire plan (the Strategic Plan) that establishes the levels of statewide fire protection services. These levels of service recognize other fire protection resources at the federal and local levels that collectively provide a regional and statewide emergency response capability. In addition, the state's integrated mutual aid fire protection system provides fire protection services through automatic and mutual aid agreements for fire incidents across all ownerships. The California Fire Plan is the state's road map for reducing the risk of wildfire through planning and prevention to reduce firefighting costs and property losses, increase firefighter safety, and contribute to ecosystem health.

The State Board of Forestry has adopted these Strategic Plans for California since the 1930s, and periodically updates them to reflect current and anticipated needs of California's wildland. The Strategic Plan is adopted to better respond to the changes of the environmental, social, and economic landscape of California's wildlands, and to provide CAL FIRE with appropriate guidance for adequate statewide fire protection of SRAs. The latest Strategic Plan is dated July 1, 2024. CAL FIRE implements and enforces the Board of Forestry's policies and regulations. The 2024 Strategic Fire Plan (1) ensures that CAL FIRE invests strategically to protect the safety, health, and well-being of everyone who works for CAL FIRE; (2) strengthens CAL FIRE's ability to carry out its world-class emergency response operation, build long-term wildfire resilience, and help to restore a natural, manageable wildfire regime amidst a changing climate; and (3) ensures that CAL FIRE can recruit and retain a well-trained and inclusive workforce from the remarkable diversity of talent across California (CAL FIRE 2024).

CAL FIRE San Mateo – Santa Cruz Unit Strategic Fire Plan

CAL FIRE requires counties to develop fire protection management plans that address potential threats of wildland fires. The CAL FIRE San Mateo – Santa Cruz Unit, which is the County Fire Department for both San Mateo County and Santa Cruz County, adopted its most-recent Strategic Fire Plan for the San Mateo County and Santa Cruz County Unit in May 2025. The plan is a planning and assessment tool that identifies and prioritizes pre-fire and post-fire management strategies and tactics meant to reduce the loss of values at risk within the unit (CAL FIRE 2025c).

California Health and Safety Code – State Fire Regulations

Fire regulations for California are established in California Health and Safety Code Sections 13000 et seq. and include regulations for structural standards (similar to those identified in the CBC), fire protection and public

notification systems, fire protection devices such as extinguishers and smoke alarms, standards for high-rise structures and childcare facilities, and fire suppression training. The State Fire Marshal is responsible for enforcement of these established regulations and building standards for all state-owned buildings, state-occupied buildings, and state institutions within California.

Mutual Aid Agreements

The California Disaster and Civil Defense Master Mutual Aid Agreement, as provided by the California Emergency Services Act, provides statewide mutual aid between and among local jurisdictions and the state. The statewide mutual aid system exists to ensure that adequate resources, facilities, and other supports are provided to jurisdictions whenever resources prove to be inadequate for a given situation. Each jurisdiction controls its own personnel and facilities but can give and receive help whenever needed. CAL FIRE and the SCCFD participate in these mutual aid, automatic aid, and other agreements with surrounding fire departments. In some instances, the closest available resource may come from another fire department.

3.16.5.3 Local

The proposed project would be subject to the state and federal agency regulations and documents described above, as well as regional and local planning documents, such as the Santa Cruz County General Plan and the SCCC Ordinances.

Santa Cruz County Code

Chapter 7.92, Santa Cruz County Fire Code

The Santa Cruz County Fire Code (SCCC Chapter 7.92), which adopts the CFC, regulates the safeguarding of life, property, and public welfare from the hazards of fire, including development in the WUI. The SCCC contains pertinent local codes (fire, building, electrical) that all proposed project components would have to be in compliance with.

Chapter 12, County of Santa Cruz County Building Code

SCCC Chapter 12 is the County's Building Code, which incorporates the CBC (Chapter 12.10), as amended, to reflect conditions in Santa Cruz County. The County Building Code contains standards and regulations relating to construction materials, fire protection measures, exterior design standards, and access requirements for fire-fighting purposes. The County Building Code addresses the installation of fire-protection equipment, building setbacks, fire retardant building materials, and the minimum standards to safeguard and protect life, buildings, and structures from fire hazards within Santa Cruz County.

County of Santa Cruz General Plan/Local Coastal Program

California Government Code Section 65302(g) requires the development of General Plan Safety Elements. The County of Santa Cruz General Plan/Local Coastal Program is a comprehensive, long-term planning document for the unincorporated areas of Santa Cruz County and includes the County's Local Coastal Program, which was certified by the California Coastal Commission in 2024 (County of Santa Cruz 2022b). The County General Plan and Local Coastal Program provide policies and programs to establish guidelines for future growth and all types of physical developments. The Public Safety Element of the County's General Plan includes objectives and policies that address wildland fires and fire protection. This element was updated and adopted by the County Board of

Supervisors in 2020. The revisions (all except sections related to coastal bluffs and beaches) were approved by the California Coastal Commission in February 2022 subject to County acceptance of modifications.

County of Santa Cruz Local Hazard Mitigation Plan

The County of Santa Cruz Local Hazard Mitigation Plan 2021–2026 was prepared in accordance with the requirements of the Federal Emergency Management Agency. The Federal Emergency Management Agency reviews and approves Local Hazard Mitigation Plans (LHMPs) and requires an update on a 5-year cycle. The County LHMP identifies potential hazards in Santa Cruz County, including wildfire hazards. The LHMP provides hazard mitigation to implement actions that would reduce vulnerability and risk from hazards or reduce the severity of the effects of hazards on people and property. Mitigation actions include short-term and long-term activities that reduce the impacts of hazards, reduce exposure to hazards, or reduce effects of hazards through various means, including preparedness, response, and recovery measures. Effective mitigation actions also reduce the adverse impacts and cost of future disasters. The mitigation actions in the LHMP are not equivalent to mitigation measures that would be recommended as part of an Environmental Impact Report. The mitigation actions are implemented by assigned County departments, some of which may serve the project and the surrounding project area, such as CAL FIRE and the Santa Cruz County Office of Response, Recovery & Resilience (County of Santa Cruz 2021).

The County LHMP also designates critical hazard areas in Santa Cruz County as areas subject to greater threat from wildfire, and identifies these areas based on slope, vegetation, ability to respond to fire threats, and localized weather conditions in order to assist with preparation of County hazard mitigation and response planning. The project is not within a defined critical hazard area of Santa Cruz County, as shown in Figure 11 of the LHMP. The LHMP was last updated in September 2021 (County of Santa Cruz 2021).

Santa Cruz County Operational Area Emergency Management Plan

The County Office of Emergency Services developed the Operational Area Emergency Management Plan to address the planned response to emergencies and incidents affecting the unincorporated areas of Santa Cruz County. The purpose of the Emergency Management Plan is to establish a comprehensive approach to emergency management and provide guidance to agencies within the operational area in the protection of public health and safety and preparing for and responding to incidents (County of Santa Cruz 2024).

Santa Cruz – San Mateo Community Wildfire Protection Plan

Community Wildfire Protection Plans are authorized and defined in Title 1 of the Healthy Forests Restoration Act of 2003. The Santa Cruz County San Mateo County Community Wildfire Protection Plan identifies the risks and hazards associated with wildland fires in the WUI areas of San Mateo and Santa Cruz Counties (CAL FIRE 2018). The plan also identifies recommendations aimed at preventing and reducing both infrastructure and ecosystem damage associated with wildland fires. The plan documents suggested actions intended to reduce the risk to people, property, and the environment. Fuel reduction projects identified in an approved Community Wildfire Protection Plan receive priority for federal funds.

The San Mateo – Santa Cruz Unit Strategic Fire Plan and the Community Wildfire Protection Plan address areas with inadequate access and evacuation routes; identify risk to life and property from wildland fires; and provide information on firefighter safety, community evacuation, and recommended actions by first responders. The plans also address post-fire responsibilities for natural resource recovery, including watershed protection, reforestation, and ecosystem restoration (CAL FIRE 2018, 2025c).

3.16.6 Agencies and Agency Contacts

Applicable agency contacts for wildfire are shown in Table 3.16-4.

Table 3.16-4. Agency Contacts

Issue	Agency	Address	Contact
Emergency Response for Hazardous Materials Spills and Fires	Santa Cruz County Environmental Health Division	701 Ocean Street, Room 312 Santa Cruz, California 95060	Andrew Strader, Director of Environmental Health 831.454-2022 EnvironmentalHealth@santacruzcountyca.gov
Fire Hazards	Santa Cruz County Fire Marshal	6059 Highway 9 Felton, California 95018	Joe Paquin, Deputy Fire Marshal 831.335.6748 SCCFDFireMarshal@fire.ca.gov
Fire Hazards	Pajaro Valley Fire Protection District	562 Casserly Road Watsonville, California 95076	Mike Urbani, PVFPD Fire Chief 831.722.6188 Mike.Urbani@fire.ca.gov

Note: PVFPD = Pajaro Valley Fire Protection District

3.16.7 Permits and Permit Schedule

Documents that would be prepared regarding the installation, operation, and removal of the BESS facility/components include a commissioning plan, a commissioning report with results of initial acceptance testing, an operation and maintenance manual with inspection and testing records, and a decommissioning plan. In addition, a Hazard Mitigation Analysis would need to be prepared for the BESS facility/components. The components, order/timeline, and recipients of these documents would occur in accordance with the requirements of CFC Section 1207.2, Commissioning, Decommissioning, Operation and Maintenance. Finally, the selected BESS technology and the specific model of BESS would need to demonstrate that large-scale fire testing has been conducted on a representative BESS unit in accordance with UL 9540A, and show that a fire in the BESS unit would not propagate to adjacent BESS units.

3.16.8 References

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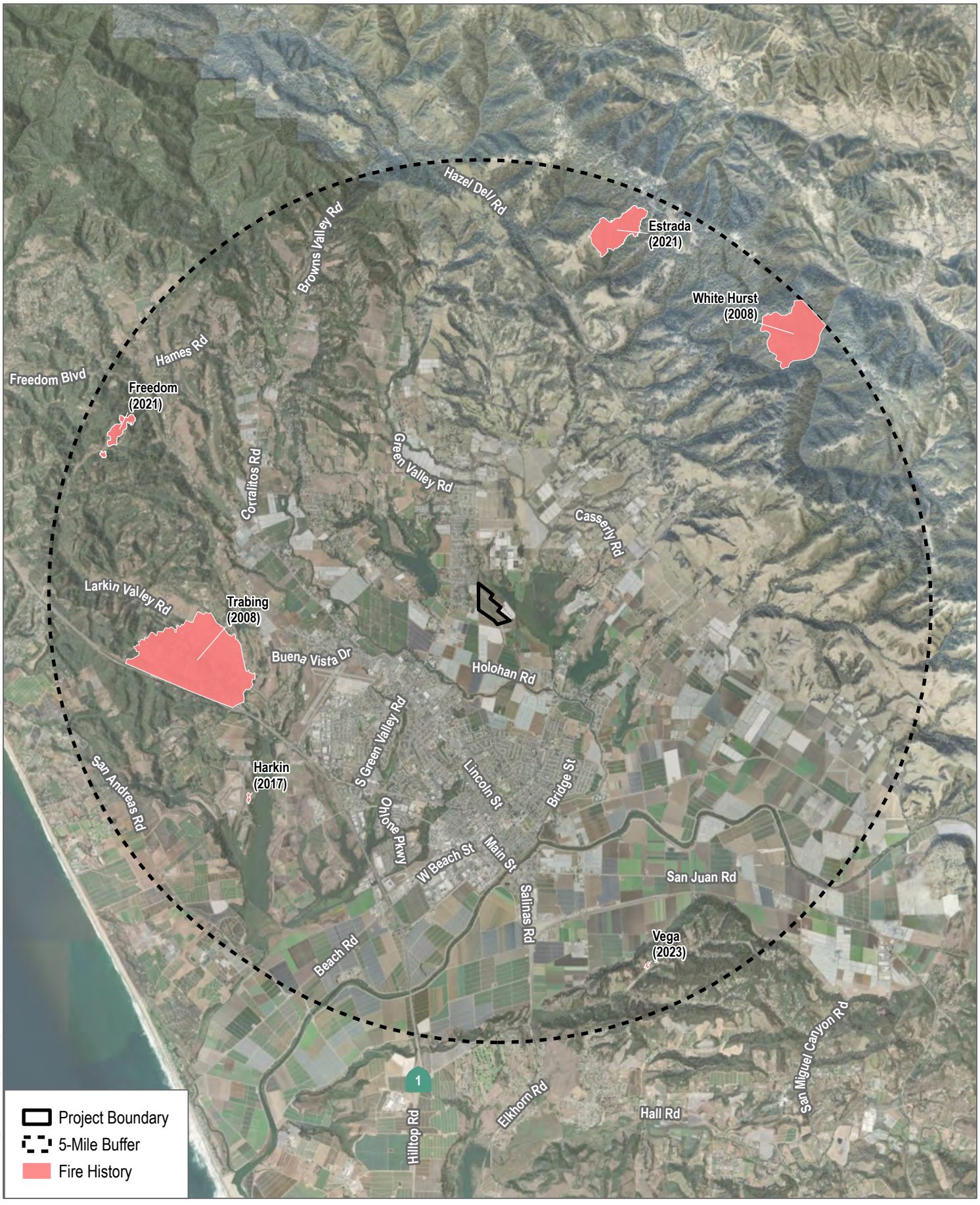

SOURCE: Bing Maps Aerial Imagery Accessed 2024; Calfire 2024

DUDEK

0 0.5 1 Miles

FIGURE 3.16-1

Fire History

Seahawk Energy Storage Project

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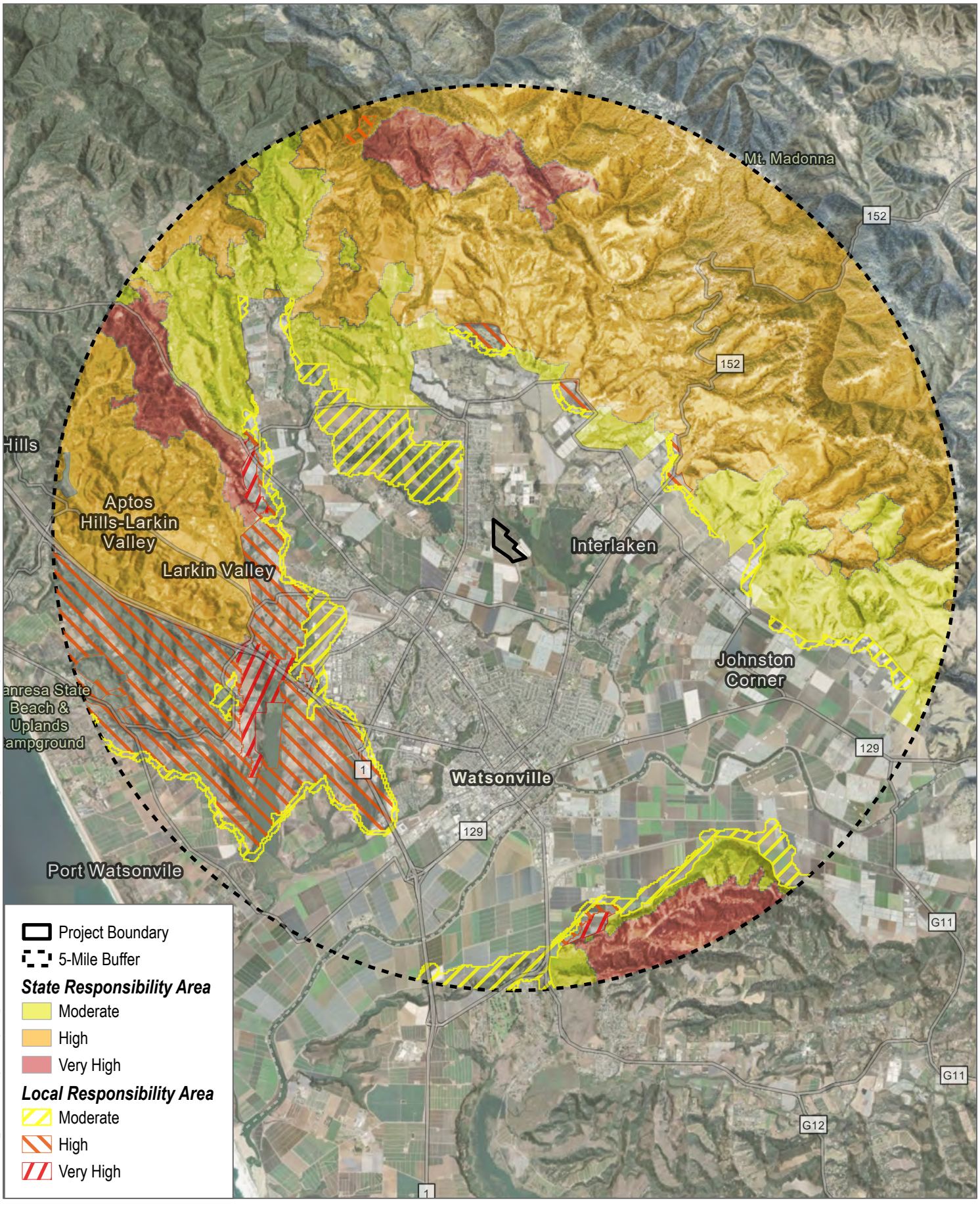

SOURCE: Bing Maps Aerial Imagery Accessed 2024; Calfire 2024

DUDEK

0 0.5 1 Miles

FIGURE 3.16-2

Fire Hazard Severity Zones

Seahawk Energy Storage Project

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3.17 Worker Health and Safety

This section summarizes the worker health and safety issues that may be encountered during construction and operation of the Seahawk Battery Energy Storage System (BESS) Project (project).

The project is currently proposed to feature EnerC+ lithium-iron phosphate batteries, or similar technology, housed in prefabricated containers equipped with integrated power conversion systems and fire suppression technology, all designed to meet applicable regulatory standards. The project would also include on-site interconnection infrastructure, such as transformers. The project would interconnect from the on-site collector substation (project substation) to the adjacent Pacific Gas and Electric Company (PG&E) Green Valley Substation via a 115-kilovolt generation interconnection (gen-tie) transmission line. The line would be installed underground from the project substation to the Point of Change of Ownership at an overhead riser pole on the PG&E parcel, and an overhead line would connect to the Point of Interconnection at the PG&E Green Valley Substation. The gen-tie line would cross Minto Road, then continue west, parallel to the existing Minto Road right-of-way. The gen-tie line would then route northwest and continue parallel to the boundaries of the Green Valley Substation until turning east to reach the Point of Interconnection at the Green Valley Substation. The project would include the following primary components: battery storage containers, inverters and transformers, an on-site project substation, a gen-tie line, an operations and maintenance building, a fire protection system, access improvements, stormwater management, a noise wall, a Supervisory Control and Data Acquisition (SCADA) system, and temporary construction laydown areas. The facility would be constructed, operated, and maintained with compliance with all applicable worker health and safety laws and regulations.

Because of the subject matter, this section follows a slightly different format than other sections in Chapter 3. Instead of a standard discussion of affected environment followed by the project's environmental consequences and proposed mitigation measures for significant impacts, this section contains worker safety information, including the laws, ordinances, regulations, and standards (LORS), that apply to the proposed project. Sections are as follows:

- Section 3.17.1 describes the environmental setting related to the proposed project.
- Section 3.17.2 describes the training and safety programs in terms of analyses conducted to identify hazards and the safety compliance and training programs that would be established on site.
- Section 3.17.3 discusses the applicable LORS.
- Section 3.17.4 lists the regulatory agencies involved and key agency contacts.
- Section 3.17.5 provides information regarding required permits and permitting schedules.

3.17.1 Environmental Setting

The project site is approximately 1 mile north of the City of Watsonville and east of the intersection of Minto Road and Green Valley Road in Santa Cruz County, California. The project site is on an approximately 47-acre agricultural site. The project would be constructed on approximately 16 acres (site plan area, including setbacks and access roads) on the north-easterly portion of the site; a long-term land lease is proposed to accommodate development of the BESS. The project site is bordered by Minto Road to the north and northwest, the Green Valley Substation to the northwest, the Pajaro Valley Unified School District Transportation Office to the south, and agricultural land to the east and south.

Climate in the project area is characterized by a Mediterranean climate with mild, relatively stable temperatures with wet winters and dry summers. Summers are typically mild, with daytime highs generally in the low to mid-70s degrees Fahrenheit, and winters are mildly cool with daytime highs in the 50s to 60s degrees Fahrenheit and nighttime lows dropping into the mid-40s to low 50s degrees Fahrenheit. Most of the rainfall for the year occurs in the winter and spring, and summers tend to be drier. Annually, Watsonville receives approximately 21 to 25 inches of precipitation. A marine layer is common in the region, particularly in the mornings of summer months due to the proximity of the ocean. Humidity is generally low to moderate, especially in the dry season (usually May through October) (Davey Resource Group Inc. 2022).

A Phase I Environmental Site Assessment was conducted in 2021 for the project site to identify recognized environmental conditions, controlled recognized environmental conditions, and historical recognized environmental conditions (Appendix 3.5A). The assessment did not identify any recognized environmental conditions, controlled recognized environmental conditions, or historical recognized environmental conditions on the project site. The assessment did identify the following business environmental risk associated with past agricultural use of the project site (Appendix 3.5A):

> The Subject Property has historically been used for agricultural orchard purposes. As such, there is a potential that agricultural chemicals, such as pesticides, herbicides and fertilizers, are being used on site. In general, it has been EBI's experience that there is a low potential for soil contamination at concentrations in excess of regulatory thresholds as a result of the use of persistent pesticides/herbicides from normal crop application. It is EBI's understanding that the Subject Property will continue to operate as an apple orchard, with a planned installation of a proposed battery storage system on a portion of the property. EBI understands that the installation of a proposed battery storage system may involve limited ground disturbance and off-site disposal of subsurface soils. As such, the potential exists that pesticide and/or herbicide impacted soil may be encountered during construction of the battery storage system. This is considered a business environmental risk (BER).

See Section 3.5, Hazardous Materials Handling, for a discussion on associated recommendations and soil sampling results.

3.17.2 Impact Analysis

The following sections present the potential impacts from construction and operation of the proposed project on worker health and safety.

3.17.2.1 Methodology

The following sections address the California Energy Commission's requirement to evaluate worker health and safety per Appendix B of Title 20, California Code of Regulations, Section 1704.

3.17.2.2 Hazard Analysis

Workers could be exposed to activities that pose potential safety hazards. A hazard analysis is included to evaluate the hazards and assess control measures. The analysis identifies the hazards anticipated during construction, operation, and decommissioning, and indicates what safety programs should be developed and implemented to

avoid, mitigate, and appropriately manage those hazards. The hazards analysis for project construction and decommissioning activities is provided in Table 3.17-1, and the hazard analysis prepared for project operation is provided in Table 3.17-2. The types of hazards anticipated during construction, operation, and decommissioning are similar; thus, there is duplication in the tables.

Programs and plans described in this section set forth the methods that would be followed to achieve health and safety objectives. The programs and plans would be in written and electronic formats that would be kept at specific locations and be readily available to staff and first responders. Each program or plan would contain job-specific training requirements that are translated into detailed training courses. These courses would be taught to construction and operation personnel, as needed.

A draft Hazard Mitigation Analysis (HMA) was prepared by Fire & Risk Alliance in December 2025 that evaluated the technology that would be used in the BESS design and potential consequences associated with various failure modes. Further details on the HMA and its findings are provided in Section 3.17.2.4, Fire Protection, and the draft HMA report is available as Appendix 3.16B.

