DOCKETED	
Docket Number:	23-OPT-02
Project Title:	Darden Clean Energy Project
TN #:	252976
Document Title:	CEC App_Section 5-5_Visual Resources_Darden Clean Energy
Description:	This section describes the visual resources present in the vicinity of the Darden Clean Energy Project as well as the potential impacts to visual resources that may result from construction and operation of the Project.
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Submission Date:	11/6/2023 2:57:38 PM
Docketed Date:	11/6/2023

5.5 Visual Resources

This section describes the visual resources present in the vicinity of the Darden Clean Energy Project (Project) as well as the potential impacts to visual resources that may result from construction and operation of the Project. Section 5.5.1 describes the existing environment that could be affected, including regional and local visual resources. Section 5.5.2 provides an overview of the regulatory setting related to visual resources. Section 5.5.3 identifies potential environmental impacts that may result from Project construction, operation, and maintenance, as well as mitigation measures that should be considered during Project construction, operation, and maintenance. Section 5.5.4 discusses cumulative effects. Section 5.5.5 presents laws, ordinances, regulations, and standards (LORS) applicable to visual resources. Section 5.5.6 identifies regulatory agency contacts and Section 5.5.7 describes permits required for the Project related to visual resources. Section 5.5.8 provides references used to develop this section.

5.5.1 Environmental Setting

5.5.1.1 Regional Setting

Fresno County is historically defined by its economic base in agriculture and contains five distinct geographic areas: the Coast Range Foothill Area, the Westside Valley Area, the Eastside Valley Area, the Sierra Foothill Area, and the Sierra Nevada Mountain Area (Fresno County 2000a). The Project site and the surrounding vicinity are located in the Westside Valley Area, which is visually characterized by the Interstate 5 (I-5) freeway, the flat valley floor, and expansive agricultural lands consisting of orchards, row crops, and tilled or retired lands. These large farms provide a sense of open space, emphasize the county's rural and farming heritage, and allow motorists opportunities for unrestricted panoramic views (Fresno County 2000b).

The Project site vicinity is characterized by a variable patchwork of parcels containing young and mature orchards, rows of ground crops and vineyards, and empty, tilled lands with bare tan soil and patches of dried grasses. Parcels near the proposed solar facility also include swaths of established annual grasses and perennial shrubs. The natural landscape of the Project site has been highly disturbed due to grading and tilling for crops, orchards, and vineyards.

5.5.1.2 Project Site

The Project is located in an agricultural area of unincorporated Fresno County, south and east of the community of Cantua Creek. The Project site is irregular in shape and is generally bounded to the west by foothills west of I-5, to the north by Stroud Avenue, to the east by Butte Avenue, and to the south by Mt. Whitney Avenue.

The landscape in the Project vicinity is primarily agricultural in nature and land cover types include retired agricultural lands, tilled and disked fields containing ruderal vegetation, and some limited areas of active farming (row crops and orchards) and associated dirt roads, field and road shoulders, basins, ditches, and berms. Rural residential, commercial, and agricultural/industrial developments are sparsely located proximate to the Project site. Groups of residences are located along main roads such as Mt. Whitney Avenue and South Sonoma Avenue with some isolated single-family residences located off private roads central to larger agricultural plots. The proposed gen-tie line spans privately-owned land on the western portion of the Project site. The California Aqueduct,

running generally north-south, bisects the gen-tie route. Compacted soil and/or paved roads border and separate parcels and land cover types.

The topography in the vicinity of the Project site is relatively flat and offers open, expansive views of distant hills and mountains that frame the valley. Just west of the Project site, west of I-5, the flat valley floor rises into the Ciervo Hills (to the northwest) and Big Blue Hills (to the southwest). The Ciervo Hills and Monocline Ridge are visible to the west-northwest of the proposed utility switchyard and alternate green hydrogen component locations, approximately three miles distant; the Big Blue Hills are visible to the west-southwest, approximately three miles distant. While these features are generally prominent in the viewshed, the dusty haze on days with poor air quality intermittently obscures their view. On clear, still days, the silhouette of the hills dominates the viewshed. Figure 5.5-1a through Figure 5.5-1h show the location of 13 representative photograph locations and Figure 5.5-2a through Figure 5.5-2m show existing views from these locations; the *Visual Setting and Representative Views* section below describes the representative views that document existing visual conditions in the Project vicinity.

Project Visibility and Viewshed

The Project viewshed is defined as the general area from which the Project would be visible. For the purpose of describing a Project's visual setting and assessing potential visual impacts, the viewshed can be divided into distance zones of foreground, middle ground, and background views. The foreground is defined as the distance between the viewer and 0.25 to 0.5 mile; landscape detail is most noticeable, and objects generally appear most prominent when seen in the foreground. The middle ground is 0.5 to 3 miles from the viewer, and the background extends beyond 3 to 5 miles from the viewer.

In the analysis of the Project, emphasis is placed on the potential effects on foreground viewshed conditions, although consideration is also given to the potential effects on the more distant views. Project visibility includes locations along nearby roads and highways, as well as more distant locations.

Existing Utilities

An existing network of overhead distribution lines, strung along wooden poles, follows local public streets throughout the Project vicinity. The Pacific Gas and Electric (PG&E) Los Banos-Midway #2 500 kV transmission line and associated lattice steel towers generally parallels I-5 approximately 1 mile to the west. Additionally, an existing 250 kV transmission line generally parallels I-5 approximately 0.5-mile to the east. The existing approximately 150-acre PG&E Cantua Solar Station is located south of the proposed gen-tie line, at the intersection of Stanislaus Avenue and West Mount Whitney Avenue, approximately 6 miles southwest of the proposed solar facility. The approximately 4.5-acre Superior Almond Solar Power array is also located near the western extent of the proposed gen-tie line near the intersection of South Kings Avenue and West Harlan Avenue. An approximately 450-acre solar facility is located approximately 2 miles south of the Project's southernmost extent. Numerous other solar facilities are located to the north, east, and south of the Project site.