Table 3.17-1. Construction Hazard Analysis

Activity	Hazard*	Control
Operating motor vehicles and heavy equipment	▪ Employee injury and property damage from collisions between people and equipment	▪ Motor Vehicle and Heavy Equipment Safety Program
Operating forklifts	▪ Same as heavy equipment	▪ Forklift Operation Program
Trenching and excavating	▪ Employee injury and property damage from the collapse of trenches and excavations or exposure to fumes or vapors that have collected in the trench/excavation	▪ Excavation/Trenching Program ▪ Confined Space Training
Working at elevated locations	▪ Falls from the same level and from elevated areas	▪ Fall Prevention Program ▪ Scaffolding/Ladder Safety Program ▪ Articulating Boom Platforms Program ▪ Working at Heights
Using cranes	▪ Property damage from falling loads ▪ Employee injuries from falling loads ▪ Injuries and property damage from contact with crane	▪ Crane and Material Handling Program ▪ Critical Lift Studies, as necessary ▪ Crane Operator Certification
Working with flammable and combustible liquids	▪ Fire/spills	▪ Fire Protection and Prevention Program ▪ Housekeeping and Material Handling and Storage Program ▪ Spill Prevention, Countermeasure, and Control Plan
Hot work (including cutting and welding)	▪ Employee injury and property damage from fire	▪ Hot Work Safety Program ▪ Respiratory Protection Program

Table 3.17-1. Construction Hazard Analysis

Activity	Hazard*	Control
	▪ Exposure to fumes during cutting and welding ▪ Eye exposure to ultraviolet and infrared radiation during cutting and welding	▪ Employee Exposure Monitoring Program ▪ PPE Program ▪ Fire Protection and Prevention Program
Inspecting and maintaining temporary systems during construction activities	▪ Injury and property damage from contact with hazardous energy sources (e.g., electrical, thermal, and mechanical)	▪ Electrical Safety Program ▪ LO/TO Program
Working on electrical equipment and systems	▪ Contact with live electricity and energized equipment	▪ Electrical Safety Program ▪ LO/TO Program ▪ PPE Program
Exposure to hazardous waste	▪ Working with or having the potential to be exposed to contaminated soil, groundwater, or debris during construction	▪ Hazardous Waste Program
Entering confined spaces	▪ Injury from physical and chemical hazards	▪ Permit Required ▪ Confined-Space Entry Program ▪ Air Monitoring Requirements ▪ LO/TO Program ▪ PPE Program
General construction activities	▪ Injury from hand and portable power tools	▪ Hand and Portable Power Tool Safety Program ▪ PPE Program ▪ Powder-Actuated Tools Program
	▪ Injury and/or property damage from inadequate walking and working surfaces	▪ Housekeeping and Material Handling and Storage Program
	▪ Exposure to occupational noise	▪ Hearing Conservation Program ▪ PPE Program
	▪ Injury from improper lifting and carrying materials and equipment	▪ Back Injury Prevention Program
	▪ Injury to head, eye/face, hands, body, feet, and skin	▪ PPE Program
	▪ Exposure to hazardous gases, vapors, dusts, and fumes, including wildfire smoke	▪ Hazard Communication Program ▪ Respiratory Protection Program ▪ PPE Program ▪ Air Monitoring Program
	▪ Exposure to various hazards ▪ Reporting of hazardous conditions during construction	▪ Injury and Illness Prevention Program
	▪ Heat and cold stress (i.e., heat illness)	▪ Heat and Cold Stress Monitoring Control Program, including a Heat Illness Prevention Plan (outdoor/indoor)

Table 3.17-1. Construction Hazard Analysis

Activity	Hazard*	Control
Working outdoors and in remote areas	▪ Employees working alone outdoors ▪ Lightning strike during a storm	▪ Working Alone/Person-Down Plan ▪ Lightning Procedure

Notes: LO/TO = lock-out/tag-out; PPE = personal protective equipment.

* The hazards and hazard controls provided are generic to construction activities. During various phases of construction, additional hazard analysis would be performed to evaluate the relevant hazards more specifically and to develop appropriate controls.

Table 3.17-2. Operation Hazard Analysis

Activity	Hazard*	Control
Operating motor vehicles and heavy equipment	▪ Injury and property damage from collisions between people and equipment	▪ Motor Vehicle and Heavy Equipment Safety Program
Operating forklifts	▪ Same as heavy equipment	▪ Forklift Operation Program
Trenching and excavating	▪ Injury and property damage from the collapse of trenches and excavations	▪ Excavation/Trenching Program ▪ Confined Space Training
Working at elevated locations	▪ Falls from the same level and from elevated areas	▪ Fall Prevention Program ▪ Scaffolding/Ladder Safety Program ▪ Working at Heights
Using cranes and derricks	▪ Property damage from falling loads ▪ Injuries from falling loads ▪ Injuries and property damage from contact with crane or derrick	▪ Crane and Material Handling Program ▪ Critical Lift Studies, as necessary ▪ Crane Operator Certification
Working with flammable and combustible liquids	▪ Fire/spills	▪ Fire Protection and Prevention Program ▪ Spill Prevention, Countermeasure, and Control Plan
Working with hazardous materials	▪ Injury from chemical burns, inhalation, digestion, and absorption	▪ Safe Use Handling Procedures ▪ Job-Specific Training ▪ PPE Program ▪ Spill Response Procedures, including implementation of a Spill Prevention, Countermeasure, and Control Plan ▪ Emergency Response Program
Exposure to hazardous waste	▪ Personnel who are working with or have the potential to be exposed to contaminated soil, groundwater, or debris during operation	▪ Hazardous Waste Program
Hot work (including cutting and welding)	▪ Injury and property damage from fire ▪ Exposure to fumes during cutting and welding ▪ Eye exposure to ultraviolet and infrared radiation during cutting and welding	▪ Hot Work Safety Program ▪ Respiratory Protection Program ▪ Employee Exposure Monitoring Program ▪ PPE Program ▪ Fire Protection and Prevention Program ▪ Hexavalent Chromium Program

Table 3.17-2. Operation Hazard Analysis

Activity	Hazard*	Control
Troubleshooting and maintaining systems and general operational activities	▪ Injury and property damage from contact with hazardous energy sources (e.g., electrical, thermal, and mechanical)	▪ Electrical Safety Program ▪ LO/TO Program
Working on electrical equipment and systems	▪ Contact with live electricity ▪ Chemical, electrical, arc flash, and explosions	▪ Electrical Safety Program ▪ Emergency Response Program ▪ PPE Program
Entering confined spaces	▪ Injury from physical and chemical hazards	▪ Confined-Space Program ▪ LO/TO Program ▪ PPE Program
General operation activities	▪ Injury from hand and portable power tools	▪ Hand and Portable Power Tool Safety Program ▪ PPE Program
General operation activities and working outdoors	▪ Injury and property damage from inadequate walking and work surfaces	▪ Housekeeping and Material Handling and Storage Program
	▪ Overexposure to occupational noise	▪ Hearing Conservation Program ▪ PPE Program
	▪ Injury from improper lifting and carrying of materials and equipment	▪ Back Injury Prevention Program
	▪ Injury and property damage from unsafe driving	▪ Safe Driving Program
	▪ Exposure to hazardous gases, vapors, dusts, and fumes, including wildfire smoke	▪ Hazard Communication Program ▪ Respiratory Protection Program ▪ PPE Program ▪ Employee Exposure Monitoring Program
	▪ Reporting and repairing hazardous conditions	▪ Injury and Illness Prevention Program
	▪ Heat and cold stress (e.g., heat illness)	▪ Heat and Cold Stress Monitoring and Control Program, including Heat Illness Prevention Plan (outdoor/indoor)
	▪ Ergonomic injuries	▪ Ergonomic Awareness Program
	▪ Employees working alone outdoors ▪ Lightning strikes during a storm	▪ Working Alone/Person-Down Plan ▪ Lightning Procedure ▪ Heat Stress Training and Management
Biological hazards	▪ Wildlife hazards	▪ Emergency Response Plan ▪ Working Alone/Person-Down Plan ▪ Pest Management Protocol

Notes: LO/TO = lock-out/tag-out; PPE = personal protective equipment.

* The hazards and hazard controls provided are generic to operations. During various phases of operation, additional hazard analysis would be performed to evaluate the relevant hazards more specifically and to develop appropriate controls.

3.17.2.3 Training and Safety Programs

To protect the safety and health of workers during construction, operation, and decommissioning activities associated with the project, health and safety programs designed to mitigate hazards and comply with applicable regulations would be implemented. The following safety and training programs include general California Occupational Safety and Health Administration (Cal/OSHA) requirements and are provided for comprehensive coverage, but not all programs would be applicable to every project activity. Periodic audits would be performed by qualified individuals to determine whether proper work practices are being used to mitigate hazardous conditions and to evaluate regulatory compliance. The following subsections contain information on the anticipated content of the health and safety programs.

3.17.2.3.1 Construction and Decommissioning Health and Safety Program

Safety programs would be developed and implemented during construction and decommissioning activities. These programs and their major components are outlined below.

Injury and Illness Prevention Program

- Philosophy and safety commitment
- Safety leadership and responsibilities
- Accountability
- Employee communication
- Planning “job hazard analysis and pre-task”
- Compliance with work rules and safe work practices
- Measuring compliance and effectiveness of prevention methods and inspections/audits
- Communicating about performance and implementing necessary improvements
- Training and other communication requirements

Fire Protection and Prevention Program

- General requirements
- Housekeeping and proper material storage
- Employee alarm/communication system
- Portable fire extinguishers
- Fixed firefighting equipment
- Fire control and containment
- Flammable and combustible liquid storage
- Dispensing and disposing of flammable liquids
- Service and refueling areas
- Training

Personal Protective Equipment Program

- Personal protective devices
- Hazard analysis
- Training
- Head protection
- Eye/face protection
- Body protection
- Hand protection
- Foot protection
- Skin protection
- Fall protection
- Electrical arc flash protection
- Respiratory protection
- Hearing protection

First Aid, CPR, and Automated External Defibrillator

- General requirements
- Written program
- Training
- Maintenance

Emergency Response Action Program/Plan

As required by California Senate Bill 38 for BESS facilities located in California, an Emergency Response Plan for the project was prepared to aid local emergency responders with critical safety and emergency response information related to the CATL EnerC+ lithium-ion BESS. The Emergency Response Plan addresses potential hazards and response strategies related to BESS incidents, transformer failures, and switchgear malfunctions, along with guidance for post-incident procedures. The Emergency Response Plan also outlines a training and exercise schedule designed to prepare site personnel and local first responders to effectively manage emergency situations. The following items are outlined in the Emergency Response Plan (Appendix 3.16C):

- General Information
  - Scope, purpose, site owner and location, BESS product
  - Emergency, first responder, and incident management team contact information
- Energy storage system information
  - Site overview
  - Energy storage system site design
- Glossary of terms
  - Battery management system/energy management system
  - Critical temperatures, cell, module, EnerC+ battery container, battery string, and other terms

- Battery management system
- Fire detection and suppression
  - Fire alarm control panel, fire detection, alarm annunciation, apparatus access, and water supply
- Hazards
  - Chemical, electrical, and explosion hazards
- Notifications
  - Notification flow
- Command and control
  - Subject matter expert
  - Unified and incident command structure
- Response tactics
  - Personal protective equipment (PPE)
  - On arrival, initial status briefing, size up, and response scenarios
- Post incident operations
  - PPE
  - Under control and lock out/tag out
- Training and familiarization tours
- Revision sheet

Construction Safety Programs

Motor Vehicle and Heavy Equipment Safety Program

- Operation and maintenance of vehicles
- Inspection
- PPE
- Training

Forklift Operation Program

- Trained and certified operators
- Fueling operations
- Safe operating parameters
- Training

Excavation/Trenching Program

- Shoring, sloping, and benching requirements
- Cal/OSHA permit requirements
- Inspection
- Access and egress

Fall Protection Program

- Evaluation of fall hazards
- Protective devices
- Training

Scaffolding/Ladder Safety Program

- Inspection of equipment
- Load ratings
- Safe operating parameters
- Operator training

Crane and Material Handling Program

- Certified and licensed operators
- Inspection of equipment
- Load ratings
- Safe operating parameters
- Training

Hazardous Waste Program

- Evaluation of hazards
- Training
- Air monitoring
- Medical surveillance
- Health and Safety Plan preparation
- Documentation procedures

Hot Work Safety Program

- Welding and cutting procedures
- Acetylene and fuel gas safety procedures
- Fire watch
- Hot work permit
- PPE
- Training
- Documentation procedures

Employee Exposure Monitoring Program

- Exposure evaluation
- Monitoring requirements

- Reporting results
- Medical surveillance
- Training
- Documentation procedures
- Protection from wildfire smoke
  - Monitoring forecast and current air quality index for fine particulate matter ($PM_{2.5}$) of 151 or greater when there is exposure to wildfire smoke
  - Communication
  - Training
  - Controls (e.g., providing enclosed buildings, structures, or vehicles where the air is filtered; changing work schedules/reducing work intensity; respiratory protective equipment)

Electrical Safety Program

- Grounding procedures
- Overhead and underground utilities
- Utility clearance
- Assured Grounding Program/ground fault circuit interrupters
- Training
- Documentation procedures

Lock-Out/Tag-Out (LO/TO) Program

- Allocation of devices (e.g., locks, tags, and adaptors)
- Lock-out/tag-out (LO/TO) sequencing
- Types/magnitudes of energy
- Types/locations of machines
- Verification
- Training
- Documentation procedures

Permit-Required Confined-Space Entry Program

- Air monitoring and ventilation requirements
- Rescue procedures
- LO/TO and blocking, blinding, and blanking requirements
- Permit completion
- Training
- Documentation procedures

Hand and Portable Power Tool Safety Program

- Guarding and proper operation
- Training

Powder-Actuated Tool Safety Program

- Operator qualifications
- Inspection requirements
- Repair requirements
- Storage requirements
- Training

Housekeeping and Material Handling and Storage Program

- Storage requirements
- Walkways and work surfaces
- Equipment handling requirements
- Training

Hearing Conservation Program

- Identifying high-noise environments
- Exposure monitoring
- Medical surveillance requirements
- Hearing-protective devices
- Training

Back Injury Prevention Program

- Proper lifting and material handling procedures
- Training

Hazard Communication Program

- Labeling requirements
- Storage and handling
- Safety data sheets
- Chemical inventory
- Training
- Documentation procedures

Respiratory Protection Program

- Selection and use
- Storage
- Fit testing
- Medical requirements
- Inspection and repair
- Training
- Documentation procedures

Heat and Cold Stress Monitoring and Control Program, including Heat Illness Prevention Plan (Outdoor/Indoor)

- Prevention and control (e.g., clean drinking water, access to shade or cool-down areas, cool-down periods)
- High-heat procedures
- Monitoring (i.e., measure temperatures and heat index and maintain records)
- Emergency response procedures
- Acclimatization for new workers during a 14-day period and all workers during a heat wave
- Training
- Establish, implement, and maintain a written Outdoor Heat Illness Prevention Plan that includes procedures for providing drinking water, shade, preventive rest periods, close observation during acclimatization, high-heat procedures, training, and prompt emergency response
- Establish, implement, and maintain a written Indoor Heat Illness Prevention Plan that includes procedures for providing drinking water, cool-down areas, rest periods, close observation during acclimatization, assessment and measurement of heat, training, prompt emergency response, and feasible control measures

3.17.2.3.2 Operations Health and Safety Program

Upon completion of construction and commencement of operations, the construction Health and Safety Plan would transition into an operation-oriented program reflecting the hazards and controls during operation. The following outline sets forth the topics that would be included in the Operations Health and Safety Program.

Injury and Illness Prevention Program

- Personnel with the responsibility and authority to implement the program
- Safety and health policies
- Work rules and safe work practices
- System for ensuring that employees comply with safe work practices
- Employee communications
- Identification and evaluation of workplace hazards
- Methods and/or procedures for correcting unsafe or unhealthy conditions, work practices, and work procedures in a timely manner based on the severity of the hazards
- Specific safety procedures (see Operations Health and Safety Program, below)

First Aid, CPR, and Automated External Defibrillator

- General requirements
- Written program
- Training
- Maintenance
- Documentation

Fire Protection and Prevention Program

- General requirements
- Fire hazard inventory, including ignition sources and mitigation
- Housekeeping and proper materials storage
- Employee alarm/communication system
- Portable fire extinguishers
- Fixed firefighting equipment
- Fire control
- Flammable and combustible liquid storage
- Use of flammable and combustible liquids
- Dispensing and disposal of liquids
- Training
- Personnel to contact for information on program contents

Vegetation Management

The project site and surrounding areas are primarily used for fruit orchards and other agricultural activities and appear to be well-established. The ground cover in the BESS area consists mainly of annual weeds and non-native grasses. Ground cover in the gen-tie line varies and includes sections with shrubby vegetation. The BESS area being developed on the project site would be cleared, graded, and covered in a noncombustible, compacted road base. All battery components for the BESS would be installed on concrete pads or pilings. Routine vegetation management would be conducted around and between BESS containers and access roads to prevent the buildup of biomass, thereby minimizing the potential for fire ignition, spread, and intensity within the facility.

In accordance with the North American Electric Reliability Corporation (NERC) transmission vegetation management standards and California Fire Code (CFC) requirements, the gen-tie line and its associated right-of-way would involve construction of a graded and compacted roadway, along with vegetation management where vegetation is cleared to maintain a safe distance between the gen-tie line and surrounding vegetation. Within the right-of-way, vegetation management would include vertical and horizontal maintenance, as well as removal of dead and dying materials. Gen-tie lines are typically located within an area called a “right-of-way,” which is an area of land the applicant does not own but that the applicant has been granted the right to use for installing, repairing, operating, and maintaining transmission lines. Generally, vegetation management does not occur in the right-of-way; however, sometimes trees may be identified that have the potential to grow or fall into the lines.

The proposed project would maintain the BESS facility free of combustible vegetation to support fire prevention and ensure defensible space in accordance with local regulations. This exceeds the minimum 10-foot clearance requirement around BESS enclosures outlined in CFC Section 1207.5.7. In compliance with California Public Resources Code Sections 4292 and 4293, a minimum 10-foot vegetation clearance would also be maintained around all power poles, towers, and transmission lines associated with the project. Vegetation located near the Green Valley Substation and the transmission poles, which are located close to areas with tree cover, would follow applicable vegetation clearance mandates, such as California Public Utilities Commission General Order 95, Rule 35, and California Public Resources Codes 4292 and 4293.

Vegetation management would be completed before any combustible materials are brought onto the site, and such activities would continue throughout all phases of the project. When properly implemented and enforced under County of Santa Cruz (County) and state guidelines, these vegetation management practices would help reduce fire risk by thinning or removing flammable vegetation. Where needed, such as in the area near the Green Valley Substation and below the overhead portion of the gen-tie route, required vegetation clearance would be conducted prior to development of the project. It is not anticipated that there would be any vegetation clearance issues related to the underground portion of the gen-tie route transmission lines; however, vegetation clearance may need to be performed and maintained for PG&E transmission poles for the overhead portion of the gen-tie route.

See Section 3.16, Wildfire, for additional information regarding wildfire safety and management.

On-Site Fuel Handling System and Management

During operations, the project would use several hazardous materials, including lithium-ion batteries, gasoline, diesel fuel, mineral oil, coolants, and sulfuric acid (H_2SO_4). The following materials would be stored and managed in accordance with applicable safety regulations and best practices to minimize environmental and health risks:

- Lithium-ion batteries would be housed within prefabricated BESS enclosures equipped with monitoring systems.
- Mineral oil, used for cooling and insulation, would be sealed within the transformers.
- Coolants would be used in battery packs to maintain optimal operating temperatures.
- Sulfuric acid, estimated at approximately 1,355 pounds, would be stored securely within the control house.
- Gasoline, diesel, and lubricants would be stored in temporary stationary tanks with secondary containment, located either in the construction laydown area or near the operations and maintenance building.

The following would be undertaken to prevent spills and ensure safe handling:

- Refueling operations would use drip trays beneath nozzles to capture any leakage.
- Fuel tanks would either have a double wall or would be placed within temporary containment skid or lined earthen berms for spill containment.
- Spill kits would be maintained on site for immediate response to any spills occurring outside containment areas.
- All operations personnel would receive training from a qualified employee on proper refueling procedures and spill response.
- Routine audits and maintenance checks would be conducted to reduce the risk of leaks or spills.

A designated hazardous waste storage location would be finalized during the design phase. This area would include secondary containment and would comply with the requirements of the Hazardous Materials Business Plan and spill prevention, control, and countermeasure regulations.

The project is anticipated to require a Spill Prevention, Control, and Countermeasure Plan during construction, operation, and decommissioning because it is anticipated to have aggregate aboveground oil storage greater than 1,320 gallons (in individual containers of 55 gallons or larger). This plan would comply with Environmental Protection Agency regulations under the Code of Federal Regulations (CFR) (40 CFR Part 112) and include detailed procedures for the following:

- Oil storage and secondary containment
- Site drainage and inspection protocols
- Testing and recordkeeping
- Employee training and emergency response
- Security measures and spill reporting

Additional information regarding hazardous materials can be found in Section 3.5, Hazardous Materials Handling.

BESS Enclosures and Transformers

Operational incidents involving BESS enclosures and transformers would be covered under the project's Emergency Response Plan, HMA, and trainings to address potential incidents and responses.

On-Site Fire Protection Systems and Management

Each battery enclosure would be equipped with a fire suppression system that includes remote monitoring and would comply with all relevant standards, including Underwriters Laboratories (UL) 9540A, UL 1973, UL 1741, UL 9540, Institute of Electrical and Electronics Engineers (IEEE) C2, National Fire Protection Association (NFPA) 550, NFPA 855, the International Fire Code, and the CFC.

There would be one on-site control enclosure for the SCADA system that would allow for off-site monitoring (Appendix 3.16C). The City of Watsonville completed a study to evaluate the feasibility of connecting the project to its municipal water system for fire suppression. The study found that the local fire department confirmed that 2,000 gallons per minute would be required. The BESS project would connect to the City of Watsonville's water system and is planning on using the two fire hydrants that are currently on site (see Figure 2-1, Project Site Plan).

Site-specific fire protection systems would be addressed in the project's Emergency Response Plan and HMA documents.

Emergency Response Action Program/Plan

The following is provided in the Emergency Response Plan (Appendix 3.16C):

- General information
  - Scope, purpose, site owner and location, BESS product
  - Emergency, first responder, and incident management team contact information

- Energy storage system information
  - Site overview
  - Energy storage system site design
- Glossary of terms
  - Battery management system/energy management system
  - Critical temperatures, cell, module, EnerC+ battery container, battery string, and other terms
- Battery management system
- Fire detection and suppression
  - Fire alarm control panel, fire detection, alarm announcement, apparatus access, and water supply
- Hazards
  - Chemical, electrical, and explosion hazards
- Notifications
  - Notification flow
- Command and control
  - Subject matter expert
  - Unified and incident command structure
- Response tactics
  - PPE
  - On arrival, initial status briefing, size up, and response scenarios
- Post incident operations
  - PPE
  - Under control and LO/TO
- Training and familiarization tours
- Revision sheet

Personal Protective Equipment Program

- Hazard analysis and prescription of PPE
- Personal protective devices
- Head protection
- Eye and face protection
- Body protection
- Hand protection
- Foot protection
- Skin protection
- Sanitation
- Safety belts and lifelines for fall protection
- Protection for electrical shock
- Medical services and first aid/blood-borne pathogens

- Respiratory protective equipment
- Hearing protection
- Life safety
- Training

Operations Health and Safety Program

Motor Vehicle and Heavy Equipment Safety Program

- Operation and maintenance of vehicles
- Inspections
- PPE
- Training

Forklift Operation Program

- Trained and certified operators
- Fueling operations
- Safe operating parameters
- Training

Excavation/Trenching Program

- Shoring, sloping, and benching requirements
- Cal/OSHA permit requirements
- Inspections
- Air monitoring
- Access and egress
- Documentation procedures

Fall Protection Program

- Evaluation of fall hazards
- Protection devices
- Training

Scaffolding/Ladder Safety Program

- Construction and inspection of equipment
- Proper use
- Training

Articulating Boom Platforms Program

- Inspecting equipment
- Load ratings
- Safe operating parameters
- Operator training

Hot Work Safety Program

- Welding and cutting procedures
- Acetylene and fuel gas safety
- Fire watch
- Hot-work permit
- PPE
- Training
- Documentation procedures

Workplace Ergonomics Program

- Identification of personnel at risk
- Evaluation of personnel
- Workplace and job activity modifications
- Training
- Documentation procedures

Employee Exposure Monitoring Program

- Exposure evaluation
- Monitoring requirements
- Reporting results
- Medical surveillance
- Training
- Electrical Safety Program
- Grounding procedure
- Overhead and underground utilities
- Utility clearance
- Training
- High-voltage switching
- Documentation procedures
- Protection from wildfire smoke

- Monitoring forecast and current air quality index for fine particulate matter ($PM_{2.5}$) of 151 or greater when there is exposure to wildfire smoke
- Communication
- Training
- Controls (e.g., providing enclosed buildings, structures, or vehicles where the air is filtered; changing work schedules/reducing work intensity; respiratory protective equipment)

Lock-Out/Tag-Out Program

- Allocation of LO/TO devices (e.g., locks, tags, and adaptors)
- Machine-specific LO/TO procedures
- Steps for verification of isolation
- Training (Affected and Authorized and Interaction with Energized Electrics)
- Annual program review

Permit-Required Confined-Space Entry Program

- Air monitoring and ventilation requirements
- Rescue procedures
- LO/TO and blocking, blinding, and blanking requirements
- Permit completion
- Training
- Documentation procedures

Hand and Portable Power Tool Safety Program

- Guarding and proper operation
- Training

Housekeeping and Material Handling and Storage Program

- Storage requirements
- Walkways and work surfaces
- Equipment handling requirements
- Training
- Documentation procedures
- Hazardous material reporting and documentation

Hearing Conservation Program

- Identifying high-noise environments
- Exposure monitoring
- Medical surveillance requirements

- Hearing-protective devices
- Training
- Documentation procedures

Back Injury Prevention Program

- Proper lifting and material handling procedures
- Training

Hazard Communication Program

- Labeling requirements
- Storage and handling
- Safety data sheets
- Chemical inventory
- Training
- Documentation procedures

Respiratory Protection Program

- Selection and use
- Storage
- Fit testing
- Medical requirements
- Inspection and repair
- Training
- Documentation procedures

Heat and Cold Stress Monitoring and Control Program, including Heat Illness Prevention Plan (Outdoor/Indoor)

- Prevention and control (e.g., clean drinking water, access to shade or cool-down areas, cool-down periods)
- High-heat procedures
- Monitoring (i.e., measure temperatures and heat index and maintain records)
- Emergency response procedures
- Acclimatization for new workers during a 14-day period, and all workers during a heat wave
- Training
- Establish, implement, and maintain a written Outdoor Heat Illness Prevention Plan that includes procedures for providing drinking water, shade, rest periods, close observation during acclimatization, high-heat procedures, training, and prompt emergency response
- Establish, implement, and maintain a written Indoor Heat Illness Prevention Plan that includes procedures for providing drinking water, cool-down areas, rest periods, close observation during acclimatization,

assessment and measurement of heat, training, prompt emergency response, and feasible control measures

Safe Driving Program

- Inspection and maintenance of vehicles
- Training

3.17.2.3.3 Safety Training

To ensure that employees recognize and understand how to protect themselves from potential hazards, comprehensive training programs for construction and operation would be implemented, as indicated in Tables 3.17-3 and 3.17-4. Each of the safety procedures developed to control and mitigate potential site hazards would require some form of training. Training would be delivered in a variety of ways depending on the requirements of Cal/OSHA standards, the complexity of the topic, the characteristics of the workforce, and the degree of risk associated with each of the identified hazards. Tables 3.17-3 and 3.17-4 summarize the safety training programs that would be provided to construction and operations personnel, respectively.

Table 3.17-3. Construction Training Program

Training Course	Target Employees
Injury and Illness Prevention Training	All
Emergency Response Action Program/Plan	All
Personal Protective Equipment Training	All
Motor Vehicle and Heavy Equipment Safety Training	Employees working on, near, or with heavy equipment or vehicles
Forklift Operation Training	Employees operating forklifts
Excavation/Trenching Safety Training	Employees involved with trenching or excavating
Fall Protection Training	Employees working at heights greater than 6 feet and required to use fall protection
Scaffolding/Ladder Safety Training	Employees required to erect or use scaffolding
Crane Safety Training	Employees supervising or performing crane operations
Fire Protection and Prevention Training	Employees responsible for handling and storing flammable or combustible liquids or gases
Hazard Communication Training	Employees handling or working with hazardous materials
Hazardous Waste	Employees handling or excavating hazardous waste
Hot Work Safety Training	Employees performing hot work
Electrical Safety Training	Employees performing lock-out/tag-out (LO/TO) or working on systems that require LO/TO activities
	Employees required to work on electrical systems and equipment, or use electrical equipment and cords
Permit-Required Confined-Space Entry Training	Employees required to supervise or perform confined-space entry activities
Hand and Portable Power Tool Safety Training	Employees operating hand or portable power tools
Powder-Actuated Tool Safety Training	Employees operating powder-actuated tools
Heat Stress and Cold Stress Safety Training	Employees who will be exposed to temperature extremes
Hearing Conservation Training	All

Table 3.17-3. Construction Training Program

Training Course	Target Employees
Back Injury Prevention Training	All
Safe Driving Training	Employees supervising or driving motor vehicles
Respiratory Protection Training	All employees required to wear respiratory protection
Fire Protection and Prevention Training	All
First Aid, CPR, and Automated External Defibrillator	All
Worker Exposure Awareness Training	All
Worker Environmental Awareness Training	All

Table 3.17-4. Operations Training Program

Training Course	Target Employees
Injury and Illness Prevention Training	All
Emergency Action Plan	All
Personal Protective Equipment Training	All
Excavation/Trenching Safety training	Employees involved with trenching or excavating
Scaffolding/Ladder Safety Training	Employees required to erect or use scaffolding
Fall Protection Training	Employees required to use fall protection
Forklift Operator Training	Employees operating forklifts
Crane Safety Training	Employees supervising or performing crane operations
Workplace Ergonomics	Employees performing repetitive activities
Fire Protection and Prevention Training	Employees responsible for handling and storing batteries or flammable or combustible liquids or gasses
Hot Work Safety Training	Employees performing hot work
Electrical Safety Training	Employees performing lock-out/tag-out or required to work on electrical systems and equipment
Permit-Required Confined-Space Entry	Employees required to supervise or perform confined-space entry
Hand and Portable Power Tool Safety Training	Employees operating hand and portable power tools
Heat Stress and Cold Stress Safety Training	Employees exposed to temperature extremes
Hearing Conservation Training	All
Back Injury Prevention Training	All
Safe Driving Training	Employees supervising or driving motor vehicles
Hazard Communication Training	Employees handling or working around hazardous materials
Respiratory Protection Program	All employees required to wear respiratory protection
Fire Protection and Prevention Training	All
First Aid, CPR, and Automated External Defibrillator	All
Worker Exposure Awareness Training	All
Worker Environmental Awareness Training	All

3.17.2.4 Fire Protection

Fire protection at the site would involve facilities designed in compliance with the CFC. The BESS would consist of NFPA 855 Standard compliance and UL certified systems. These systems would include built-in failsafe and cooling systems designed to prevent thermal runaway and engineered to limit the spread of fire. Each BESS enclosure would be NFPA 855, NFPA 68, NFPA 69, NFPA 70, and NFPA 72 compliant. Each BESS enclosure would be equipped with an automatic fire alarm and linkage control system, an explosion relief system, a combustible gas detection and alarm system, and an exhaust system. If any abnormality is detected, the battery system controller would connect to a local controller via ethernet for alarm signaling, control of the battery container shutdown, and control of the system for corresponding logistic control. Additional details regarding the proposed remote monitoring capabilities of the facility are included below.

Two fire hydrants would be located on site that would be connected to the City of Watsonville's water supply. The project's water supply would meet CFC requirements and is intended for extinguishing vegetation, vehicle, or ancillary equipment fires. On-site water for firefighting would not be used to extinguish a fire located within a BESS container or in energized equipment. In the unlikely event of a fire within a BESS container or in energized equipment, water would be used for cooling the adjacent BESS containers, provide asset protection, and prevent fire from spreading outside of the affected equipment.

Based on an evaluation of the proposed project and the fire environment at the project site, the following elements would be incorporated into the project to address fire protection:

- Be compliant with 2025 CFC Section 1207, Electrical Energy Storage Systems.
- Site access for fire apparatus would comply with CFC Section 503. The primary entrance to the facility would be via Minto Road, with a 20-foot-wide gravel access road extending through the center and along the northern perimeter of the site.
- Fuel modification zone for vegetation would be maintained around outside perimeter of fence.
- Hydrants would be spaced approximately 300 feet apart throughout the BESS facility.
- A secondary emergency access would be provided to the site via a 20-foot-wide gravel, all-weather access road. Three options are being considered for the secondary emergency access road, which would extend on-site access to the south, along the project's south/southeastern boundaries. Options 1 and 2 would go through a County-owned property (Assessor's Parcel Number 051-101-59) to the south along two different alignments to connect to Grimmer Road. Option 1 would extend through undeveloped land and a parking area to connect to Grimmer Road that serves the County's parcel. Option 2 would extend from the project site through an existing parking area on the County's parcel to extend to Grimmer Road. Option 3 would extend southwest within Assessor's Parcel Number 051-101-78, cross into the southern adjoining parcel (Assessor's Parcel Number 051-101-53), continue southeast before turning west, then continue southeast and terminate where the Grimmer Road public right-of-way starts.

Fire Water Storage and Flow Rates

The Pajaro Valley Fire Protection District has requested the project have two fire hydrants, each with a flow of 1,000 gallons per minute. The project's water supply would connect to the City of Watsonville's existing water distribution system, including piping upgrades, to provide service to two on-site fire hydrants.

Hazard Mitigation Analysis and Emergency Response Plan

Fire & Risk Alliance prepared an HMA for the project in accordance with the CFC to evaluate the potential consequences associated with BESS equipment failure. The HMA confirmed that the EnerC+ system and BESS site design can meet CFC requirements for remote outdoor installations when installed per manufacturer specifications and approved plans. Additionally, the HMA confirmed that the BESS meets all performance criteria under CFC Section 1207.1.4.2. Because the project is still under development, the accuracy of the findings in the HMA are subject to change if there are site changes. Final compliance measures are outlined in the HMA (Appendix 3.16B).

An Emergency Response Plan, consistent with Senate Bill 38, was prepared in coordination with local public safety agencies and would be implemented during project operations. The HMA (Appendix 3.16B) and Emergency Response Plan (Appendix 3.16C) are included as part of this application.

The project site falls under Local Responsibility Area lands, with fire protection primarily provided by the Pajaro Valley Fire Protection District. Due to overlapping service boundaries, Watsonville Fire Station 2—located 2.6 miles away—is expected to be the first responder, with an estimated travel time of approximately 5 minutes (PVFPD 2021, 2023). Pajaro Valley Station 45, 4.2 miles away, is the next closest. Response times were estimated using NFPA and ISO standards. The County of Santa Cruz does not have formal response time requirements. For more information regarding response times, refer to Section 3.16, Wildfire.

Remote Monitoring Capabilities

To enhance safety and response effectiveness during an incident involving the BESS, a remote monitoring framework would supplement the monitoring and maintenance conducted by on-site staff. This framework would include a dedicated Remote Operation Center, Incident Command Center Support, integrated battery management system, advanced fire alarm control panels, fire detection, and alarm annunciation, all designed to support the incident commander and local first response agencies. These are described in Table 3.17-5.

Table 3.17-5. Project Remote Monitoring Framework

Remote Monitoring Capability	Description
Remote Operation Center	The Remote Operations Center would be established prior to system commissioning. The Remote Operations Center would provide continuous remote monitoring and control of the battery energy storage system (BESS) performance, alarms, and safety systems, in accordance with manufacturer and owner/operator protocols.
Incident Command Center Support	In the unlikely event of an incident, the Remote Operation Center would collaborate with the local BESS subject matter expert (SME) to assist fire service chief officers in conducting a comprehensive “Scene Size-Up.” This process enables responders to better understand the nature and extent of the hazards and to develop appropriate response strategies. Operating within the Unified Command Structure, the SME would work alongside fire service personnel to help bring the incident under control. The SME would ensure the site is secure and oversee access for authorized personnel, ensure authorized personnel have appropriate PPE according to their assigned role or task, notify chief officer of fire services if the conditions of plume(s) have impacted residential or commercial areas neighboring the BESS to support decision making regarding seal in place or evacuation orders, review and interpret battery management system data, locate and isolate trouble equipment, establish 100-foot exclusion zone around the trouble battery cabinet, review the fire alarm control panel (FACP) to identify the presence of hydrogen gas alarms, identify internal exposures where

Table 3.17-5. Project Remote Monitoring Framework

Remote Monitoring Capability	Description
	protection may be needed, monitor post-incident operations as conditions stabilize, and administrate the Decommissioning Plan.
Integrated System Management Unit	The EnerC+ is IP55 rated and has an integrated battery management system in each compartment that monitors and controls key parameters, such as charging, discharging, temperature, fault detection, equipment isolation, and other factors that affect the condition of the individual cells within a battery module. The system helps maintain battery health and capacity. The battery management system is integrated with fire alarm control panels to enable rapid response when fire-related alerts are triggered. The system plays a critical role in rapid response to system emergencies, including cell venting and thermal runaway. The battery management system enables isolation of trouble modules or strings as necessary to ensure containment during failure events. The system exists at the module, rack, and system levels for layered control and protection.
Explosion Control System	The EnerC+ BESS container includes an explosion-control system designed by CATL to meet NFPA 69 standards for explosion prevention. The system reduces combustible gas concentration using hydrogen-calibrated gas detectors, an explosion-proof exhaust fan (820 CFM), and a make-up air louver to ensure early detection and rapid mitigation of flammable gas hazards within the container. The explosion control system was reviewed by TLB Fire Protection Engineering and determined to be in compliance with NFPA 69.
Fire Alarm Control Panel	Each individual EnerC+ container is equipped with an addressable intelligent FACP model Potter ARC-100. This panel includes a notification appliance circuit module that can activate local visual and audible alert devices. Alarms received by the FACP are transmitted to the central station.
Fire Detection	Smoke Detection: Each EnerC+ container contains three photoelectric smoke detectors. Two detectors are located in the battery compartment and one is in the electrical compartment. When smoke is detected, the FACP would receive the signal and communicate the alert to the Remote Operations Center via the Supervisory Control and Data Acquisition (SCADA) system. The battery management system would then initiate isolation procedures for the affected container. Heat Detection: Each EnerC+ container would include two heat detectors located within the battery compartment. When a heat alarm is triggered, the signal is received by the FACP, which then communicates the alert to the Remote Operations Center via the SCADA system. The battery management system subsequently initiates isolation of the affected container. Hydrogen Gas Detection: Each EnerC+ container would be equipped with two hydrogen gas detectors designed to detect concentrations at 10% of the lower flammability limit. Upon detection, an alarm is triggered at the FACP, which activates the NFPA 69-compliant explosion prevention system to maintain hydrogen levels below 25% of the lower flammability limit. The FACP then communicates the alert to the Remote Operations Center via the SCADA system, prompting the battery management system to isolate the affected container. The fire detection and alarm systems installed in the facility would comply with the NFPA 72 National Fire Alarm and Signaling Code.
Alarm Annunciation	Audible and visual alarms would be generated by alarms received at the FACP. Audible and visual alarms would be located on the exterior of the battery container to alert BESS staff and first responders to the location of the trouble equipment.

The proposed remote monitoring capabilities—encompassing a 24/7 Remote Operation Center, incident command, fire alarm control panels, and advanced fire detection and alarm annunciation systems—would significantly enhance the ability of incident commanders and first responders to manage BESS enclosure incidents efficiently and safely.

There would be a unified command structure for BESS emergencies so that incidents are not managed by one individual Incident Commander but would include other teams to mitigate risk and ensure safety of first responders. The initial response team would include the Pajaro District Fire Department, System Owner BESS subject matter expert, and the Watsonville Police Department (Appendix 3.16C).

3.17.2.4.1 Pajaro Valley Fire Protection District Requirements

In conjunction with the Santa Cruz County Fire Marshals office, the Pajaro Valley Fire Protection District would provide fire protection planning services for the BESS. Ordinance No. 2025-15 of the Pajaro Valley Fire Protection District Fire Code adopts the 2025 edition of the CFC, which governs plan review, inspections, and permitting under state-adopted regulations (PVFPD 2025). The project design incorporates measures to comply with Chapter 7.92 of the Santa Cruz County Code for minimum separation and setback distances, primarily guided by NFPA 855 (Standard for the Installation of Stationary Energy Storage Systems). NFPA 855 addresses fire and explosion risks in energy storage facilities, including BESS installations. The project would ensure compliance through fire-resistant enclosures equipped with safety features, including smoke/fire detection sensors, ground fault detection, alarms, and electrical contact disconnection. Containers would be spaced to prevent fire propagation, aligning with NFPA 855 and Santa Cruz County Fire guidelines. Although the Pajaro Valley Fire Protection District and Santa Cruz County Fire Code adopt a limited scope of standards for BESS enclosures, NFPA 855 provides detailed guidance for larger installations, such as this project. According to Senate Bill 283, the Clean Energy Safety Act of 2025, the BESS would be required to work with the local fire department for reviews and inspections throughout construction and operations of the facility. If the local fire department chooses not to oversee the project, a safety inspection must be completed by the State Fire Marshal prior to commencement of the facility's operations.

Separation Distances within BESS Enclosure Groupings

NFPA 855 Section 15.3.1 specifies required distances between BESS enclosures within BESS groupings (e.g., clusters of BESS enclosures) designed to prevent thermal runaway propagation by maintaining minimum separation distances. The standard states that individual BESS enclosures should be separated by at least 3 feet in all directions, including along walls and between opposing units, unless manufacturer documentation from large-scale fire testing (e.g., UL 9540A tests) shows a lack of propagation between units and the authority having jurisdiction approves the reduced spacing (NFPA 2023). The UL 9540A fire testing and the hazard mitigation analysis guide safe spacing between battery containers to prevent fire spread. However, in extreme wind conditions, nearby containers should be reassessed to determine if additional protective measures are needed (Appendix 3.16C).

Battery blocks would be spaced 10 feet apart from one another and 3 feet between BESS units. There would be room for an additional 21 battery blocks for future augmentation, for a total of 266 planned BESS containers on site.

Separation Distances Between Adjacent BESS Groupings

NFPA 855 specifies a minimum of 3 feet separation in all directions (horizontal and vertical, where applicable) between adjacent BESS groupings. Spacing is calculated from the outer edges of BESS enclosures. Compliance is

verified through site plans submitted to the authority having jurisdiction, requiring no computational methods beyond geometric measurements.

Setback Distances to Nearest Exposures

Although the Pajaro Valley Fire Protection District and Santa Cruz County Fire Code do not explicitly specify setback distances for the project, the County's draft ordinance for energy storage facilities includes a proposed requirement, as follows (County of Santa Cruz 2025; PVFPD 2025):

- Energy storage systems should be set back at least 100 feet from all roadways and property lines, with the exception of substations that require no setbacks.

NFPA 855 states that minimum setback distances to exposures (e.g., buildings, vegetation, openings, or hazardous materials) are as follows:

- 10 feet minimum from lot lines, public ways, buildings, stored combustible materials, and hazardous materials.
- 10 feet from vegetation to reduce wildfire ignition risks.
- 3 feet from doors; windows; operable openings; heating, ventilation, and air conditioning inlets; and penetrations into habitable spaces.

3.17.2.5 Water Quality

3.17.2.5.1 Construction and Decommissioning

During construction and decommissioning, water would be required for common construction-related purposes, including dust suppression, soil compaction, and grading. See Section 3.15, Water Resources, for more information.

3.17.2.5.2 Operations

During operations, an existing groundwater well would provide water for washroom and sanitary facilities associated with the on-site operations and maintenance building. Water quality testing would be conducted prior to occupancy. Drinking water would be provided via portable water coolers.

3.17.3 Laws, Ordinances, Regulations, and Standards

Construction, operation, and decommissioning of the project would be conducted in accordance with all applicable LORS. Table 3.17-6 summarizes the federal, state, and local LORS relating to worker health and safety. Table 3.17-6 also provides a summary of the applicable national consensus standards.

Table 3.17-6. Laws, Ordinances, Regulations, and Standards

LORS	Applicability	Administering Agency	Project Conformity	Opt-In Application Reference
Federal				
Title 29 Code of Federal Regulations Part 1910	Contains the minimum occupational safety and health standards for general industry in the United States.	OSHA	The project would implement procedures that would follow OSHA standards during construction and operation. Health and safety training and personal protective equipment (PPE) would be provided for all employees.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
Title 29 Code of Federal Regulations Part 1926	Contains the minimum occupational safety and health standards for construction industry in the United States.	OSHA	The project would implement procedures that would follow OSHA standards during construction and operation. Health and safety training and PPE would be provided for all employees.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
State*				
California Occupational Safety and Health Act, 1970 (Title 8 CCR)	Establishes minimum safety and health standards for construction and general industry operations in California.	Cal/OSHA	The project would implement health and safety programs. Training would be provided to construction workers prior to construction and to operations employees prior to operation.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
California Senate Bill 38 (CA SB 38)	Requires BESS facilities in California to develop and maintain emergency response and emergency action plans.	California Public Utilities Commission	The project developed and would maintain an emergency response and action plan.	Appendix 3.16C, Draft Emergency Response Plan
Senate Bill 283 – Clean Energy Safety Act of 2025	Operation and maybe commissioning/ decommissioning of BESS facilities.	California Legislature	New BESS facilities must meet NFPA 855 standards and ensure there is a local fire authority consultation and inspection at various stages of project construction and operation. A facility must also complete a safety inspection by local fire officials or by the State Fire Marshal if the local jurisdiction defers its authority prior to operation of project.	Sections 3.16, 3.17.2.3.2, 3.17.2.4, and 3.17.2.4.1

Table 3.17-6. Laws, Ordinances, Regulations, and Standards

LORS	Applicability	Administering Agency	Project Conformity	Opt-In Application Reference
8 CCR 339	Lists hazardous substances requiring special handling and communication.	Cal/OSHA	Training would be provided under the Hazard Communication Program and Hazardous Waste Program.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
8 CCR 1509	Requires a written safety program for construction sites.	Cal/OSHA	The project would implement health and safety programs, and training would be provided to construction workers prior to construction and to operations employees prior to operation. Specifically, the Injury and Illness Prevention Program (IIPP) would address the requirement.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
8 CCR 1528, et seq., and 3380, et seq.	Covers PPE requirements and general safety for construction workers.	Cal/OSHA	Training on the PPE Program would be provided to construction workers prior to construction and operations employees prior to operation.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
8 CCR 1597, et seq., and 1590, et seq.	Governs equipment and operation of vehicles used exclusively on construction sites. Outlines safety requirements for private roadways and earthmoving operations on construction sites.	Cal/OSHA	All construction workers and operation employees would be trained on the Safe Driving Program. Construction workers and operations employees working on, near, or with heavy equipment would also be trained on the Motor Vehicle and Heavy Equipment Safety Program.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
8 CCR 1604, et seq.	Governs the design, installation, operation, inspection, and maintenance of personnel hoists used during construction, alteration, or demolition of buildings and structures.	Cal/OSHA	Construction workers responsible for the oversight or conduct of hoisting and rigging would be trained on Fall Protection, Scaffolding/Ladder Safety, and Crane Safety Programs prior to project construction.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
8 CCR 1620, et seq., and 1723, et seq.	Addresses scaffolding safety standards. Includes fall protection requirements.	Cal/OSHA	Construction workers responsible for the oversight or conduct of hoisting and rigging would be trained on Fall Protection,	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4

Table 3.17-6. Laws, Ordinances, Regulations, and Standards

LORS	Applicability	Administering Agency	Project Conformity	Opt-In Application Reference
			Scaffolding/Ladder Safety, and Crane Safety Programs prior to project construction.	
8 CCR 1709, et seq.	Covers concrete and masonry construction safety.	Cal/OSHA	Project design would comply with requirements for steel reinforcing, concrete pouring, and structural steel erection operations. Detailed structural engineering drawings of the proposed seismic anchoring that are prepared, reviewed, and approved by a licensed structural engineer would be provided to the California Energy Commission (CEC) during the plan check process. Preliminary structural engineering drawings are included in this application.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
8 CCR 1920, et seq.	Requirements for fire protection systems.	Cal/OSHA	Project design would incorporate requirements for fire protection systems. Training on the Fire Protection and Prevention Program would be provided to construction workers prior to construction and to operations employees prior to operation.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
8 CCR 2300, et seq., and 2320, et seq.	Addresses general electrical safety orders—cover installation, maintenance, and protection of electrical systems.	Cal/OSHA	Training on the Electrical Safety Program would be provided to construction workers and operations employees required to work on electrical systems and equipment.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
8 CCR 2395, et seq.	Includes wiring design and protection standards.	Cal/OSHA	Training on the Electrical Safety Program would be provided to construction workers and operations employees required to work on electrical systems and equipment.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
8 CCR 2700, et seq.	Addresses electrical equipment safety, including grounding and circuit protection.	Cal/OSHA	Training on the Electrical Safety Program would be provided to construction workers and operations employees required to work on electrical systems and equipment.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4

Table 3.17-6. Laws, Ordinances, Regulations, and Standards

LORS	Applicability	Administering Agency	Project Conformity	Opt-In Application Reference
8 CCR 3200, et seq.	Covers general workplace safety, including walking surfaces, ventilation, and lighting.	Cal/OSHA	Health and safety training would be provided to operations employees prior to project operation. Specifically, the IIPP would address the requirement.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
8 CCR 3203, et seq.	Requires employers to establish, implement, and maintain a written IIPP that includes responsibility assignment, compliance system, communication system, hazard identification and evaluation, training and instruction, and recordkeeping.	Cal/OSHA	Health and safety training would be provided to operations employees prior to project operation. Specifically, the IIPP would address the requirement.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
8 CCR 3270, et seq., and 3209, et seq.	Addresses emergency exits and egress routes.	Cal/OSHA	Training on Emergency Response Action Program/Plan would be provided to all construction workers prior to construction and to operations employees prior to operation.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
8 CCR 3301, et seq.	Addresses housekeeping and sanitation standards.	Cal/OSHA	Health and safety training would be provided to operations employees prior to project operation. Specifically, the IIPP would address the requirement.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
8 CCR 3360, et seq.	Addresses ergonomics and repetitive motion injuries.	Cal/OSHA	Training on the IIPP and PPE Program would be provided to construction workers prior to construction and to operations employees prior to operation.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
8 CCR 3395	Applies to all outdoor places of employment, such as those in the agriculture, construction, and landscaping industries. For outdoor workplaces, employers must take steps to protect workers from heat	Cal/OSHA	Training on the IIPP would be provided to construction workers prior to construction and to operations employees prior to operation. The project would comply with the regulation and prepare and implement a Heat Illness Prevention Plan.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4

Table 3.17-6. Laws, Ordinances, Regulations, and Standards

LORS	Applicability	Administering Agency	Project Conformity	Opt-In Application Reference
	illness. Some of the requirements include providing water, shade, rest, and training.			
8 CCR 3396	Applies to most indoor workplaces, such as restaurants, warehouses, and manufacturing facilities, where temperatures can get high. For indoor workplaces where the temperature reaches 82°F, employers must take steps to protect workers from heat illness. Some of the requirements include providing water, rest, cool-down areas, methods for cooling down the work area under certain conditions, and training.	Cal/OSHA	Training on the IIPP would be provided to construction workers prior to construction and to operations employees prior to operation. The project would comply with the regulation and prepare and implement a Heat Illness Prevention Plan.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
8 CCR 3511, et seq., and 3555, et seq.	Covers machine guarding and mechanical equipment safety.	Cal/OSHA	Training on the Motor Vehicle and Heavy Equipment Safety Program would be provided to construction workers and operations employees working on, near, or with heavy equipment. Training on the Hand and Portable Power Tool Safety Program would also be provided to all construction workers and operations employees.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
8 CCR 3649, et seq., and 3700, et seq.	Covers powered industrial trucks (e.g., forklifts) and material handling equipment.	Cal/OSHA	Training on the Safe Driving Program and the Forklift Operation Program would be provided to all construction workers prior to construction and operations employees prior to operation.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4

Table 3.17-6. Laws, Ordinances, Regulations, and Standards

LORS	Applicability	Administering Agency	Project Conformity	Opt-In Application Reference
8 CCR 3940, et seq.	Covers safety for compressed gas systems.	Cal/OSHA	Training on the Electrical Safety Program would be provided to construction workers and operations employees required to work on electrical systems and equipment.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
8 CCR 5109, et seq., and 5110, et seq.	Includes emergency medical services and first aid requirements.	Cal/OSHA	Training on the IIPP and First Aid, CPR, and Automated External Defibrillator Program would be provided to construction workers prior to construction and to operations employees prior to operation.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
8 CCR 5139, et seq.	Establishes minimum standards to protect employees from harmful exposure to dusts, fumes, mists, vapors, and gases.	Cal/OSHA	Training on the Respiratory Protection Program would be provided to construction workers and operations employees required to wear respiratory protection.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
Title 8 CCR Section 5141, Valley Fever	Requires employers to prevent harmful exposures to airborne contaminants—including fungal spores that cause Valley Fever (Coccidioidomycosis)—through a hierarchy of controls.	Cal/OSHA	Training on the Respiratory Protection Program would be provided to construction workers and operations employees required to wear respiratory protection. Training on the IIPP would be provided to all construction workers and operations employees. The project would meet requirements for preventing respiratory illness, such as Valley Fever, by implementing construction and operations health and safety programs, respiratory protection programs, and fugitive dust control best management practices.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
Title 8 CCR Section 5141.1, Protection from Wildfire Smoke	Requires employers to determine employee exposure to fine particulate matter ($PM_{2.5}$) for worksites at the start of each shift and periodically thereafter as needed. Employers must implement measures and	Cal/OSHA	The project's Employee Exposure Awareness Program would incorporate air quality and wildfire monitoring requirements and controls.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4

Table 3.17-6. Laws, Ordinances, Regulations, and Standards

LORS	Applicability	Administering Agency	Project Conformity	Opt-In Application Reference
	controls to protect workers when the current Air Quality Index is 151 or greater, including communication systems, training, engineering controls, changes to work schedules or procedures, providing respiratory protection, and other measures.			
8 CCR 5150 et seq.	Addresses ventilation standards for indoor air quality.	Cal/OSHA	Training on the Confined-Space Entry Program would be provided to construction workers and operations employees required to supervise or perform confined-space entry.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
8 CCR 5155 et seq.	Protects workers from harmful exposure to airborne substances.	Cal/OSHA	Training on the Respiratory Protection Program would be provided to construction workers and operations employees required to wear respiratory protection. Training on the IIPP would be provided to all construction workers and operations employees.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
8 CCR 5160 et seq.	Establishes the minimum safety standards for the use, handling, and storage of hazardous substances.	Cal/OSHA	Health and safety training programs including Hot Work, Hazard Communication, Hazardous Waste, and IIPP, would be provided to construction workers and operations employees.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
8 CCR 5184 et seq.	Applies to stationary battery systems used for emergency, standby, or uninterrupted power. Requires systems to include approved equipment and procedures to detect and control failures.	Cal/OSHA	Cal/OSHA requirements for storage battery systems are addressed through project design.	Section 3.17.2.4; Table 3.17-5 (NFPA information)

Table 3.17-6. Laws, Ordinances, Regulations, and Standards

LORS	Applicability	Administering Agency	Project Conformity	Opt-In Application Reference
8 CCR 5185 et seq.	Covers safe handling of batteries.	Cal/OSHA	Cal/OSHA requirements for storage battery systems are addressed through project design.	Section 3.17.2.4; Table 3.17-6 (NFPA information)
8 CCR 5192 et seq.	Governs hazardous waste site operations and emergency response activities involving hazardous substances.	Cal/OSHA	Training on Emergency Response Action Program/Plan would be provided to all construction workers prior to construction and to operations employees prior to operation.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
8 CCR 5193 et seq.	Protects workers from exposure to infectious materials.	Cal/OSHA	Training on the IIPP would be provided to all construction workers and operations employees.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
8 CCR 5194 et seq.	Ensures that employees are informed about hazardous chemicals they may encounter at work.	Cal/OSHA	Health and safety training programs, including Hazard Communication, Hazardous Waste, and IIPP, would be provided to construction workers and operations employees.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
8 CCR 5405 et seq.; 5426 et seq.; 5465 et seq.; 5500 et seq.; 5521 et seq.; 5545 et seq.; 5554 et seq.; 5565 et seq.; 5583 et seq.; and 5606 et seq.	Includes General Industry Safety Orders—specifically the sections dealing with flammable liquids, gases, vapors, and industrial plant safety. These regulations span Articles 141 through 151 and are designed to prevent fires, explosions, and chemical exposure in workplaces that handle hazardous substances.	Cal/OSHA	Training on Flammable and Combustible Liquid Storage and Handling would be provided for all construction workers and employees responsible for handling and storage for such materials.	Sections 3.17.2.3.1 through 3.17.2.3.3; Tables 3.17-3 and 3.17-4
8 CCR 6150 et seq.; 6151 et seq.; 6165 et seq.; 6170 et seq.; and 6175 et seq.	Includes fire protection standards for general industry workplaces. These sections focus on fire extinguishers, fire	Cal/OSHA	Detailed fire protection design information has been provided to the CEC for review as a part of the opt-in application process. The project would complete additional reviews as part of plan check prior to construction.	Section 3.17.2.4

Table 3.17-6. Laws, Ordinances, Regulations, and Standards

LORS	Applicability	Administering Agency	Project Conformity	Opt-In Application Reference
	suppression systems, and emergency preparedness.			
Title 24, Part 3, California Electrical Code	Requirements for electrical safety, which include the Uniform Electrical Code, Title 24, Part 3.	Cal/OSHA	Detailed electrical system design information has been provided to the CEC for review as part of the opt-in application process. The project would complete additional reviews as part of plan check prior to construction.	Section 3.17.2.4
Title 24, Part 9, Chapter 12, Section 1207	California Fire Code requirements for stationary storage battery systems.	Cal/OSHA	Detailed fire protection design information has been provided to the CEC for review as a part of the opt-in application process. The project would complete additional reviews as part of plan check prior to construction.	Section 3.17.2.4
Health and Safety Code Sections 25500 through 25541	Requirements for the preparation of a Hazardous Material Business Plan that details emergency response plans for a hazardous material emergency at the facility.	Cal/OSHA	If the facility exceeds the storage or use of hazardous materials above specific thresholds, it must comply with the Hazardous Materials Business Plan requirements under California Health and Safety Code Sections 25500 through 25541, consulting with the local Santa Cruz County Environmental Health Services division, which serves as the Certified Unified Program Agency (CUPA). If excessive storage or use of hazardous materials are determined, a Hazardous Materials Business Plan would be required to submit to the CUPA.	Section 3.5.5, Hazardous Materials
Local				
Santa Cruz County and Watsonville City Land Use Ordinances and Fire Code Amendments for BESS	Addresses construction (site layout), operation (local fire and safety), and decommissioning (site restoration).	Pajaro Valley Fire Protection District, Santa Cruz Cou nty Planning Department	Project meets local zoning use permits for BESS, local fire-prevention plan review, setbacks, site access, and decommissioning, consistent with County and city requirements.	Section 3.17.2.4

Table 3.17-6. Laws, Ordinances, Regulations, and Standards

LORS	Applicability	Administering Agency	Project Conformity	Opt-In Application Reference
		and Fire Marshal		
Industry Standard				
National Fire Protection Association (NFPA) 855 Standard for the Installation of Stationary Energy Storage Systems	NFPA 855 provides guidelines regarding the minimum requirements for mitigating the potential hazards associated with the battery energy storage system. Although not codified in state or local LORS, NFPA 855 is included here as an industry standard that the project would meet.	Watsonville Fire Department	Detailed fire protection design information has been provided to the CEC for review as a part of the opt-in application process. The project would complete additional reviews as part of plan check prior to construction.	Section 3.17.2.4
NFPA 850 – Recommendations for Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations	NFPA 850 provides recommendations for fire protection for electric-generating plants and high-voltage direct-current converter stations.	Watsonville Fire Department	Detailed fire protection design information would be provided to the CEC for review as part of the opt-in application process. The project would complete additional reviews as part of plan check prior to construction.	Section 3.17.2.4
NFPA 72 –National Fire Alarm and Signaling Code	NFPA 72 provides guidelines regarding the installation of the fire alarm system.	Watsonville Fire Department	As part of plan check, fire alarm system design information would be submitted to the CEC for review and approval to ensure the project is compliant with the applicable portions of the National Fire Alarm Code.	Section 3.17.2.4
NFPA 70 – National Electric Code – 2020 Edition	NFPA 70 governs safety of installation and safety of electrical systems.	Watsonville Fire Department	Detailed information on electrical installation of the BESS would be provided to the CEC for review, and additional reviews would be completed as part of plan check prior to installation.	Section 3.17.2.4

Table 3.17-6. Laws, Ordinances, Regulations, and Standards

LORS	Applicability	Administering Agency	Project Conformity	Opt-In Application Reference
NFPA 69 – Standard on Explosion Prevention Systems	NFPA 69 provides standards for the design, installation, operation, maintenance, and testing of systems for the prevention of explosions by means of (1) control of oxidant concentration, (2) control of combustible concentration, (3) predeflagration detection and control of ignition sources, (4) explosion suppression, (5) active isolation, (6) passive isolation, (7) deflagration pressure containment, and (8) passive explosion suppression.	Watsonville Fire Department	Explosion prevention system design information has been provided to the CEC for review as part of the opt-in application process. The project would complete additional reviews as part of plan check prior to construction.	Section 3.17.2.4
NFPA 68 – Standard on Explosion Protection by Deflagration Venting	NFPA 68 provides standards for explosion protection by deflagration venting.	Watsonville Fire Department	Explosion venting system design information has been provided to the CEC for review as a part of the opt-in application process. The project would complete additional reviews as part of plan check prior to construction.	Section 3.17.2.4
NFPA 24 – Standard for the Installation of Private Fire Service Mains and their Appurtenances	NFPA 24 provides guidelines regarding the installation of private fire service mains and fire hydrants.	Watsonville Fire Department	Detailed fire protection design information has been provided to the CEC for review as part of the opt-in application process. The project would complete additional reviews as part of plan check prior to construction.	Section 3.17.2.4
NFPA 22 – Standard for Water Tanks for Private Fire Protection	NFPA 22 provides guidelines regarding the installation of the water tanks.	Watsonville Fire Department	Detailed fire protection design information has been provided to the CEC for review as part of the opt-in application process. The project would complete additional reviews as part of plan check prior to construction.	Section 3.17.2.4

Table 3.17-6. Laws, Ordinances, Regulations, and Standards

LORS	Applicability	Administering Agency	Project Conformity	Opt-In Application Reference
UL 9540/UL 9540A – Energy Storage Systems and Equipment (standard and test method)	Addresses design and commissioning/ decommissioning (safety and fire testing).	Underwriters Laboratories (UL)	UL 9540 listed equipment would be used and UL 9540A large-scale fire propagation test data would be provided if relying on reduced spacing or alternative mitigation.	Sections 3.17.2.3.2 and 3.17.2.4.1

Notes: LORS = Laws, Ordinances, Regulations, and Standards; BESS = battery energy storage system; CCR = California Code of Regulations; OSHA = Occupational Safety and Health Administration; Cal/OSHA = California OSHA.

* State and local approvals would be superseded by California Energy Commission approval of the project under the Opt-In Program.

3.17.4 Agencies and Agency Contacts

Applicable agency contacts for worker health and safety are shown in Table 3.17-7.

Table 3.17-7. Agencies and Agency Contacts

Issue/Approval	Agency	Applicability
Worker Health and Safety	Cal/OSHA, Regional Office (Region 1) Abigail Fabricante, Region 1 Manager 455 Golden Gate Avenue, Room 9516 San Francisco, California 94102 415.557.0300 DOSHREG1SanFrancisco@dir.ca.gov Salinas District Office 1880 N. Main Street, Suite 150 Salinas, California 93906 831.443.3130 DOSHETFSalinas@dir.ca.gov	Incident reporting
Hazardous Materials Business Plan*	Santa Cruz County Environmental Health/Hazardous Materials Program 831.454.2022 hazmat@santacruzcountyca.gov	Hazardous materials oversight, including compliance and permitting
Plan check review*	Pajaro Valley Fire Protection District CSG Consultants Inc. Jim Dias, Plans Examiner/Fire Safety Inspector 550 Pilgrim Drive Foster City, California 94404 650.627.6272 (Mobile) jimd@csgengr.com Santa Cruz County Fire Marshal's Office Joe Paquin, Deputy Fire Marshal 6059 Highway 9 Felton, California 95018 831.335.6748 SCCFDFireMarshal@fire.ca.gov	Fire protection compliance

Notes: Cal/OSHA = California Occupational Safety and Health Administration.

* Approval of the Hazardous Materials Business Plan from the Santa Cruz County Environmental Health/Hazardous Materials Program would be superseded by California Energy Commission (CEC) approval of the project under the Opt-In Program. In addition, project plan approval from the Santa Cruz County Environmental Health/Hazardous Materials Program would be superseded by CEC approval of the project under the Opt-In Program.

3.17.5 Permits and Permit Schedule

Table 3.17-8 lists the permits related to worker health and safety and the permit schedule. However, given the California Energy Commission's preemptive authorities under applicable state law, there are no additional applicable permits or permit schedule for worker health and safety.

Table 3.17-8. Permits and Permit Schedule for Worker Health and Safety

Permit	Agency	Status
Trenching and excavation permit	Any Cal/OSHA district or field office	Would be obtained prior to construction
Erecting structure over 36 feet in height, or erecting scaffolding over 36 feet in height	Any Cal/OSHA district or field office	Would be obtained prior to construction
Confined spaces	Any Cal/OSHA district or field office	Would be obtained prior to construction
Building and grading permits, including fire extinguishing and fire suppression systems review	County of Santa Cruz*	Would be obtained prior to construction

Notes: Cal/OSHA = California Occupational Safety and Health Administration.
* The issuance of permits from the County of Santa Cruz would be superseded by California Energy Commission approval of the project under the Opt-In Program.

3.17.6 References

County of Santa Cruz. 2025. "Item #16544: Proposed Energy Storage Ordinance." Santa Cruz County Clerk of the Board. County Board of Supervisors. April 2025.

Davey Resource Group Inc. 2022. *Tree Canopy & Land Cover Assessment Summary Report: Watsonville, CA*. City of Watsonville.

NFPA (National Fire Protection Association). 2023. "Tentative Interim Amendment 23-1 to NFPA 855: Standard for the Installation of Stationary Energy Storage Systems (TIA 23-1, SC 23-8-64/TIA Log #1727)."

PVFPD (Pajaro Valley Fire Protection District). 2021. *Pajaro Valley Fire Protection District Jurisdictional and Sphere Boundaries*.

PVFPD. 2023. *Engineer's Report: Pajaro Valley Fire Protection District. Fire Protection and Emergency Response Services Assessment, Fiscal Year 2024–25*.

PVFPD. 2025. "Ordinance 2025-15: 2025 Fire Code. Pajaro Valley Fire Protection District."

4 Alternatives

4.1 Introduction

This chapter discusses alternatives to the proposed 200-megawatt (MW), up to 800-megawatt-hour (MWh) Seahawk Battery Energy Storage System (BESS) Project (proposed project) in Santa Cruz County. These alternatives consist of the No Project Alternative, the Reduced Project Alternative, Alternative Project Site #1 (Grimmer Road Alternative Site), and Alternative Project Site #2 (Pioneer Road Alternative Site). This discussion focuses on alternatives that could feasibly accomplish most of the basic objectives of the proposed project and could avoid or substantially lessen one or more of the identified potentially significant impacts. This chapter also describes the site selection criteria used in determining the proposed location of the project, and alternatives that were considered but rejected from further review.

The California Environmental Quality Act (CEQA) Guidelines require consideration of "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 but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives" (Title 14, California Code of Regulations [CCR] 15126.6[a]). The CEQA Guidelines further require that the discussion focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project, even if those alternatives would impede, to some degree, the attainment of the project objectives or would be more costly.

Thus, the focus of an alternatives analysis should be on alternatives that "could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects" (Title 14, CCR 15126.6[c]). The CEQA Guidelines further provide that "among the factors that may be used to eliminate alternatives from detailed consideration in an EIR [Environmental Impact Report] are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts." The EIR should briefly describe the rationale for selecting the alternatives to be discussed, and also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination.

An EIR is not required to consider alternatives that are infeasible. "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors (CEQA Guidelines Section 15364). According to CEQA Guidelines Section 15126.6(f)(1), factors that may be taken into account when addressing the feasibility of alternatives include site suitability, economic viability, availability of infrastructure, General Plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the project applicant can reasonably acquire, control, or otherwise have access to the alternative site (or already owns the alternative site). None of these factors establishes a fixed limit on the scope of reasonable alternatives.

The Energy Facilities Siting Regulations (Title 20, CCR, Appendix B) guidelines, titled Information Requirements for an Application, require the following:

> A discussion of the range of reasonable alternatives to the project, or to the location of the project, including the no project alternative, which would feasibly attain most of the basic objectives of the

> project but would avoid or substantially lessen any of the significant effects of the project, and an evaluation of the comparative merits of the alternatives. In accordance with Public Resources Code section 25540.6(b), a discussion of the applicant's site selection criteria, any alternative sites considered for the project, and the reasons why the applicant chose the proposed site.

The data adequacy regulations also require the following:

> A description of how the site and related facilities were selected, and the consideration given to engineering constraints, site geology, environmental impacts, water, waste and fuel constraints, electric transmission constraints, and any other factors considered by the applicant.

Further, the CEQA Guidelines Section 15126.6(d) provides, in part, "If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed" (CEQA Guidelines Section 15126.6(f).

4.2 Summary of Project Objectives and Significant Impacts

4.2.1 Project Objectives

One of the primary purposes of the proposed project is to assist the State of California in meeting its goal of reducing statewide annual greenhouse gas (GHG) emissions from the electric sector to 25 million metric tons by 2035. The proposed 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 proposed project may displace the need for additional fossil-fuel-based generating stations to serve peak demand periods when renewable sources may be inadequate or unavailable.

The proposed project's objectives are as follows:

1. Construct and operate a 200 MW, 800 MWh BESS facility in Santa Cruz County using economically feasible, commercially available, and proven technology capable of operating at utility scale, with an interconnection utilizing available system capacity adjacent to the existing Pacific Gas & Electric Company (PG&E) Green Valley Substation.
2. Provide economic benefits to Santa Cruz County, create prevailing-wage jobs, and facilitate local community benefits.
3. Provide a service to the regional electric grid by receiving energy (charging) from the PG&E electric transmission system, storing energy on site, and then later delivering energy (discharging) back to the Point of Interconnection (POI).
4. Add reliability to the California electric grid and help meet the June 2021 California Public Utilities Commission's (CPUC) decision requiring 11,500 MW of new capacity additions to the California Independent System Operator (CAISO) system.
5. Provide additional capacity to the electrical grid to assist with serving load during periods of peak demand by charging when demand is low and discharging when demand is high.

6. Accommodate the integration of additional intermittent renewable energy sources, such as wind and solar, and reduce the need to operate natural gas power plants.
7. Serve as an additional local capacity resource that would enhance grid reliability.
8. Assist Santa Cruz County in meeting its climate resiliency and clean energy goals by providing electrical energy storage.
9. Provide energy storage capacity and dispatch for the electrical grid.
10. Include all required off-site improvements, including a secondary emergency access route and upgrades necessary to provide water service as required to meet California Fire Code and local emergency response requirements.
11. Help ensure electrical transmission system reliability so that clean renewable energy sources can meet peak demand, and help prevent outages and blackouts in Santa Cruz County in the face of climate change.
12. Assist Santa Cruz County in meeting its net-zero greenhouse gas emissions and the state's 100% zero-carbon electricality goals by 2045 by contributing energy storage within Santa Cruz County.
13. Ensure public safety by complying with applicable California Fire Code and National Fire Protection Association standards; providing emergency access and internal fire roads; ensuring 100-foot setbacks from public roads and adjacent parcels (excepting the Green Valley Substation); and excluding BESS modules within 1,000 feet of a parcel containing an existing hospital, school, commercial day care center, or residential care facility for older adults.

4.2.2 Significant Impacts

The proposed project would not result in any significant and unavoidable adverse impacts for which feasible mitigation measures could not reduce the impacts to below significance. Implementation of feasible mitigation measures would reduce the following identified potentially significant impacts to less than significant: biological resources, land use – conversion of mapped farmlands (mostly Farmlands of Statewide Importance and a small area of Prime Farmland), hazardous materials handling, and paleontological resources.

Potential impacts to the following issue areas were determined not to be significant and would not require mitigation: air quality and GHGs, cultural resources, geological hazards and resources, land use (except for impacts identified above), public health, noise, soils, visual resources, waste management, water resources, wildfire, and worker health and safety.

4.3 Project Overview

The proposed project would consist of construction, operation, maintenance, and eventual decommissioning of an up to 200 MW BESS in unincorporated Santa Cruz County. A 115-kilovolt (kV) generation tie (gen-tie) line connecting the project substation to the POI with the existing PG&E-owned Green Valley Substation would facilitate charging and discharging to the electrical grid.

The project site is on an approximate 47-acre agricultural site (Assessor's Parcel Numbers 051-101-77 and 051-101-78), and the BESS project would be constructed on approximately 16 acres on the north-easterly portion of the property adjacent to the existing Green Valley Substation. The remaining area within the project site, as well as the adjacent Assessor's Parcel Number 051-101-78, would be protected under a long-term conservation easement.

The proposed project would consist of lithium-ion-based batteries installed in racks inside prefabricated energy storage containers with integrated power conversion equipment and fire suppression systems in compliance with all applicable standards. The facility would be an outdoor BESS installation containing 245 battery blocks that would house the energy storage batteries, all located on a concrete pad surrounded by gravel. There would be room for 21 additional battery blocks for future augmentation, for a total of 266 battery blocks. Each battery enclosure would have a fire suppression system, including remote monitoring, and would comply with all applicable standards and regulations.

In addition, the proposed project would have on-site interconnection equipment, including power inverters, transformers, and a collector substation (project substation), located in the northwest corner of the project site, directly east of the PG&E Green Valley Substation. The project substation would step the electricity from the inverter-transformer to the voltage level of the transmission system.

Interconnection to the adjacent Green Valley Substation would require trenched underground gen-tie line wires from the project substation to the Point of Change of Ownership on the PG&E property, and interconnection via overhead methods from the Point of Change of Ownership to the POI. The proposed project would also include off-site improvements, including a secondary emergency access route and improvements necessary to provide water service to meet California Fire Code and emergency response requirements.

The proposed project would operate continuously for approximately 30 to 35 years, charging from the electrical grid when demand is low and discharging when demand is high, providing additional capacity to the electrical grid. The facility would operate unstaffed and be monitored remotely through a Supervisory Control and Data Acquisition system. Routine maintenance and inspection would occur weekly and also involve one major maintenance inspection that would occur annually to ensure reliable and safe operational readiness.

Pursuant to its Federal Energy Regulatory Commission–approved tariff, CAISO is responsible for evaluating the feasibility of locating transmission-scale energy storage within the existing electrical grid. In regard to interconnection, CAISO has identified points of deliverability within Santa Cruz County. Currently, the proposed project is the only BESS project in unincorporated Santa Cruz County that has been awarded deliverability by CAISO with interconnection to the Green Valley Substation due to its electrical characteristics (i.e., sufficient capacity to interconnect transmission-level generation) and viable land that is adjacent, open, flat, and with sufficient area to accommodate the proposed project, including proposed emergency access and setback area (15 acres).

The proposed facility would provide a service to the regional electric grid by receiving energy (charging) from the PG&E electric transmission system, storing energy on site, and then later delivering energy (discharging) back to the POI. The proposed project would add reliability to the California electric grid and help meet the June 2021 CPUC decision requiring 11,500 MW of new capacity additions to the CAISO system. The proposed project would provide additional capacity to the electrical grid to assist with serving load during periods of peak demand by charging when demand is low and discharging when demand is high. This accommodates the integration of additional, intermittent renewable energy sources, such as wind and solar, and reduces the need to operate natural gas power plants. The proposed project would also serve as an additional local capacity resource that would enhance grid reliability.

4.4 Rationale for Alternatives Selection

The following discussion covers a reasonable range of feasible alternatives that would avoid or substantially lessen one or more significant effects of the proposed project while attaining most of the project objectives. In accordance with the CEQA Guidelines, many factors may be taken into account when addressing the feasibility of alternatives,

such as environmental impacts and site suitability as it pertains to environmental constraints, such as location in areas of flooding and steep slopes, land use designations or zoning, economic viability, availability of infrastructure, regulatory limitations, and jurisdictional boundaries (CEQA Guidelines Section 15126.6[f][1]).

In determining an appropriate range of project alternatives to be evaluated, a broad range of alternatives was reviewed. Based on initial review and consideration, it was determined that some of these preliminary alternatives did not accomplish most of the project objectives (Section 4.2.1), would result in greater impacts than the proposed project, or were found to be infeasible. Thus, these alternatives were rejected and were not fully analyzed. The alternatives that were considered and rejected are discussed in Section 4.5.

Three alternatives would meet most of the project objectives, are potentially feasible, and would avoid or minimize some potential impacts compared to the proposed project. Additionally, a No Project Alternative is required to be included in the range of alternatives. The four alternatives, as listed below, are more fully analyzed than the rejected alternatives and are discussed in Sections 4.6, 4.7, 4.8, and 4.9. For each of these alternatives, the analysis includes a description of the alternative and a comparison of the environmental effects relative to the proposed project. A summary of how these alternatives compare to the project objectives is provided in Section 4.10, Summary of Alternatives.

- **Alternative 1:** No Project Alternative
- **Alternative 2:** Reduced Project Alternative
- **Alternative 3:** Alternative Project Site #1 (Grimmer Road Alternative Site)
- **Alternative 4:** Alternative Project Site #2 (Pioneer Road Alternative Site)

The alternatives studied constitute a reasonable range because they contain enough variation to facilitate informed decision making that leads to a reasoned choice. Also, the discussion of each alternative is sufficient to allow meaningful evaluation, analysis, and comparison with the proposed project. Therefore, the significant effects of each alternative are discussed in less detail than those of the proposed project, but in enough detail to provide perspective and a reasoned choice among alternatives to the proposed project.

4.5 Alternatives Considered but Eliminated from Further Analyses

The purpose of an alternatives analysis is to develop alternatives to the proposed project that avoid potentially significant environmental effects identified as a result of the project while still feasibly meeting most of the basic project objectives. Several alternatives were considered but subsequently eliminated from further analyses because of "(i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts" (Title 14, CCR 15126.6[c]).

4.5.1 Alternative Site Locations

The project applicant completed an extensive site planning process to identify and avoid environmental constraints and potential impacts, which included review of potential sites for the proposed project. This site planning process was intended to create a project that optimizes reliable, dispatchable energy generation while being sensitive to environmental constraints, which ultimately resulted in the selection of the project site. Several alternative site locations were considered but subsequently rejected from further analysis because they would result in greater

impacts than the proposed project, primarily due to construction of a longer gen-tie line from an alternative site to the Green Valley Substation, as well as other environmental constraints and considerations of feasibility.

A key requirement for consideration of alternative sites is proximity to the Green Valley Substation, as explained below. All alternative locations must be centered around an interconnection to an existing transmission substation that is owned and operated by PG&E. The review of alternative sites considered sites adjacent to all existing PG&E substations within Santa Cruz County that have adequate equipment for generation interconnection. In addition to the Green Valley Substation adjacent to the project site, there are three other substations in Santa Cruz County: the Paul Sweet, Rob Roy, and Camp Evers Substations, as shown in Figure 4-1, Existing PG&E Transmission Substations in Santa Cruz County. However, review of the three other transmission system substations found that there are no viable sites for a BESS project in proximity to these substations due to existing development and topographical and environmental constraints, as summarized below:

- Paul Sweet Transmission Substation. This substation is within a developed, urban area in the unincorporated community of Live Oak. Potential sites adjacent to or in proximity of the Paul Sweet Substation are currently developed with medical-related facilities, including the Dignity Health–Dominican Hospital, and a mix of commercial and residential uses. Residential neighborhoods are immediately to the east, northeast, and southwest. An existing cemetery is west of this substation, and other sites to the north and west are developed and/or have topographical and other environmental constraints, such as steep slopes and/or the presence of creeks and sensitive biotic habitats. Thus, potential undeveloped sites are constrained by steep slopes and other environmental constraints that would not provide a suitable site for the proposed project.
- Rob Roy Transmission Substation. Potential sites adjacent to and in proximity to the Rob Roy Substation consist of gently sloping, vegetated terrain in an area that is generally characterized by larger-lot residential development and Aptos High School, which is south of the substation and Freedom Boulevard. Thus, potential undeveloped sites are constrained by steep slopes and other environmental constraints that would not provide a suitable site for the proposed project.
- Camp Evers Transmission Substation. This substation is within the city of Scotts Valley and is generally surrounded by existing development within Scotts Valley and adjacent unincorporated Santa Cruz County areas. One vacant parcel across the street from the substation is too small (3.5 acres) to accommodate the proposed project, and a mixed-use residential and commercial project was approved for the site in 2022. Sites in proximity to this substation consist of developed properties within Scotts Valley, developed residential properties within unincorporated Santa Cruz County, or properties constrained by steep slopes. Thus, there are no potential undeveloped sites that are not developed or do not have environmental constraints that would provide a suitable site for the proposed project.

Based on review of potential sites in proximity to existing transmission substations, the Green Valley Substation was found to be the only viable location in Santa Cruz County to site a utility-scale BESS due to its electrical characteristics (i.e., sufficient capacity to interconnect transmission-level generation) and suitability in proximity to the substation. In addition, CAISO approves the "interconnection" of energy storage facilities at specific locations within the electrical grid based on its 10-year transmission plan (CAISO 2025). Other than the proposed project, no other BESS projects are approved for interconnection in Santa Cruz County. State law defines an "energy storage system" as "commercially available technology that is capable of absorbing energy, storing it for a period of time, and thereafter dispatching the energy" that "shall be cost effective and either reduce emissions of greenhouse gases, reduce demand for peak electrical generation, defer or substitute for an investment in generation,

transmission, or distribution assets, or improve the reliable operation of the electrical transmission or distribution grid" (California Code, Public Utilities Code Section 2835).

Given these considerations, potential alternative sites near the Green Valley Substation were further reviewed as explained below.

4.5.1.1 Alternative Location Site Criteria

Alternative site locations were evaluated to determine if a 200 MW, 800 MWh, BESS with supporting improvements could be reasonably and feasibly placed in another location in proximity to the Green Valley Substation. In accordance with CEQA Guidelines Section 15126.6(f)(2), the key question and first step in analysis of alternative site locations is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location. Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR. If the lead agency concludes that no feasible alternative locations exist, it must disclose the reasons for this conclusion in the EIR.

In addition, CEQA Guidelines Section 15126.6(f)(1) identifies factors that may be taken into account when addressing the feasibility of alternative sites: site suitability; economic viability; availability of infrastructure; General Plan consistency; other plans or regulatory limitations; jurisdictional boundaries (projects with a regionally significant impact should consider the regional context); and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site (or the site is already owned by the proponent).

Based on this guidance, the following criteria were developed to evaluate alternative sites based on the project objectives. Sites that did not meet most of the basic project objectives and the following principle criteria were screened from further review.

Areas Within a 2-Mile Radius of the Green Valley Substation

Potential sites outside of the 2-mile radius were eliminated due to physical siting constraints and ability to develop connections to the Green Valley Substation. Specifically, the mountainous terrain to the northeast and north present constraints due to steep slopes and geotechnical and flood hazards. Lands farther south extend into developed areas, including residential neighborhoods within the City of Watsonville and lack parcels of sufficient size to support a BESS. A project developed in these land uses would inherently generate more potential impacts and use conflicts than the proposed project site. In addition, sites farther than 2 miles from the Green Valley Substation would result in a lengthier gen-tie line, which would contribute to greater potential acreages used and impacts than the proposed project.

Minimum 15-Acre Site Size

A total of 15 contiguous acres was used to identify the minimum viable project size that would be necessary to support a 200 MW, 800 MWh project.

Site Suitability Exclusions

The following exclusions were used to identify potential project sites:

- Exclude developed parcels unless the parcel is deemed suitable for redevelopment due to limited and/or deteriorating structures.
- Exclude areas that contain greater than 30% slopes, which would require substantial grading and earthwork, such as retaining walls and other structural improvements, and would accordingly generate impacts that are avoided or minimized at the proposed project site.
- Exclude areas within the 100-year floodplain. Potential alternative sites within the 100-year floodplain were excluded because constructing a BESS and incorporating flood-proofing construction requirements within a 100-year floodplain would result in additional environmental impacts, pose constructability issues, and pose flood and hazard insurance risks.
- Exclude areas with non-riverine wetlands and wetland complexes. Non-riverine wetland areas were excluded to avoid environmental impacts. Wetland complexes create a functional ecological unit through interconnection of wetland features and provide habitat, biodiversity, and water filtration and purification.
- Exclude sites in the Protected Areas Database of the United States (PAD-US).[1] Protected areas were excluded to avoid environmental impacts and potential land use conflicts in areas likely to be used by recreationalists.
- Exclude areas within the coastal zone due to potential presence of environmentally sensitive habitat and visual resources. In addition, project permits would not supersede the permitting requirements of the California Coastal Commission, and a site in the coastal zone would require additional permitting, which would not meet goals to receive permits in order to operate a BESS in the near term.
- Exclude area within 1,000 feet of a parcel with an existing hospital, school, commercial day care center, or residential care facility for older adults.

Appropriate Local Land Use Designations

- Include parcels with appropriate local zoning that support or could support development of an energy storage system. Although the passage of Senate Bill 254 (effective September 19, 2025) provides more flexibility of siting projects on parcels that may not entirely conform to local zoning regulations, for the purpose of this review, local zoning regulations were considered based on the assumption that zone districts that could support energy storage systems provide greater consistency and compatibility with local requirements.
- Within unincorporated Santa Cruz County, development is subject to the requirements set forth in the Santa Cruz County Code (SCCC). The County of Santa Cruz (County) considers energy storage facilities to be an "Energy Facility" defined in SCCC Section 13.10-700-E as "any public or private processing, producing, generating, storing, transmitting, or recovering facility for electricity, natural gas, petroleum, coal or other energy resource; excluding solar energy systems (refer to SCCC 13.10.700-S), wind energy conversion systems (refer to SCCC 13.10.700-W), and community energy systems (refer to this section)."
- The "Energy Facility" use appears to be allowed only in Industrial (M-1, 2, 3) zone districts (County of Santa Cruz 2020).
- The SCCC defines a "public/quasi-public community facility" as "a publicly or privately operated facility that provides essential community services to benefit the public, such as medical services, governmental services, housing/supportive services, library services, educational services, or utilities" (SCCC Section 13.10-700-P). The Public and Community Facilities (PF) zone district generally allows "Public or Quasi-Public Community Facilities," but the "use chart" does not specifically include this designation; it does

[1] PAD-US is America's official national inventory of terrestrial and marine protected areas that are dedicated to the preservation of biological diversity and to other natural, recreational, and cultural uses, managed for these purposes through legal or other effective means (USGS 2022).

include a "utility facility" (which is not defined), including "private" utilities (County of Santa Cruz 2020). Thus, it appears that an energy storage facility connected to a utility may meet the definition of utility facility and potentially be permitted in the Public and Community Facilities (PF) zone district.

- Public facility and public/quasi-public community facilities, where determined to be of significant benefit to public health, safety, and welfare, with any loss of agricultural land mitigated, are allowed in the Agriculture (A) zone district with a Conditional Use Permit (County of Santa Cruz 2020).
- The Special Use (SU) zone district allows uses allowed in zone districts other than Residential Agriculture (RA) and Single-Family Residential (R-1) when the applicable zone district is consistent with the General Plan land use designation (County of Santa Cruz 2020).
- In early 2026, the County Board of Supervisors approved in concept a draft Energy Storage Combining District Ordinance and directed the Community Development and Infrastructure Department to proceed with environmental review, public hearings, and commission recommendations on the Draft Ordinance, and take related actions. The proposed overlay district would allow and regulate BESS facilities within a new combining district or zoning overlay to be applied to property in all zoning designations within a specified proximity to existing electricity transmission centers (substations) (County of Santa Cruz 2026). The proposed project site is specifically identified as one of the site suitable for this overlay district.
- Within the City of Watsonville, development is subject to requirements set forth in Title 14, Zoning, in the Watsonville Municipal Code. There are no definitions for BESS or energy facilities. The Watsonville Municipal Code does define a "major utility facility" as water treatment plants, pumps for water or sewage, tanks for the storage of water or gas, gas regulating stations, communication equipment buildings, electrical generating plants, electrical distribution and transmission stations, and electric transmission lines with a capacity of more than 34,500 Volts (Title 14 Section 18.530). The Watsonville Municipal Code also defines "public" as a land use or a building open to the public, whether free or upon a fee basis (Title 14 Section 18.622), and "quasi-public" is defined as owned privately but open for the use of the public (Title 14 Section 18.630).
- Within the City of Watsonville, utilities and "energy, gas and sanitary service" are permitted in the General Industrial (IG) zone district with approval of a Special Use Permit. A public or quasi-public facility and a "utility service facility" are permitted in the Public Facilities (PF) zone district with a public or quasi-public facility requiring approval of an Administrative Use Permit with Design Review.
- Conclusion: Parcels zoned M-1, M-2, and M-3, and potentially PF, A, and SU pursuant to the SCCC, and zoned General Industrial (IG) or PF in the Watsonville Municipal Code were considered suitable to support a BESS facility.

Site Availability

The site must be for sale or potentially available to the project applicant.

4.5.1.2 Alternative Locations Analyzed

Alternative site locations within a 2-mile radius of the Green Valley Substation are primarily within unincorporated Santa Cruz County, but the southern portion of the 2-mile radius also includes parcels within the City of Watsonville, including the northern portion of the Watsonville Municipal Airport.

The initial review looked at parcels with a minimum of 15 acres and with appropriate local land use designations to support a BESS. As indicated in Section 4.5.1.1, parcels zoned M-1, M-2, M-3, and potentially PF, A, and SU

pursuant to the SCCC, and zoned General Industrial (IG) or PF in the Watsonville Municipal Code were considered suitable to support a BESS facility. There were no properties zoned M-1, M-2, M-3, or General Industrial (IG) within the 2-mile radius of the project site. Eight parcels with suitable size within a PF or SU zone district were identified, which are shown in Figure 4-2, Potential Alternative Sites Within 2-Mile Radius of Green Valley Substation and Project Site. However, most were already developed with other public facilities, such as schools and the Santa Cruz County Fairgrounds, and thus were eliminated from further consideration, as summarized on Table 4-1. However, one parcel zoned PF that is adjacent to the project site was deemed suitable for further review (PAS-8).

Similarly, sites within the A zone district did not meet the minimum parcel size and/or were developed with residential uses that constrain the potential to combine parcels to create a site with a minimum of 15 acres were eliminated from further consideration. Based on this initial screening, the following criteria were then applied to the remaining parcels zoned A that had a minimum of 15 acres: exclude areas that contain greater than 30% slopes, areas within the 100-year floodplain, areas with non-riverine wetlands and wetland complexes, and PAD-US areas. Once the above criteria were applied, of the nine parcels zoned A with a minimum of 15 acres, only one was identified as suitable for further review (PAS-16) because the other sites were constrained by steep slopes and/or were within a floodplain (Table 4-1).

The review also considered thee other parcels zoned Commercial Agriculture (CA) that are adjacent to or in proximity of the Green Valley Substation, given limited availability of suitable sites and pending changes to the SCCC to potentially accommodate a BESS on lands zoned Commercial Agriculture (CA). In 2024, the County Board of Supervisors directed the Community Development and Infrastructure Department to create an ordinance to accommodate energy storage systems as a “public/quasi-public community facility” use in unincorporated Santa Cruz County, and preliminary staff reviews considered parcels zoned Commercial Agriculture (CA) where impacts to agricultural lands would be required to be offset by an agricultural conservation easement (County of Santa Cruz Board of Supervisors October 2024). However, these parcels were dismissed from further review because potential impacts would be similar to or greater than those resulting from the proposed project (see Table 4-1).

Table 4-1. Potential Alternative Sites within 2 Miles of Project Site

Potential Alternative Site (PAS)	Size (acres)	Assessor’s Parcel Number	Zone District	Carried Forward or Dismissed
PAS-1	22	051-501-12, -17	PF	**Dismissed**. The site is currently developed with a school (Lakeview Middle School).
PAS-2	15	051-501-16	PF	**Dismissed**. The site is currently developed with a school (St. Francis High School).
PAS-3	15	051-441-30, -29	PF	**Dismissed**. The site is currently developed with a church, and most of site is within a 100-year floodplain and contains slopes greater than 50%.
PAS-4	101	051-491-01	PF	**Dismissed**. The site is currently the location of the Santa Cruz County Fairgrounds and is owned by the State of California and not available to the project applicant.
PAS-5	15	051-661-25	PF	**Dismissed**. The site is currently developed with a school (Watsonville Charter School of the Arts).
PAS-6	67	109-331-01	PF	**Dismissed**. The site is currently developed with a school (Monte Vista Christian School).

Table 4-1. Potential Alternative Sites within 2 Miles of Project Site

Potential Alternative Site (PAS)	Size (acres)	Assessor's Parcel Number	Zone District	Carried Forward or Dismissed
PAS-7	155	109-151-16	SU	**Dismissed**. The site is currently developed with a golf course with topographical constraints.
PAS-8	16	051-101-59	PF	**Carried Forward for Review**. The site, owned by the Transportation Office of the Pajaro Valley Unified School District, is flat and partially used for bus storage. The parcel is south of the project site. A portion of the site is within a 100-year floodplain.
PAS-9	39	051-501-10	A-GH	**Dismissed**. The site is completely within Kelly Lake and 100-year floodplain with year-round inundation.
PAS-10	22	109-201-40	A	**Dismissed**. The site is developed with an existing residence, contains 30% to 50+% slopes, and is within a County-mapped fault zone.
PAS-11	18	109-201-22	A	**Dismissed**. The site is developed with an existing residence and other structures, contains 30% to 50+% slopes, and is within a County-mapped fault zone.
PAS-12	19	109-201-41	A	**Dismissed**. The site is developed with two existing residences.
PAS-13	52	109-171-22	A	**Dismissed**. The site is developed with an existing residence and contains areas of 30% to 50+% slopes.
PAS-14	24	050-381-16	A	**Dismissed**. The site has irregular shape and contains areas of 30% to 50+% slopes.
PAS-15	20	050-031-12	A	**Dismissed**. The site is developed with an existing residence, is within a County and state fault zone, contains areas of 30% to 50+% slopes, and the southeastern portion of the site is within a 100-year floodplain.
PAS-16	48	050-471-01	A-AIA	**Carried Forward for Review**. The northeastern portion of the site contains areas of 30% to 50+% slopes. The site is adjacent to residential neighborhoods.
PAS-17	16	048-231-09	A-AIA	**Dismissed**. The site is developed with an existing house and is completely within a 100-year floodplain.
PAS-18	16	051-091-01	CA	**Dismissed**. The site is adjacent to the project site and Green Valley Substation, with a residential neighborhood on the west. The site is in a County-mapped fault zone and mostly contains mapped prime agricultural lands. A BESS project at this location would have impacts similar to or greater than the proposed project.
PAS-19	90	051-101-53	CA	**Dismissed**. The site is adjacent to the project site and in proximity to the Green Valley Substation, but the entire site contains mapped prime agricultural lands. A BESS project at this location would have impacts similar to or greater than the proposed project.
PAS-20	17	051-101-22	CA	**Dismissed**. The site is adjacent to the project site and is in proximity to the Green Valley Substation, but a portion of the site is within a 100-year floodplain, and

Table 4-1. Potential Alternative Sites within 2 Miles of Project Site

Potential Alternative Site (PAS)	Size (acres)	Assessor's Parcel Number	Zone District	Carried Forward or Dismissed
				the site contains mapped Unique Farmlands. A BESS project at this location would have impacts similar to or greater than the proposed project.

Notes: PF = Public Facilities; SU = Special Use; A = Agriculture; A-AIA = Airport Combining District; CA = Commercial Agriculture; GH = Geologic Hazards Combining District; BESS = battery energy storage system; County = County of Santa Cruz.

Based on the alternative site criteria, two potentially suitable alternative sites within a 2-mile radius of the Green Valley Substation were identified and were carried forward for further review:

- PAS-8: Grimmer Road Site – Alternative Site 1
- PAS-16: Pioneer Road Site – Alternative Site 2

An expanded alternatives analysis considered alternative site locations that are within a larger 6-mile radius of the Green Valley Substation instead of 2 miles. The same criteria were used to evaluate alternative locations within a larger 6-mile radius as outlined in Section 4.5.1.1. Ten parcels within unincorporated Santa Cruz County were identified with 15-plus acres, but were dismissed from further review due to existing development; location within the coastal zone, a 100-year floodplain, or a PAD-US area or other sensitive resource area; and/or presence of slopes greater than 30%, as summarized in Table 4-2 (see Figure 4-3, Potential Alternative Sites Within 6-Mile Radius of Green Valley Substation and Project Site).

A portion of the City of Watsonville and unincorporated Monterey County are within the expanded area, in addition to unincorporated areas of Santa Cruz County. Approximately 200 parcels were identified in the City of Watsonville that are zoned General Industrial (IG). However, all sites are developed and/or not of sufficient size to accommodate the proposed project, and, thus, were eliminated from further review. Furthermore, most of the parcels zoned General Industrial (IG) are within a 100-year floodplain.

Within unincorporated Monterey County, the Monterey County Code defines "public utility" as a company regulated by the CPUC or other regulatory body, including the County of Monterey (Section 21.06.900). "Public utility facilities" are defined as facilities for the production, storage, transmission, distribution, and recovery of water, sewage, energy, and other similar utilities (Section 21.06.910). BESSs would appear to fall within the definition of public utility facilities in the Monterey County Code. The Agricultural Industrial (AI) zone district allows "public and quasi-public structures and uses and public utility structures and uses." The Light Industrial (LI) zone district allows "public and quasi-public uses including churches, parks, playgrounds, public safety facilities, public utility facilities, jails, rehabilitation centers and detention facilities." Thus, it appears that a BESS could be located within AI or LI zone districts within unincorporated Monterey County.

Four potential sites zoned AI were identified within unincorporated Monterey County within the expanded area; no sites zoned LI were identified. However, the four sites were dismissed from further review due to their location within the coastal zone, and three of the parcels would not meet the minimum site size of 15 acres.

Table 4-2. Potential Alternative Sites within 2 to 6 Miles of Project Site

Potential Alternative Site (PAS)	Size (acres)	Assessor's Parcel Number	Zone District	Carried Forward or Dismissed
PAS-21	42	041-291-37	PF	**Dismissed**. The site is currently developed with a school (Aptos High School).
PAS-22	45	041-281-61	PF, SU	**Dismissed**. The site is currently developed with one house, is adjacent to Aptos High School, and is constrained by steep (30+%) slopes.
PAS-23	93	052-531-03	PF-AIA	**Dismissed**. The site is developed with the County Jail and Buena Vista Migrant Center.
PAS-24	35	052-531-01	PF-AIA	**Dismissed**. The site is in the coastal zone, most of the site contains 30+% slopes, and the site is within a mapped PAD-US area.
PAS-25	50	046-201-22	CZ-E	**Dismissed**. The site is within the City of Watsonville, is within the coastal zone, and is a reopened, active landfill.
PAS-26	47	046-201-27	PF-AIA	**Dismissed**. The site is in the coastal zone and more than half of the site contains 30+% slopes. Northern part of site is within the range of the federally and state-listed endangered Santa Cruz long-toed salamander, and the site is within a mapped PAD-US area.
PAS-27	68	052-021-33	PF-AIA, CA-AIA	**Dismissed**. The site is in the coastal zone and more than half of the site contains 30+% slopes.
PAS-28	121	053-131-29	SU-SP	**Dismissed**. The site is within the coastal zone. The project would not be consistent with the Residential General Plan designation, and uses must be consistent with the General Plan/Local Coastal Program land use designation where zoned SU. Most of the site contains slopes greater than 30%, the site is located within the range of the federally and state-listed endangered Santa Cruz long-toed salamander, and the site is within a mapped PAD-US area.
PAS-29	163	046-021-05	A-P	**Dismissed**. The site is in the coastal zone, contains mostly mapped Prime Farmlands, and is in an agricultural preserve (Williamson Act). Most of site is within the range of the federally and state-listed endangered Santa Cruz long-toed salamander.
PAS-30	17	052-521-04	A-AIA	**Dismissed**. The site is in the coastal zone and completely within 100-year floodplain as part of Harkins Slough.

Notes: PF = Public Facilities; SU = Special Use; AIA = Airport Combining District; CZ-E = Coastal Zone; CA = Commercial Agriculture; SP = Salamander Protection Combining District; A = Agriculture; P = Agricultural Preserve and Farmland Security Combining District; PAD-US = Protected Areas Database of the United States.

4.5.2 Alternative Technologies

The project applicant conducted an analysis to identify alternative technologies to the lithium-iron phosphate battery energy storage technology proposed for the project. Several alternative technologies were considered but

were subsequently rejected from further analysis because they did not accomplish most of the project objectives or would result in greater impacts than the proposed project. A discussion of the alternative technologies considered and rejected is provided below.

Compressed Air Energy Storage

Traditional compressed air energy storage uses a compressor to convert electrical energy into high-pressure compressed air that is stored in this increased energy state, typically by injecting the compressed air into existing, deep salt caverns or depleted gas reservoirs that can store compressed air and retain it in the formation for long periods. When electricity is required, the compressed air is expanded through a turbine generator, converting the stored energy back into electricity. Because the expansion process results in significant cooling of the expanding air stream, heat is added back into the compressed air before to avoid unacceptably low temperatures for continuing operation of the turbine. The addition of heat to the expansion process generally requires the combustion of significant quantities of fossil fuel with associated emissions, including criteria and toxic air contaminants, and significant emissions of GHGs. Compressing air and the subsequent reheating results in round-trip efficiencies ranging from 46% to 80% (DOE 2023). Because this technology produces GHG emissions, the traditional compressed air technology would not meet basic project objectives and was rejected in favor of battery energy storage technology.

Pumped Hydro Storage

Pumped hydro storage uses water released by gravity from an upper reservoir through turbine equipment into a lower reservoir separated by at least several hundred to more than 1,000 feet or more of elevation to generate electricity. Typically, power is generated during peak power demand periods or when needed to address system reliability, with an efficiency typically around 70% to 87% (NREL 2024a). During off-peak periods, water from the lower reservoir is pumped back up into the upper reservoir to “recharge” the system. Pumped hydro storage has many positive characteristics, including a long lifespan (50+ years), long storage durations, and the provision of synchronous generation (including rotational inertia) to the grid. However, pumped hydro storage would require much larger reservoirs and surface elevation differentials than are required for battery energy storage technology. The creation of large reservoirs would require inundation of a much larger area than the proposed project, and may result in much greater land use, biological, and visual resources impacts than the proposed project. Viable sites are not located near the Green Valley Substation. In addition, the technology is much more capital intensive per installed megawatt than the battery energy storage technology. Finally, pumped hydro would not meet a basic project objective of deploying a utility-scale BESS. For these reasons, this alternative was rejected as not meeting key project objectives and because it would not substantially reduce the impacts associated with the project.

Flywheel Energy Storage

Flywheels store energy mechanically by spinning a mass at high speed. This stored kinetic energy can be converted back into electricity when needed, making the flywheels a potential alternative to batteries for energy storage. Excess electricity is used to spin a flywheel rotor (a heavy, spinning mass) to a high speed. When electricity is needed, the flywheel's rotational energy is converted back into electricity by a generator, with a round-trip efficiency of 70% to 95% (EESI 2019). Flywheels can deliver high power output quickly and can have a long lifespan with minimal maintenance; however, flywheels typically have lower energy density compared to batteries, making them more suited for short-duration, high-power applications. In addition, the cost of flywheel systems can be higher than batteries, although they may have lower maintenance costs over their lifetime. Finally, flywheel energy storage would not meet a basic project objective of deploying a utility-scale BESS. Flywheel energy technology was rejected

from further analysis because it is not a proven technology at the scale of the proposed project, has energy output issues, would not accomplish the basic project objectives, and would not substantially reduce the impacts associated with the proposed project.

Hydrogen Energy Storage

Hydrogen energy storage for electricity involves using electrolysis to convert surplus electricity into hydrogen, storing the hydrogen for later use, and then converting the stored hydrogen back into electricity through fuel cells or combustion. This process offers a way to store excess energy from renewable sources like solar; however, there are many challenges with hydrogen energy storage technology. The main challenges stem from hydrogen's low energy density, flammability, low round-trip efficiency of 20% to 45% (EESI 2019), and potential for leakage. Efficiently storing and transporting hydrogen requires specialized infrastructure and can lead to energy losses or safety concerns. Materials used for storage can be susceptible to hydrogen embrittlement. Hydrogen has a much lower energy density per unit volume compared to traditional fuels, meaning more space is needed to store the same amount of energy. This necessitates larger storage tanks or more complex storage systems. To achieve higher storage density, hydrogen can be compressed to high pressures or liquefied at very low temperatures, requiring significant energy input and specialized infrastructure. The processes of compressing or liquefying hydrogen can lead to energy losses, reducing the overall efficiency of the storage system. In addition, hydrogen is a highly flammable gas that can ignite easily and burn with a nearly invisible flame, posing safety risks during storage, transportation, and use, and hydrogen's small molecular size makes it prone to leakage through porous materials or even through previously impermeable materials, raising concerns about containment. Developing materials that are both strong, lightweight, and resistant to hydrogen embrittlement while being cost-effective is a significant challenge, and building and maintaining the infrastructure for hydrogen production, storage, and transportation can be expensive to manufacture and maintain. The overall efficiency of hydrogen storage and use (including production, storage, and utilization) can also be low. Hydrogen energy storage was rejected from further analysis because it is not a proven technology at the scale of the proposed project; has energy, fire, and safety issues; and would not substantially reduce the impacts associated with the proposed project.

Flow Battery Energy Storage

Redox flow batteries operate on the principle of redox reactions, where oxidation and reduction processes occur in a fluid electrolyte. The main components of a flow battery include two tanks of electrolyte solutions, one for the catholyte (positive side) and one for the anolyte (negative side), and a cell stack where the electrochemical reactions take place. Redox flow batteries store energy in liquid electrolytes, which are pumped from external reservoirs into the cell stack during charging and discharging cycles. Vanadium is currently employed in most flow batteries; however, several flow battery technologies that do not contain vanadium are emerging, such as zinc-bromine, iron, and organic-based and sodium-based flow batteries (EPRI 2024).

Because the active electrolytic material is separated from the reactive electrodes in the battery, redox flow batteries have a much higher level of safety relative to other electrochemical energy storage technologies. Additional advantages include long life cycle, low fire risk due to low flammability or battery and electrolyte material, and easy maintenance. However, compared to lithium-ion batteries, redox flow batteries have lower energy and power densities, and typically involve more space-intensive system infrastructure. Redox flow batteries also tend to have lower round-trip efficiencies (60% to 85% [EESI 2019]) compared to lithium-ion batteries, and have higher costs due, in part, to a lack of large-scale manufacturing capacity and the need for pumps, sensors, and other power and flow management systems (NREL 2024b). Redox flow battery technology was rejected from further analysis because it has lower energy and power densities requiring more space and additional equipment compared to

lithium-ion batteries, and is not an economically feasible, commercially available, and proven technology at the scale of the proposed BESS.

Sodium Ion Battery Energy Storage

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 corresponds 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 scare minerals (NREL 2024b).

In addition, sodium-sulfur batteries have high reliability and can be easily installed, relocated, and maintained; however, 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 2024b). Sodium-sulfur batteries have similar round-trip efficiencies to lithium iron phosphate BESSs. Sodium-sulfur battery technology was rejected from further analysis because it is not an economically feasible, commercially available, and proven technology at the scale of the proposed BESS; has its own fire and safety issues; and would not substantially reduce the impacts associated with potential fire hazards compared to the proposed project.

4.5.3 Electrical Transmission System Improvements Alternative

The electric grid in Santa Cruz County is vulnerable to service outages due to extreme local weather events and fire risk, as well as rolling blackouts due to extreme weather and fire risk in other parts of California that could prevent power from reaching Santa Cruz County. The portion of the grid serving the majority of the population in Santa Cruz County (Watsonville, Aptos, Santa Cruz, Scotts Valley, and surrounding communities) was slated for new transmission upgrades by PG&E. Known as the Santa Cruz 115kV Reinforcement Project, the objective of this project was to add a second 115 kV circuit between the Green Valley Substation and Rob Roy Substation to increase system reliability and prevent potential large-scale service interruptions if there are overlapping outages in the existing local electricity supply system (PG&E 2012). This project would have increased transmission system reliability in the Santa Cruz area during outages by adding a second 115 kV circuit between Green Valley Substation and Rob Roy Substation to prevent potential large-scale service interruptions if there were overlapping outages in the existing local electricity supply system. The project also included converting the existing 7.1 miles of single-circuit 115 kV power line to a double-circuit 115 kV power line by replacing existing wood poles with tubular steel poles; constructing a new, approximately 1.7-mile-long single-circuit 115 kV power line connecting the Green Valley–Camp Evers 115 kV Power Line to Rob Roy Substation; and modifying the existing Rob Roy Substation and existing power lines to accommodate the new circuit. The new circuit would have provided two sources of power in the event of an outage on either the southern line between Green Valley Substation and Rob Roy Substation or on the existing northern line between Green Valley Substation and Camp Evers Substation (California Public Utilities Commission 2015). Figure 4-4, 2014 PG&E Proposed Transmission System Upgrades, shows the location of the proposed transmission lines.

The project was approved by the CPUC, but PG&E did not implement the project due, in part, to community opposition regarding environmental impacts of the new transmission lines. At that time, CAISO also agreed with PG&E that the project was not needed within the 10-year planning horizon, and approved cancellation of the project.

Thus, on February 9, 2015, PG&E filed its motion to dismiss the application, without prejudice, which was granted by the CPUC on March 25, 2015 (California Public Utilities Commission 2015).

Santa Cruz County's electrical power grid consists of two, single-circuit 115 kV power lines located in separate power line corridors: the Green Valley–Rob Roy–Paul Sweet Corridor on the south side of the service area, and the Green Valley–Camp Evers Corridor to the north. The substations that connect to these corridors are the Green Valley Substation at the southeasterly end, Camp Evers Substation at the northwesterly end (from Camp Evers Tap), and Paul Sweet Substation and Rob Roy Substation along the southern corridor. The Green Valley Substation provides almost 100% of the Santa Cruz area loading and serves electric customers throughout Santa Cruz County. When equipment fails at a substation or along one of these corridors, electricity is rerouted to the area distribution substations via the alternate corridor. As the "impaired" system tries to serve all customers, the Santa Cruz area power system is at risk for overload or low voltage should another system element fail (PG&E 2012).

Electric demand has increased significantly since 2014 and is anticipated to continue due to population growth, the electrification of transportation (electric vehicles), and the increased use of AI. The existing 115 kV system serving the Santa Cruz area was updated and put into service during the 1970s, but no major upgrades have been undertaken since then, with the exception of the addition in 1997 of voltage support equipment at the Paul Sweet Substation to help improve local system voltages. In the 1970s, the reported population served by this system totaled approximately 50,000 people, and peak electrical demand was less than 110 MW (PG&E 2012). The service area had a reported population of approximately 90,000 in 2012 when the Santa Cruz 115 kV Replacement Project was proposed, nearly double that of 1970 (PG&E 2012). Population in Santa Cruz County has continued to grow over the past 10-plus years, but at a slower rate of approximately 0.5% per year (County of Santa Cruz 2022). Based on this growth rate, it is estimated that the service area population has increased by approximately 6,100 residents since 2012.

An alternative that would upgrade the existing electrical transmission system such as what was proposed and considered in 2012 to 2014, or other similar improvement/upgrade to the existing transmission system was considered but rejected from further consideration for the primary reason that the project applicant does not own or control PG&E transmission facilities. An improvement/upgrade would be considered a major improvement that would need to be proposed by the utility owner and that would require further study and other potential regulatory approvals if a project/design were found feasible. Additionally, this alternative would not accomplish the basic project objectives and would not substantially reduce the impacts associated with the proposed project.

4.5.4 Distributed Storage Alternative

An additional potential alternative to the proposed project would be the combination of many smaller, distributed storage projects across the local area. This would require mass scaling to reach an energy storage potential similar to the proposed project on the residential and commercial level, with individual homeowners and companies installing these systems at rates currently not experienced or expected, given market, economic, and other factors. For example, installation of an energy storage system would require installation of solar and/or wind facilities that would generate the energy to be stored. A typical home battery storage system installed in a garage holds 13.5 kilowatt-hours of energy (Tesla 2026) compared to 800,000 kilowatt-hours that the proposed project would hold. This would mean that approximately 59,260 homes would need to install home storage systems, along with solar energy systems to produce the energy that could be stored, to reach the level of energy storage the project proposes. Additionally, those systems would be operated independently by homeowners, foregoing the system reliability benefits of a utility-scale resource like the propose project. This would require financial outlay and the

decision of thousands of homeowners and business owners, which is an infeasible option considering there could not be any type of coordinated commitment to complete these installations.

4.5.5 Alternatives Carried Forward

Based on the foregoing reviews, four alternatives were carried forward for further analysis:

- **Alternative 1:** No Project Alternative
- **Alternative 2:** Reduced Project Alternative
- **Alternative 3:** Alternative Project Site#1 (Grimmer Road Alternative Site)
- **Alternative 4:** Alternative Project Site #2 (Pioneer Road Alternative Site)

4.6 Analysis of the No Project Alternative

4.6.1 No Project Alternative Description

The No Project Alternative is required so that the California Energy Commission (CEC) can compare the impacts of approving the proposed project with the impacts of not approving the proposed project. The No Project Alternative must discuss the existing conditions and what would be reasonably expected to occur in the foreseeable future if the proposed project were not approved based on current plans and available infrastructure and community services. The No Project Alternative is the circumstance under which the proposed project would not proceed, the project site would remain in its existing condition, potential impacts associated with the proposed project would be avoided, and project benefits were be foregone.

Under the No Project Alternative, the project would not be implemented at the proposed location and, as discussed in Section 4.5.1, no feasible sites were identified in proximity to the other substations within unincorporated Santa Cruz County. Under the No Project Alternative, the project site would remain in its current condition as an orchard. However, as discussed in Section 3.6, Land Use, the agricultural viability of the site is limited, and once the existing orchard is no longer feasible, it is not known what crops could or would be used to replace the existing agricultural use on the site.

4.6.2 Comparison of the No Project Alternative with the Proposed Project

Under the No Project Alternative, none of the potential direct or indirect environmental impacts associated with construction, operation, and decommissioning of the proposed project would occur. However, as indicated in Section 4.2.2, Significant Impacts, all of the proposed project's potential significant effects would be avoided, minimized, or mitigated to a level of less than significant under CEQA. Moreover, for each subject matter discussed in this application, the applicant can demonstrate compliance with applicable laws, ordinances, regulations, and standards. The No Project Alternative would result in no impacts, and therefore would avoid the potentially significant effects of the proposed project.

If the No Project Alternative results in the project not being constructed, none of the applicant's basic project objectives would be achieved. The No Project Alternative would forego the electric system and GHG policy benefits associated with up to 200 MW of energy storage using available system capacity at the existing Green Valley

Substation (#1), and thus would not provide additional service to the regional electric transmission system (#3), or provide energy storage capacity and dispatch for the electrical grid (#9). The No Project Alternative would mean that the proposed project's energy storage would not be available to balance intermittent renewable generation and serve as an additional capacity resource that would enhance grid reliability (#4). The No Project Alternative also fails to provide new energy storage capacity to help meet the CPUC's decision requiring 11,500 MW of new capacity additions to the CAISO system (#4). The No Project Alternative would not provide additional capacity to assist with serving peak demand by charging when demand is low and discharging when demand is high (#5). Therefore, the No Project Alternative would not accommodate the integration of additional intermittent renewable energy sources, such as wind and solar, and reduce the need to operate natural gas power plants (#6).

The No Project Alternative also would not achieve objectives that benefit Santa Cruz County. The No Project Alternative would not provide additional local capacity to enhance grid reliability (#7), and thus, would not help ensure electrical transmission reliability and prevent outages and blackouts in Santa Cruz County (#11). The No Project Alternative would not assist the County in meeting its climate resiliency and clean energy goals (#8), or in meeting its net-zero GHG emissions or state's 100% zero-carbon electricity goals by 2045 (#12). Similarly, the No Project Alternative would not provide economic benefits to the County by creating prevailing wage jobs and local community benefits (#2). The project would not be constructed and would not provide required upgrades to access an existing water service that would have been required to meet California Fire Code and local emergency response requirements (#10).

The No Project Alternative could result in inadequate system reliability (more blackouts); greater fuel consumption, GHG emissions, and air pollution (and therefore increased climate change); and other environmental impacts in California because less-efficient energy storage would be developed as a result of the proposed project not being constructed. The No Project Alternative would also deprive the area of a significant construction employment opportunity with associated purchases of local goods and services, as well as jobs associated with the construction, operation, and maintenance of the facility; ongoing property tax revenue; and other community benefits. Therefore, because no development would not satisfactorily meet the project objectives specified above, the No Project Alternative was rejected in favor of the proposed project.

4.7 Analysis of the Reduced Project Alternative

4.7.1 Reduced Project Alternative Description

Under the Reduced Project Alternative, the project's capacity would be reduced from 200 MW to 100 MW. Under this alternative, the development footprint would be approximately 11 acres, which is a reduction of approximately 5 acres, or approximately 30% compared to the proposed project. Under this alternative, other project components would remain the same, except stormwater detention facilities would be slightly reduced. All other project components, including the gen-tie line, access roads, and water system improvements, would be the same as with the proposed project. The gen-tie line would remain unchanged under the Reduced Project Alternative because there would still be the need to connect the BESS facility to the adjacent Green Valley Substation. The length of construction would not be substantially reduced under this alternative because grading and installation activities would not be substantially reduced. It is estimated that the construction period would be reduced by approximately 3 months.

4.7.2 Comparison of the Impacts of the Reduced Project Alternative to the Proposed Project

Air Quality/Greenhouse Gas Emissions

The Reduced Project Alternative would require a slightly reduced construction period than the proposed project (reduced by approximately 3 months), which would slightly reduce air quality emissions during construction. However, although the reduction in the development footprint and construction period would reduce overall emissions, the criteria pollutant emission thresholds are based on a daily emissions rate, and the per-day activities are expected to be similar to the proposed project. Thus, it is expected that the Reduced Project Alternative's potential impacts related to daily criteria pollutant emissions would be similar to the less-than-significant impact identified for the proposed project.

The GHG emissions generated by the Reduced Project Alternative would be slightly lower than the GHG emissions generated from construction of the proposed project due to a smaller facility and slightly shortened construction period. However, this alternative would deprive the area of some of the proposed project's beneficial impacts, including adding a larger BESS to the grid that would store additional excess energy produced during periods of high generation and dispatch more clean energy to the grid when renewable resources are unavailable. This alternative would reduce the total capacity of electricity stored from 200 MW to 100 MW; therefore, although it would help bridge the gaps during peak demand periods or times when solar and wind output is low, the Reduced Project Alternative would not help bridge gaps during peak demand to the same extent as the proposed project would because of its reduced total capacity. Thus, the beneficial impacts identified for the proposed project would be reduced under the Reduced Project Alternative without added storage for renewable energy sources.

Biological Resources

Under the Reduced Project Alternative, impacts to biological resources would be similar to the proposed project. Mitigation measures (pre-construction surveys) would continue to be required to reduce potentially significant impacts to nesting birds to a less-than-significant level, as with the proposed project.

Cultural Resources

Under the Reduced Project Alternative, the impact area would be reduced by approximately 5 acres (30%), and therefore, would reduce potential impacts to undiscovered cultural resources and undiscovered human remains.

Geological Hazards and Resources

The Reduced Project Alternative would reduce the impact area by approximately 5 acres (30%), but the Reduced Project Alternative would be subject to the same geological hazards as the proposed project. The Reduced Project Alternative's potential impacts related to geological hazards would remain less than significant, similar to the proposed project.

Hazardous Materials Handling

The potential impacts from hazards and hazardous materials would be reduced because the development footprint would be reduced by approximately 5 acres (30%), and the construction period would be reduced by approximately 3 months. However, the Reduced Project Alternative would continue to have hazardous materials impacts similar

to that of the proposed project. Potential impacts related to handling and storing hazardous materials during construction- and operation-related activities would still occur under this alternative. Thus, hazards and hazardous materials impacts due to the Reduced Project Alternative would be less than significant with mitigation, similar to the proposed project.

Land Use

Like the proposed project, the Reduced Project Alternative is anticipated to have less-than-significant impacts related to land use and planning because it would comply and/or be consistent with all applicable land use and planning documents. The potentially significant impact of conversion of agricultural lands would be reduced because the development footprint would be reduced by approximately 5 acres (30%), but the impact would not be avoided or reduced under the Reduced Project Alternative.

Noise

The potential impacts from hazards and hazardous materials would be reduced because the development footprint would be reduced by approximately 5 acres (30%), and the construction period would be slightly reduced. Thus, the potential construction noise impacts under the Reduced Project Alternative would be slightly less than that of the proposed project. The Reduced Project Alternative would be required to implement mitigation measures, such as locating stationary noise sources as far as feasible from sensitive receptors, equipping all construction equipment with properly operating and maintained mufflers, and implementing temporary noise barriers, to ensure that noise generation from construction and decommissioning activities would not exceed County standards or noise ordinances. These mitigation measures would reduce potential impacts to less than significant, similar to the proposed project.

Paleontological Resources

The Reduced Project Alternative would reduce the impact area by approximately 5 acres (30%), which would also reduce the potential impacts to paleontological resources as a result of grading. This alternative would reduce potential impacts to areas underlain by middle Holocene to Pleistocene age sediments due to the reduction in the development footprint. Nonetheless, the Reduced Project Alternative would still require grading that could result in a potential impact to paleontological resources. The Reduced Project Alternative would require mitigation measures, such as monitoring and implementation of a Paleontological Resources Impact Mitigation Program, to reduce the potential impact to less than significant, similar to the proposed project.

Public Health

The Reduced Project Alternative would reduce the development footprint by approximately 5 acres (30%). Thus, the Reduced Project Alternative would slightly reduce the potential public health impacts during construction and operation. The Reduced Project Alternative's potential cancer risk and non-cancer health impacts would continue to be below a level of significance with implementation of mitigation measures, such the use of Tier 4 or better engines, similar to the proposed project. Thus, potential less-than-significant public health impacts identified for the proposed project would be similar to, but slightly reduced under, the Reduced Project Alternative.

Socioeconomics

The Reduced Project Alternative would reduce the development footprint by approximately 5 acres (30%), and would reduce the construction period by approximately 3 months. Thus, the Reduced Project Alternative would have fewer socioeconomic impacts related to population growth, housing, and environmental justice. The Reduced Project Alternative would also lessen some of the beneficial impacts that would be derived because there would be fewer tax benefits from the capital expenditure, fewer construction employment opportunities, and less associated purchases of local goods and services when compared to the proposed project, as well as fewer jobs associated with the operation and maintenance of the facility. Also, the ongoing property tax revenue from the site would be reduced. Thus, all socioeconomic impacts, including the loss or reduction of the beneficial impacts identified for the proposed project, would be similar under the Reduced Project Alternative.

Soils

The Reduced Project Alternative would reduce the development footprint by approximately 5 acres (30%), which would also reduce the amount of grading that would be required during construction, but the Reduced Project Alternative would still require conventional grading. Therefore, the Reduced Project Alternative would result in a slight reduction of impacts related to soils from soil erosion, loss of topsoil, and soil constraints compared to the proposed project.

Traffic and Transportation

The Reduced Project Alternative would still require mitigation measures in the form of a transportation demand management plan and a traffic control plan related to construction traffic. Operation of the proposed project would not generate a significant number of trips, and thereby would not cause a substantial amount of vehicle miles traveled, and traffic impacts from operation would be less than significant. The Reduced Project Alternative would generate reduced vehicle miles traveled during construction and operations compared to the proposed project, but would still require the same type of mitigation measures. As such, the less-than-significant potential transportation impacts under this alternative would be less than that of the proposed project.

Visual Resources

Under the Reduced Project Alternative, the development footprint would be reduced by approximately 5 acres (30%), which would reduce the acreage and overall massing of the facility. Nonetheless, the Reduced Project Alternative would continue to result in a potential less-than-significant impact to visual quality and character, similar to the proposed project. This alternative would be designed with the same project design features as the proposed project, including landscaping to the perimeter of the site; therefore, potential impacts related to visual resources from the Reduced Project Alternative would remain less than significant, similar to the proposed project. In addition, similar to the proposed project, potential impacts from light and glare would remain less than significant under this alternative.

Waste Management

The Reduced Project Alternative would reduce the development footprint by approximately 5 acres (30%). Thus, the Reduced Project Alternative would lessen the proposed project's impacts related to waste disposal during construction, operation, and decommissioning. Although the proposed project's impacts would be below a level of significance with no mitigation measures required, the Reduced Project Alternative would lessen these potential

impacts considering less development would occur on the site. Thus, potential impacts from waste management identified for the proposed project would be slightly reduced under the Reduced Project Alternative.

Water Resources

The Reduced Project Alternative would reduce the impact area by approximately 5 acres. Similar to the proposed project, potential hydrology and water quality impacts related to issues such as violating water quality standards; decreasing groundwater supplies and recharge; altering existing drainage patterns; increasing stormwater runoff; or releasing pollutants due to flood, tsunami, or seiche would still occur under this alternative. The proposed project's potential water resources impacts would be slightly reduced with the Reduced Project Alternative due to the reduction of the development footprint.

Wildfire

The project site is on Local Responsibility Area lands, but is not within a fire hazard severity zone. Although potential wildfire impacts would be slightly reduced because the development footprint would be reduced by approximately 5 acres, the Reduced Project Alternative would continue to have potential wildfire impacts similar to that of the proposed project. Potential impacts related to construction-related wildfire risk, operation-related wildfire risk, and the installation of infrastructure that may exacerbate fire risk would still occur. Thus, potential wildfire impacts due to the Reduced Project Alternative would be less than significant with implementation of mitigation, similar to the proposed project.

Worker Health and Safety

Although the Reduced Project Alternative would reduce the development footprint by approximately 5 acres (30%), this alternative would still have potential worker health and safety impacts related to construction and operation. The Reduced Project Alternative would require implementation of and compliance with construction training and safety programs, operations health and safety programs, safety training, fire protection training, and water quality procedures, the same as the proposed project. Thus, all potential worker health and safety impacts identified for the proposed project would be the same under the Reduced Project Alternative.

4.7.3 Summary of the Reduced Project Alternative Analysis

The Reduced Project Alternative would reduce the development footprint by approximately 5 acres. This reduction of the development footprint by 30% would reduce most impacts identified for the proposed project, but the Reduced Project Alternative would not avoid identified significant impacts, except for the impact to wetland habitat. Other significant impacts identified for the proposed project would still occur with the Reduced Project Alternative, which would also require mitigation. Less-than-significant impacts would be slightly reduced in severity, but would not be eliminated with the Reduced Project Alternative.

The Reduced Project Alternative would partially meet most project objectives, but would not meet one basic objective and would achieve other objectives to a lesser degree than the proposed project. This alternative would not fully meet the objective to construct and operate a 200 MW BESS facility (#1), although it would still be connected to the adjacent, existing Green Valley Substation. Other project objectives would be met, including providing additional service to the regional electric transmission system (#3), energy storage capacity and dispatch for the electrical grid (#9), and new energy storage capacity to help meet the CPUC's decision requiring 11,500 MW of new capacity additions to the CAISO system (#4). The Reduced Project Alternative would provide energy storage

to balance intermittent renewable generation and serve as an additional capacity resource that would enhance grid reliability (#4), but with less capacity than with the proposed project. Similarly, the Reduced Project Alternative would provide additional capacity to assist with serving peak demand by charging when demand is low and discharging when demand is high (#5); accommodate the integration of additional intermittent renewable energy sources, such as wind and solar; and reduce the need to operate natural gas power plants (#6), but with less capacity than the proposed project.

The Reduced Project Alternative would meet objectives that benefit the County by providing additional local capacity to enhance grid reliability (#7), and helping ensure electrical transmission reliability and prevent outages and blackouts in Santa Cruz County (#11), but to a lesser degree than the proposed project. The Reduced Project Alternative would assist the County in meeting its climate resiliency and clean energy goals (#8) and meeting its net-zero GHG emissions or state's 100% zero-carbon electricity goals by 2045 (#12). Similarly, the Reduced Project Alternative would provide economic benefits to the County by creating prevailing wage jobs and local community benefits (#2), would provide required upgrades to access existing water service that would have been required to meet California Fire Code and local emergency response requirements (#10), and would ensure public safety with provision of setbacks to sensitive land uses and compliance with other regulatory requirements (#13).

4.8 Analysis of the Grimmer Road Alternative Site

4.8.1 Grimmer Road Alternative Site Description

As shown in Figure 4-2, the Grimmer Road Alternative Site is adjacent to the project site to the southeast. The Grimmer Road site consists of approximately 16 acres and is accessed via Grimmer Road that extends north from Holohan Road. The site is generally flat, but the eastern edge is located within a 100-year floodplain, and thus, the development area would be reduced in order to site the facility outside of a mapped floodplain mapped by the Federal Emergency Management Agency. The site is partially developed with the Transportation Office of the Pajaro Valley Unified School District and contains several buildings and parking/storage of buses. The site is surrounded by parcels that are generally in agricultural production of various crops. Under this alternative, a slightly longer (approximately 0.6 miles longer than the proposed project) gen-tie route would be required because the site is south of the project site. The site is not owned by the project applicant, and it is not known whether the property could be acquired by the project applicant, thus raising a potential issue of feasibility if the site were not available for purchase by the project applicant.

4.8.2 Grimmer Road Alternative Site Comparison

All of the potential impacts at the project site were found to be less than significant with or without mitigation, except for some topics for which no impact was identified. The Grimmer Road Alternative Site would result in similar impacts as the proposed project, except for agricultural land conversion, biological resources, geological hazards, visual resources, and water resources.

The Grimmer Road site is not on mapped Farmlands (i.e., Prime, Unique or Farmland of Statewide Importance), whereas the portion of the project site on which the BESS would be located is mapped as Farmlands of Statewide Importance with a small area of Prime Farmlands and Grazing Land. The proposed project would convert 15.14 acres of land mapped as Farmland of Statewide Importance (14.24 acres), Prime Farmland (0.55 acres), and Grazing Land (0.36 acres). The Grimmer Road Alternative Site would not result in conversion of mapped Farmland, and therefore would avoid a potentially significant (but mitigated) impact resulting from the proposed project.

The Grimmer Road site would avoid the potentially significant impact to wetlands identified for the proposed project, although site investigations would be required to determine whether any biological resources are present on the site. The entire site is within a mapped County fault zone that is partially within a mapped state fault zone. Geological investigations and field testing would be needed to determine whether or not a fault is present on the property, and if so, setbacks would be required, which could reduce the developable area of the site to less than 15 acres, rendering the alternative infeasible. As indicated above, the eastern portion of the site is within a 100-year floodplain mapped by the Federal Emergency Management Agency, which would require siting facilities outside of this area and other potential improvements to provide adequate protection from flooding. This alternative could result in a potentially significant impact related to hydrology and flooding.

The existing buildings on the Grimmer Road Alternative Site are visible from Holohan Road, and construction on this site also would be visible, resulting in a potentially significant impact related to degradation of the visual quality of the surrounding area. The BESS cells, while of minimal height, would encompass the majority of the site and appear more massive than other structures in the vicinity that are mostly agricultural structures. Therefore, the Grimmer Road Alternative Site could result in a new significant impact compared to the proposed project.

As discussed above, CEQA requires consideration of "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 but would avoid or substantially lessen any of the significant effects of the project" (Title 14, CCR 15126.6[a]). As indicated above, the Grimmer Road Alternative Site would avoid one potentially significant project impact, but would also result in three new potentially significant impacts: geologic hazards, water resources (flood hazards), and visual resources.

The Grimmer Road Alternative Site would meet most project objectives, and would partially meet one basic objective. This alternative would not fully meet the objective to construct and operate a 200 MW BESS facility (#1) adjacent to the Green Valley Substation, although it would still be connected to the existing Green Valley Substation. Other project objectives would be met, including providing additional service to the regional electric transmission system (#3), provide energy storage capacity and dispatch for the electrical grid (#9), and provide new energy storage capacity to help meet the CPUC's decision requiring 11,500 MW of new capacity additions to the CAISO system (#4). The Grimmer Road Alternative Site would provide energy storage to balance intermittent renewable generation, and serve as an additional capacity resource that would enhance grid reliability (#4); would provide additional capacity to assist with serving peak demand by charging when demand is low and discharging when demand is high (#5); and accommodate the integration of additional intermittent renewable energy sources, such as wind and solar, and reduce the need to operate natural gas power plants (#6).

The Grimmer Road Alternative Site would meet objectives that benefit the County by providing additional local capacity to enhance grid reliability (#7), and helping ensure electrical transmission reliability and prevent outages and blackouts in Santa Cruz County (#11). This alternative also would assist the County in meeting its climate resiliency and clean energy goals (#8) and meeting its net-zero GHG emissions or state's 100% zero-carbon electricity goals by 2045 (#12). The Grimmer Road Alternative Site would provide economic benefits to the County by creating prevailing wage jobs and local community benefits (#2), would provide required upgrades to access existing water service that would have been required to meet California Fire Code and local emergency response requirements (#10), and would ensure public safety with provision of specified setbacks to sensitive land uses and compliance with other regulatory requirements (#13).

As shown in the analysis above, the Grimmer Road Alternative Site would avoid or substantially lessen all of the potentially significant impacts of the proposed project, but may result in one new potentially significant impact, although project objectives could be met. The Grimmer Road site is not located adjacent to the Green Valley

Substation and would require construction of a slightly longer gen-tie line and have additional impacts related to excavation and installation.

In addition, it is not known whether the project applicant would be able to obtain control of this site, which is owned by a government agency and is not currently for sale. Pursuant to the state Surplus Lands Act, public agencies must follow a process for disposition of "surplus" land. The Surplus Lands Act (Government Code Sections 54220–54234) aims to make local public land that is no longer needed for government purposes available for building affordable homes, and when a local agency (e.g., city, county, district, housing authority, redevelopment agency) seeks to dispose of land it owns, it must comply with the Surplus Lands Act. Dispositions of land under the Surplus Lands Act include both sales and leases of land. A disposition occurs when a local agency declares land to be surplus or exempt surplus and then sells or leases the land. Land must be declared either "surplus land" or "exempt surplus land," as supported by written findings, before a local agency may take any action to dispose of it consistent with an agency's policies or procedures. Prior to taking any action to dispose of surplus land or participating in negotiations to dispose of surplus land with a prospective transferee, a local agency must send a written Notice of Availability to specified parties to indicate availability of the property for the purpose of developing low- and moderate-income housing (California Department of Housing and Community Development 2024, 2026). Even if the Grimmer Road Alternative Site were determined to be surplus property, the County, as the property owner, would need to follow the process prescribed by state law, which could lead to offers for development of affordable housing. Thus, there is considerable uncertainty as to whether the site could become available to the project applicant.

The Grimmer Road Alternative Site is less desirable than the proposed project because of its "(i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts" (Title 14, CCR 15126.6[c]).

4.9 Analysis of the Pioneer Road Alternative Site

4.9.1 Pioneer Road Alternative Site Description

The Pioneer Road Alternative Site is approximately 2.4 miles north of the project site and Green Valley Substation. The Pioneer Road Alternative Site consists of approximately 48 acres and is accessed via Pioneer Road. The site is undeveloped and generally flat, except for the northern portion of the site that contains areas of 30% to 50%-plus slopes. The site is adjacent to residential uses, and it is estimated that the developable area would be reduced to approximately 20 to 24 acres with provision of 1,000-foot buffers, as set forth in the project objectives and site selection criteria identified in Section 4.5.1.1. This is a conservative assumption because the criterion only calls for a 1,000-foot setback from an existing hospital, school, commercial day care center, or residential care facility for older adults, and application for this site would provide the setback to any existing residential use. Under this alternative, a substantially longer gen-tie route would be required compared to the proposed project (approximately 2.4 more miles than the proposed project) due to the distance of the site from the Green Valley Substation. The site is not owned by the project applicant, and it is not known whether the property could be acquired by the project applicant, thus raising a potential issue of feasibility if the site were not available for purchase.

4.9.2 Pioneer Road Alternative Site Comparison

All of the potential impacts at the project site were found to be less than significant with or without mitigation, except for some topics for which no impact was identified. The Pioneer Road Alternative Site would result in similar

impacts as the proposed project, except for agricultural land conversion, biological resources, geological hazards, and noise.

The Pioneer Road site is not located on mapped Farmlands (e.g., Prime, Unique, or Farmland of Statewide Importance), whereas the portion of the project site where the BESS would be located is mapped as Farmland of Statewide Importance with a small area of Prime Farmlands and Grazing. The proposed project would convert 15.14 acres of land mapped as Farmland of Statewide Importance (14.24 acres), Prime Farmland (0.55 acres), and Grazing Land (0.36 acres). The Pioneer Road Alternative Site would not result in conversion of mapped Farmland, and therefore would avoid a potentially significant, but mitigated, impact resulting from the proposed project.

The Pioneer Road site would avoid the potentially significant impact to wetlands identified for the proposed project, although site investigations would be required to determine whether any biological resources are present on the site. The eastern half of the Pioneer Road site is within mapped County and state fault zones. Geological investigations and field testing would be needed to determine whether or not a fault is present on the property, and if so setbacks would be required, which could reduce the developable area of the site to less than 15 acres, rendering the alternative infeasible.

Residential uses are located on nearly all sides of the property, and the potentially significant impact associated with noise could be more serve than with the proposed project due to proximity of more residents adjacent to the site. Additionally, installation of the longer gen-tie line under this alternative would result in a longer construction period and potentially significant impacts related to air quality. Therefore, the Pioneer Road Alternative Site could result in a new significant impacts compared to the proposed project.

As discussed above, CEQA requires consideration of "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 but would avoid or substantially lessen any of the significant effects of the project" (Title 14, CCR 15126.6[a]). As indicated above, the Pioneer Road Alternative Site would avoid one potentially significant proposed project impact, but would also result in one new potentially significant impact.

The Pioneer Road Alternative Site would meet most project objectives, and would partially meet one basic objective. This alternative would not fully meet the objective to construct and operate a 200 MW BESS facility (#1) adjacent to the Green Valley Substation, although it would still be connected to the existing Green Valley Substation. Other project objectives would be met, including providing additional service to the regional electric transmission system (#3), energy storage capacity and dispatch for the electrical grid (#9), and new energy storage capacity to help meet the CPUC's decision requiring 11,500 MW of new capacity additions to the CAISO system (#4). The Pioneer Road Alternative Site would provide energy storage to balance intermittent renewable generation, and serve as an additional capacity resource that would enhance grid reliability (#4); would provide additional capacity to assist with serving peak demand by charging when demand is low and discharging when demand is high (#5); and would accommodate the integration of additional intermittent renewable energy sources, such as wind and solar, and reduce the need to operate natural gas power plants (#6).

The Pioneer Road Alternative Site meet objectives that benefit the County by providing additional local capacity to enhance grid reliability (#7), and helping to ensure electrical transmission reliability and prevent outages and blackouts in Santa Cruz County (#11). This alternative also would assist the County in meeting its climate resiliency and clean energy goals (#8) and meeting its net-zero GHG emissions or state's 100% zero-carbon electricity goals by 2045 (#12). Similarly, the Pioneer Road Alternative Site would provide economic benefits to the County by creating prevailing wage jobs and local community benefits (#2), would provide required upgrades to access existing

water service that would have been required to meet California Fire Code and local emergency response requirements (#10), and would ensure public safety with provision of specified setbacks to sensitive land uses and compliance with other regulatory requirements (#13).

As shown in the analysis above, the Pioneer Road Alternative Site would not avoid or substantially lessen most of the potentially significant impacts of the proposed project, and may result in one or more new potentially significant impacts, although project objectives could be met. The Pioneer Road Alternative Site is not adjacent to the Green Valley Substation and would require construction of a substantially longer gen-tie line, with additional impacts related to excavation and installation as well as added costs. In addition, it is not known whether the project applicant would be able to obtain control of this site, which is owned by a government agency and is not currently for sale. In conclusion, the Pioneer Road Alternative Site is less desirable than the proposed project because of its "(i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts" (Title 14, CCR 15126.6[c]).

4.10 Summary of Alternatives

A summary of the alternatives compared to each project objective is provided in Table 4-3. The asterisks indicate that even if an alternative meets a project objective, it only partially achieves the objective compared to the proposed project. A summary of potential impacts of the alternatives compared to the proposed project by resource topic is provided in Table 4-4.

Table 4-3. Alternatives Summary Relative to Project Objectives

No.	Project Objective	Proposed Project	No Project Alternative	Reduced Project Alternative	Grimmer Road Alternative Site #1	Pioneer Road Alternative Site #2
1	Construct and operate a 200 MW BESS facility in Santa Cruz County with an interconnection utilizing available system capacity at the adjacent, existing PG&E Green Valley Substation.	Yes	No	Yes*	Yes*	Yes*
2	Provide economic benefits to Santa Cruz County, create prevailing wage jobs, and facilitate local community benefits.	Yes	No	Yes*	Yes	Yes
3	Provide a service to the regional electric grid by receiving energy (charging) from the PG&E electric transmission system, storing energy on site, and then later delivering energy (discharging) back to the Point of Interconnection (POI).	Yes	No	Yes*	Yes	Yes
4	Add reliability to the California electric grid and help meet the June 2021 California Public Utilities Commission's (CPUC) decision requiring 11,500 MW of new capacity additions to the (California Independent System Operator (CAISO) system.	Yes	No	Yes*	Yes	Yes
5	Provide additional capacity to the electrical grid to assist with serving load during periods of peak demand by charging when demand is low and discharging when demand is high.	Yes	No	Yes*	Yes	Yes
6	Accommodate the integration of additional intermittent renewable energy sources, such as wind and solar, and reduce the need to operate natural gas power plants.	Yes	No	Yes*	Yes	Yes
7	Serve as an additional local capacity resource that would enhance grid reliability.	Yes	No	Yes*	Yes	Yes
8	Assist Santa Cruz County in meeting its climate resiliency and clean energy goals by providing electrical energy storage.	Yes	No	Yes*	Yes	Yes
9	Provide energy storage capacity and dispatch for the electrical grid.	Yes	No	Yes*	Yes	Yes
10	Include all required off-site improvements including a secondary emergency access route and upgrades necessary to provide water service as required to meet California Fire Code and local emergency response requirements.	Yes	No	Yes*	Yes	Yes
11	Help ensure electrical transmission system reliability, that clean renewable energy sources can meet peak demand, and help prevent	Yes	No	Yes*	Yes	Yes

Table 4-3. Alternatives Summary Relative to Project Objectives

No.	Project Objective	Proposed Project	No Project Alternative	Reduced Project Alternative	Grimmer Road Alternative Site #1	Pioneer Road Alternative Site #2
	outages and blackouts in Santa Cruz County in the face of climate change.					
12	Assist Santa Cruz County in meeting its net-zero greenhouse gas emissions and the state's 100% zero-carbon electricality goals by 2045 by contributing energy storage within Santa Cruz County.	Yes	No	Yes*	Yes	Yes
13	Ensure public safety by complying with applicable California Fire Code and National Fire Protection Association standards; providing emergency access and internal fire roads; ensuring 100-foot setbacks from public roads and adjacent parcels (excepting the Green Valley Substation); and excluding BESS modules within 1,000 feet of a parcel containing an existing hospital, school, commercial day care center, or residential care facility for older adults.	Yes	N/A	Yes	Yes	Yes

Notes: N/A = not applicable; MW = megawatt; BESS = battery energy storage system; PG&E = Pacific Gas & Electric.
* Partially achieves project objective.

Table 4-4. Summary of Potentially Significant Effects for the Proposed Project and Project Alternatives

Issue Area	Proposed Project	No Project Alternative	Reduced Project Alternative	Grimmer Road Alternative Site #1	Pioneer Road Alternative Site #2
Air Quality / Greenhouse Gas Emissions	LTS	NI	LTS↓	LTS	LTS↑
Biological Resources – Wetlands	LTSM	NI	LTSM	NI	NI
Biological Resources – Other	LTS	NI	LTS↓	LTS	LTS
Cultural Resources	LTS	NI	LTS↓	LTS	LTS
Geological Hazards and Resources	LTS	NI	LTS↓	LTS↑	LTS↑
Hazardous Materials Handling	LTSM	NI	LTSM	LTSM	LTSM
Land Use – Agriculture	LTSM	NI	LTSM↓	NI	NI
Land Use – Other Topics	LTS	NI	LTS	LTS	LTS
Noise	LTSM	NI	LTSM↓	LTSM↓	LTSM↑
Paleontological Resources	LTSM	NI	LTSM↓	LTSM	LTSM
Public Health	LTS	NI	LTS	LTS	LTS
Socioeconomics	LTS	NI	LTS	LTS	LTS
Soils	LTS	NI	LTS	LTS	LTS
Traffic and Transportation	LTS	NI	LTS	LTS	LTS
Visual Resources	LTS	NI	LTSM	LTS↑	LTS
Waste Management	LTS	NI	LTS↓	LTS	LTS
Water Resources	LTS	NI	LTS↓	LTS↑	LTS
Wildfire	LTS	NI	LTS	LTS	LTS
Worker Health and Safety	LTS	NI	LTS	LTS	LTS

Notes: LTS = less than significant; LTSM = less than significant with mitigation; NI = no impact; ↓= Impact is potentially less severe than proposed project; ↑ = Impact is potentially more severe than proposed project.

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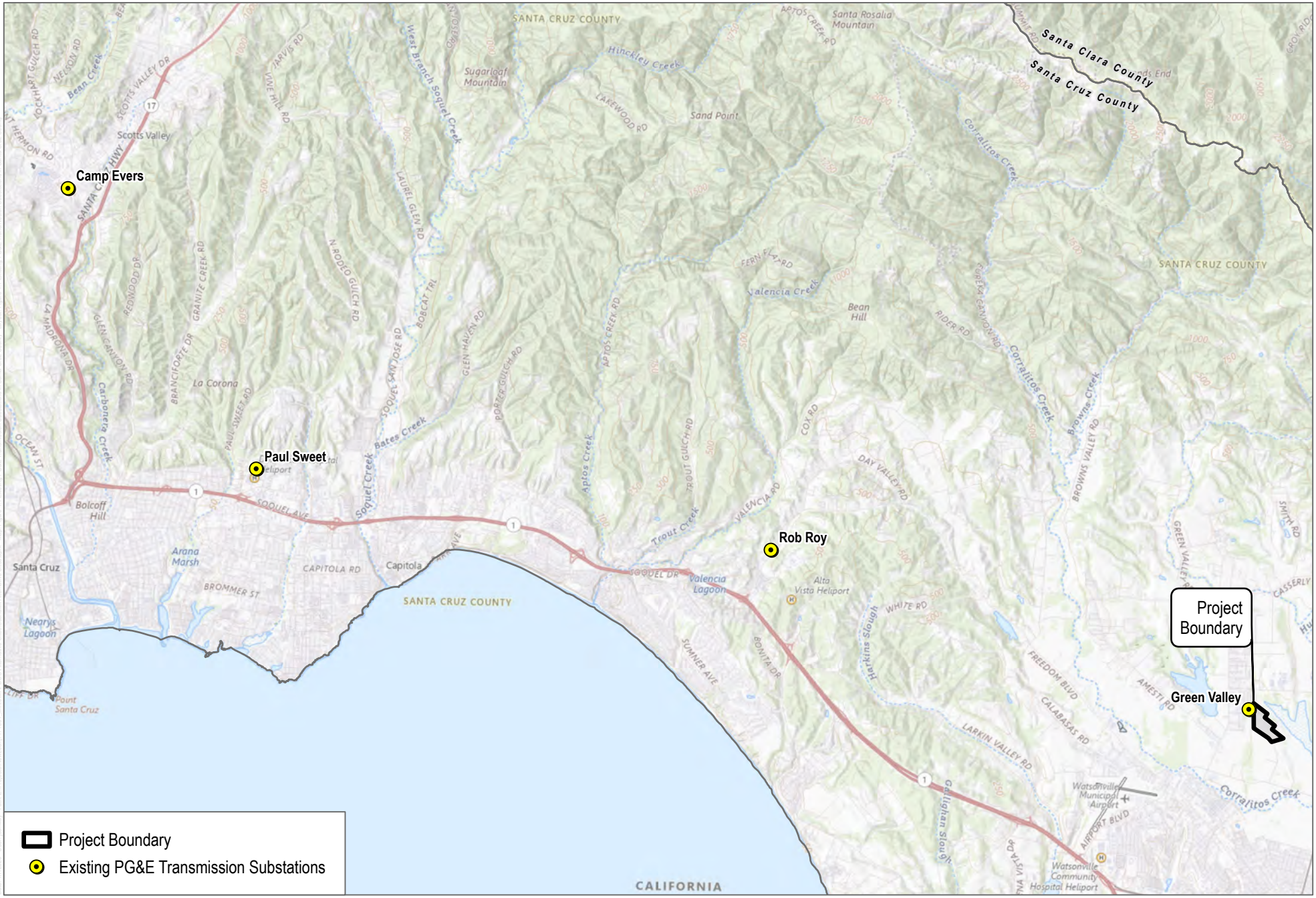

SOURCE: USGS National Map; CEC 2025

FIGURE 4.1

Existing PG&E Transmission Substations in Santa Cruz County

Seahawk Battery Energy Storage System Project

DUDEK

0 5,000 10,000 Feet

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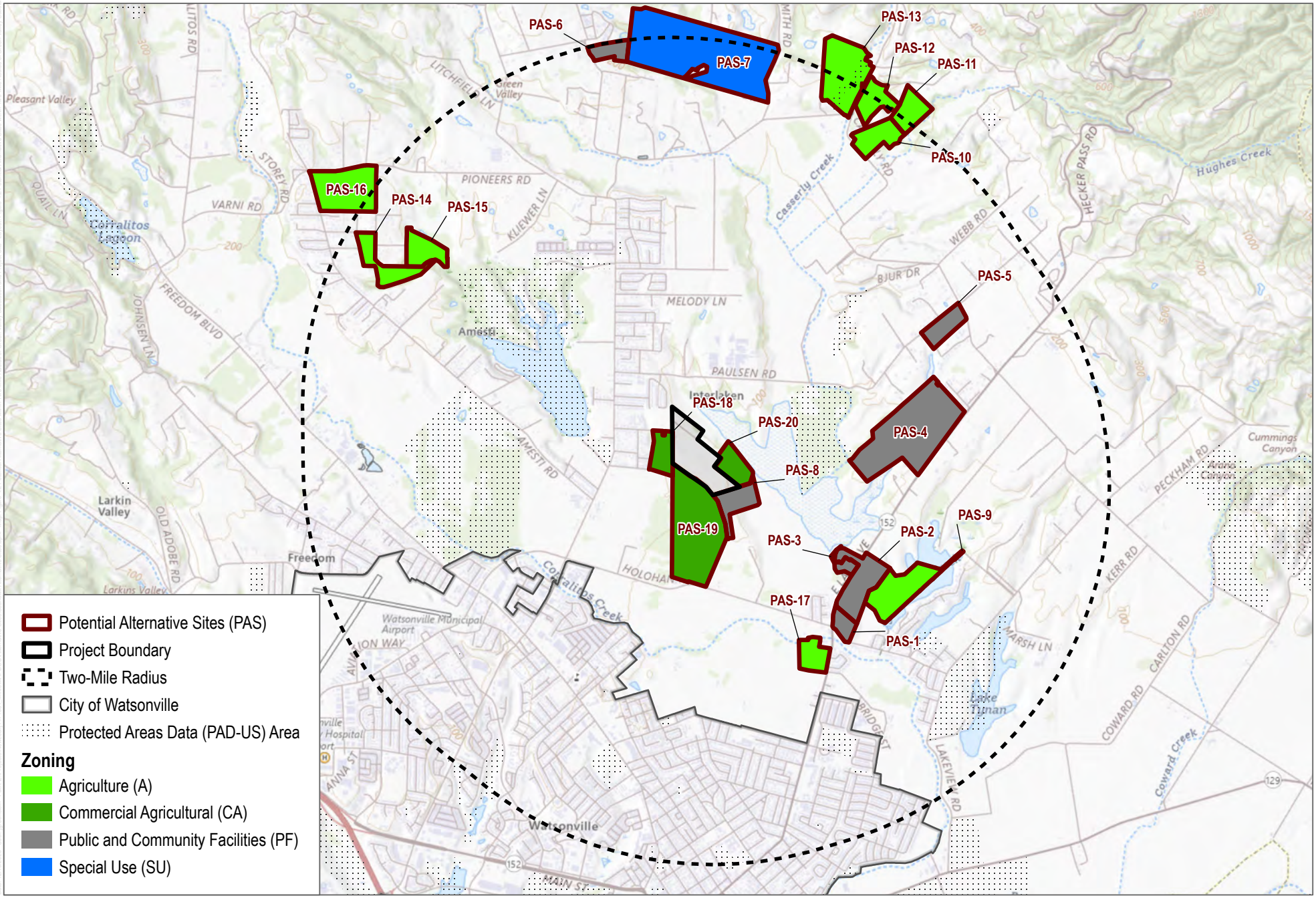

SOURCE: USGS National Map; USGS 2025; County of Santa Cruz 2025

FIGURE 4.2

Potential Alternative Sites within Two-Mile Radius of Green Valley Substation and Project Site

Seahawk Battery Energy Storage System Project

DUDEK

0 1,500 3,000 Feet

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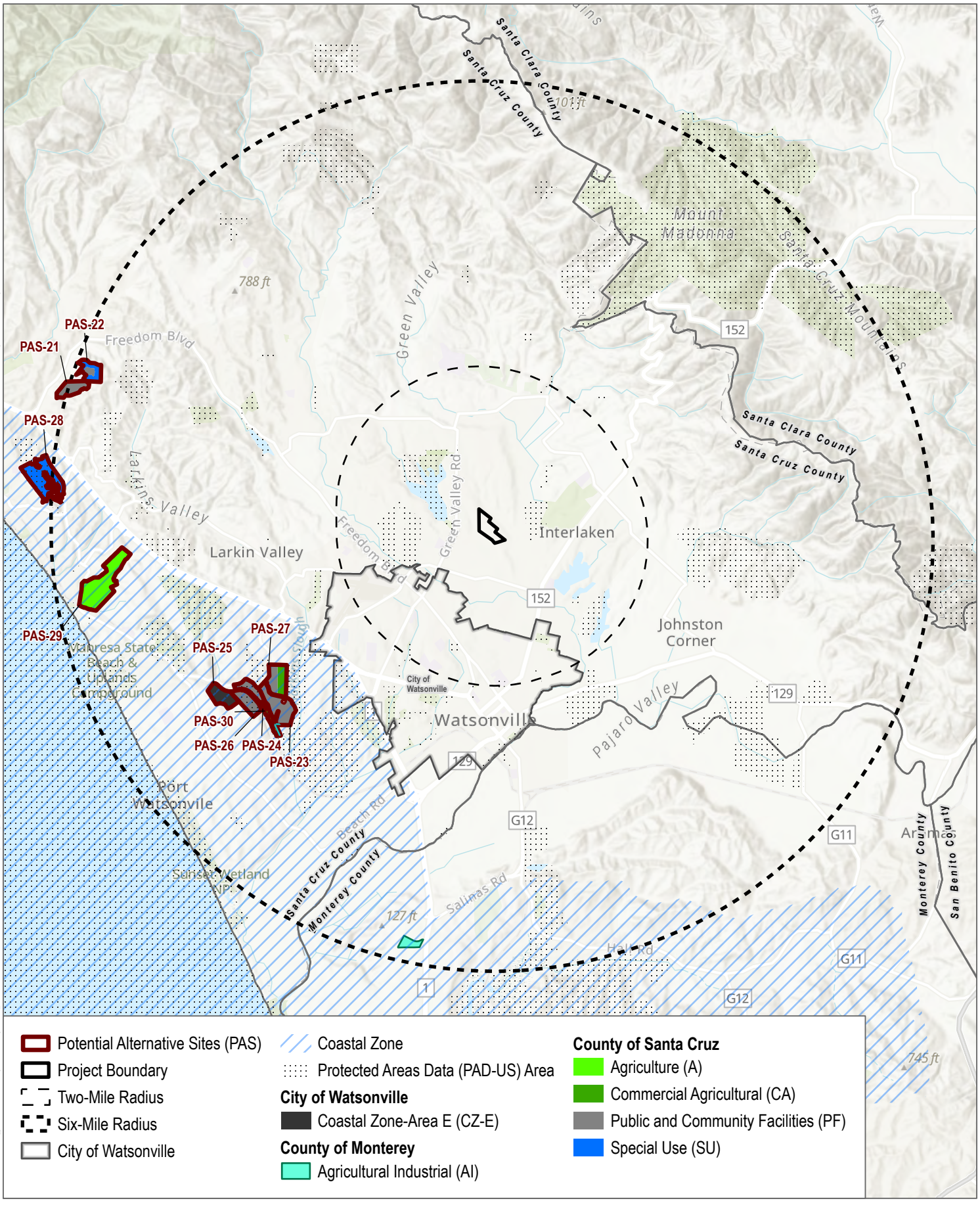

SOURCE: ESRI 2025; California Coastal Commission 2025; County of Santa Cruz 2025

FIGURE 4.3

Potential Alternative Sites within Six Mile Radius of Green Valley Substation and Project Site

Seahawk Battery Energy Storage System Project

DUDEK

0 1 2 Miles

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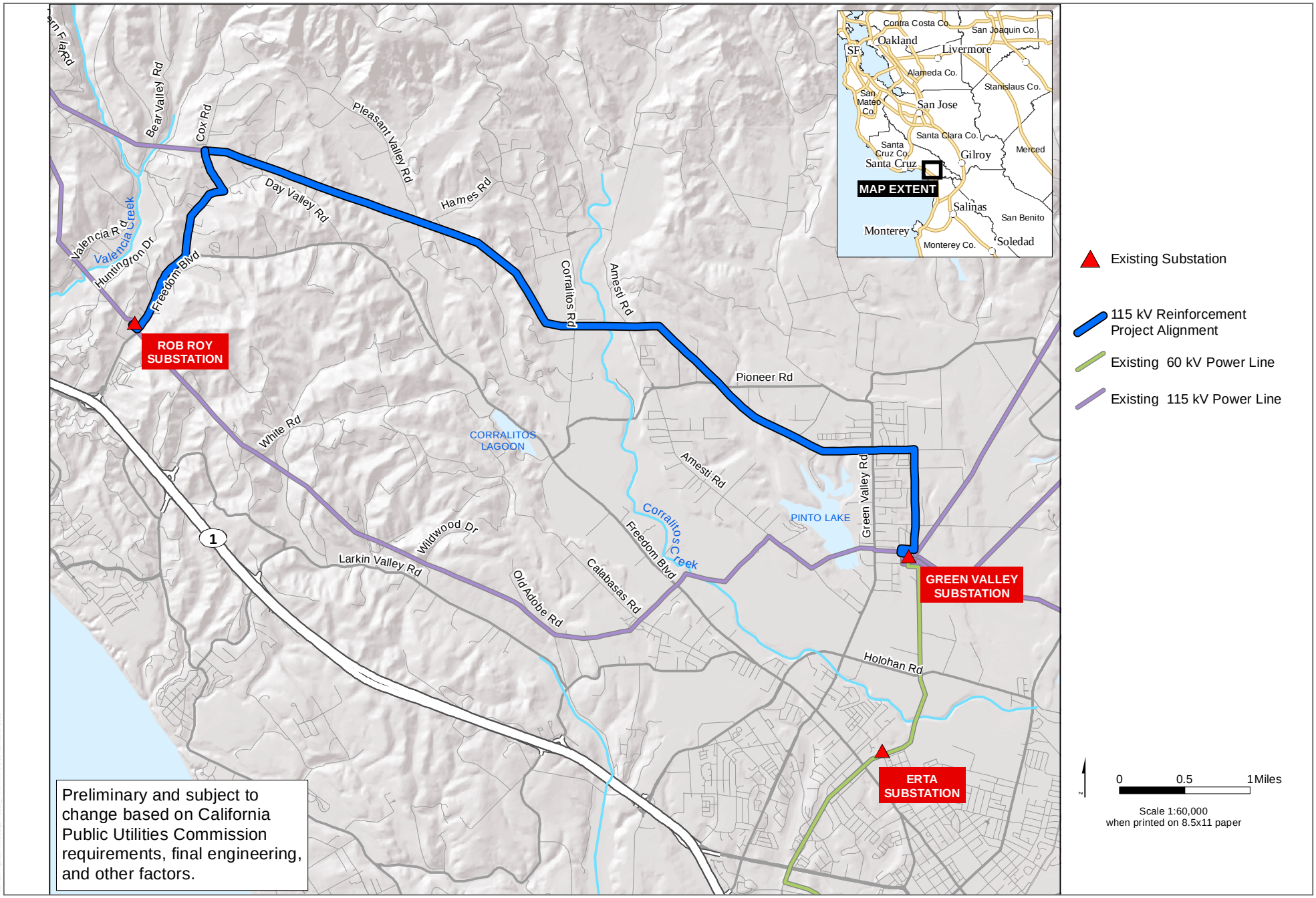

SOURCE: Pacific Gas & Electric Company, 2012

FIGURE 4.4

2014 PG&E Proposed Transmission System Upgrades

Seahawk Battery Energy Storage System Project

DUDEK

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5 Persons Who Prepared the Application

Organization	Role	Name
Sequoia Energy Storage 1 LLC	Project Management and Overall Application Preparation (Executive Summary, Project Description, etc.)	Max Christian, Senior Project Developer
		William Peregoy, Civil Project Engineer
		Elliot Wiegman, Interconnection Project Manager
Sheppard	Overall Application Preparation (Alternatives, Land Use, etc.)	Brooke Miller, Special Counsel
Dudek	Project Management and Overall Application Preparation (Executive Summary, Project Description)	Erin Phillips, Project Manager Hannah Barner, Environmental Specialist Emily Sanchez, Environmental Specialist Samantha Kay, Environmental Specialist Emma Dana, Environmental Specialist Jason Greenstein, Geospatial Analyst Kathryn Landoe, Technical Editor
	Biological Resources	Emily Scricca, Senior Biologist Katelin Pedersen, Environmental Specialist Elizabeth Meisman, Biologist
	Geological Hazards and Resources	Eric Schniewind, Senior Geologist, Hydrologist, and Hazardous Materials Specialist
	Hazardous Materials Handling	Audrey Herschberger, PE, Environmental Engineer
	Land Use	Tracy Ortega, Environmental Planner
	Noise	Jonathan Leech, Practice Director Environmental Tech Group
	Paleontological Resources	Michael Williams, Paleontologist
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	Decommissioning Plan	Travis Marella, Environmental Specialist
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	Cultural and Tribal Resources	Reilly Murphy, MA, RPA Erica Schultz, MA Maggie Martinez-Jansen, BA
London Moeder Advisors	Socioeconomics	Gary London, Principal Nathan Moder, Principal Robert Martinez, Senior Analyst
Utility System Efficiencies	Design Engineer (Substation Site Plan)	Charles Cunha, Registered Professional Electrical Engineer
Coffman Engineers	Lighting Plan	Richard, Frogge, Senior Electrical Designer
Consulting Engineers Group	Electric and Magnetic Field Study	Maria Arechavaleta Darko Borovik, Transmission Group Lead
EBI Consulting	Phase I Environmental Site Assessment	John Sufflebarger, Program Manager Hannah Weeks, Project Scientist
C2G Civil Consultants Group	Design Engineer (Civil Plans)	Todd Creamer, Registered Professional Civil Engineer David Dauphin, Vice President / Associate Engineer
	Stormwater Water Consultant (Downstream Impact Report, Stormwater Control Operation and Maintenance Plan, Stormwater Control Plan)	
Bayside Geology	Geologic Fault Investigation	James Olson, Principal Geologist
Haley & Aldrich	Geotechnical Engineering Report	Tyler Slothower, Staff Engineer Micah Hintz, Geotechnical Engineer

Organization	Role	Name
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Fire & Risk Alliance	Emergency Response Plan	Christian Ng, P.E. Senior Fire Protection Engineer
	Hazard Mitigation Analysis	

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