Scenic Highways, Vistas, and Resources

There are no designated or eligible state scenic highways which partially or fully intersect the Project site (California Department of Transportation [Caltrans] 2018). The County of Fresno identifies I-5 as a County-designated Scenic Highway (County of Fresno 2023a). There are no

designated or recognized scenic vistas or scenic resources within a five-mile radius of the Project site or within a one-mile radius of the gen-tie line. There are no natural features within these radii recognized for their aesthetic, botanical, or ecological value. No man-made features that are unique or represent significant innovation are present.

Lighting

No street lighting exists along local roadways in the vicinity of the Project site. Along I-5, occasional standalone light fixtures are provided near off/on-ramps, but no regular lighting occurs along the interstate. Headlights from vehicles on the roadway are a source of temporary light. Additional sources of light are provided by scattered residences and agricultural and commercial facilities.

Visual Setting and Representative Views

The following subsections use a set of 13 photographs that document representative views of the Project vicinity and describe the visual character found therein. The viewpoint locations are shown in Figure 5.5-1a through Figure 5.5-1h and the accompanying photographs are included in Figure 5.5-2a through Figure 5.5-2m.

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Figure 5.5-1a Viewpoint Locations Overview (Mapbook Page 1)

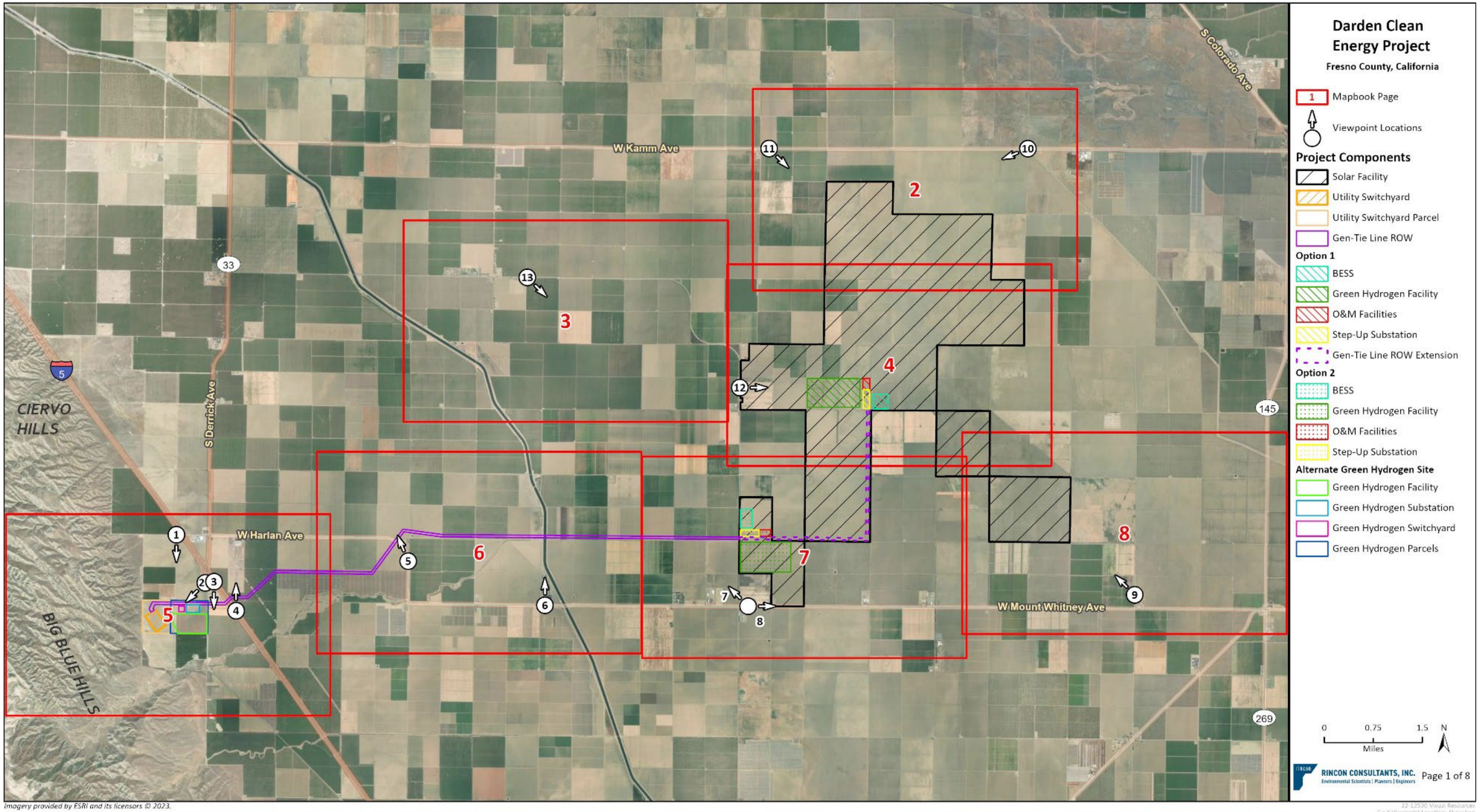

Figure 5.5-1b Viewpoint Locations (Mapbook Page 2)

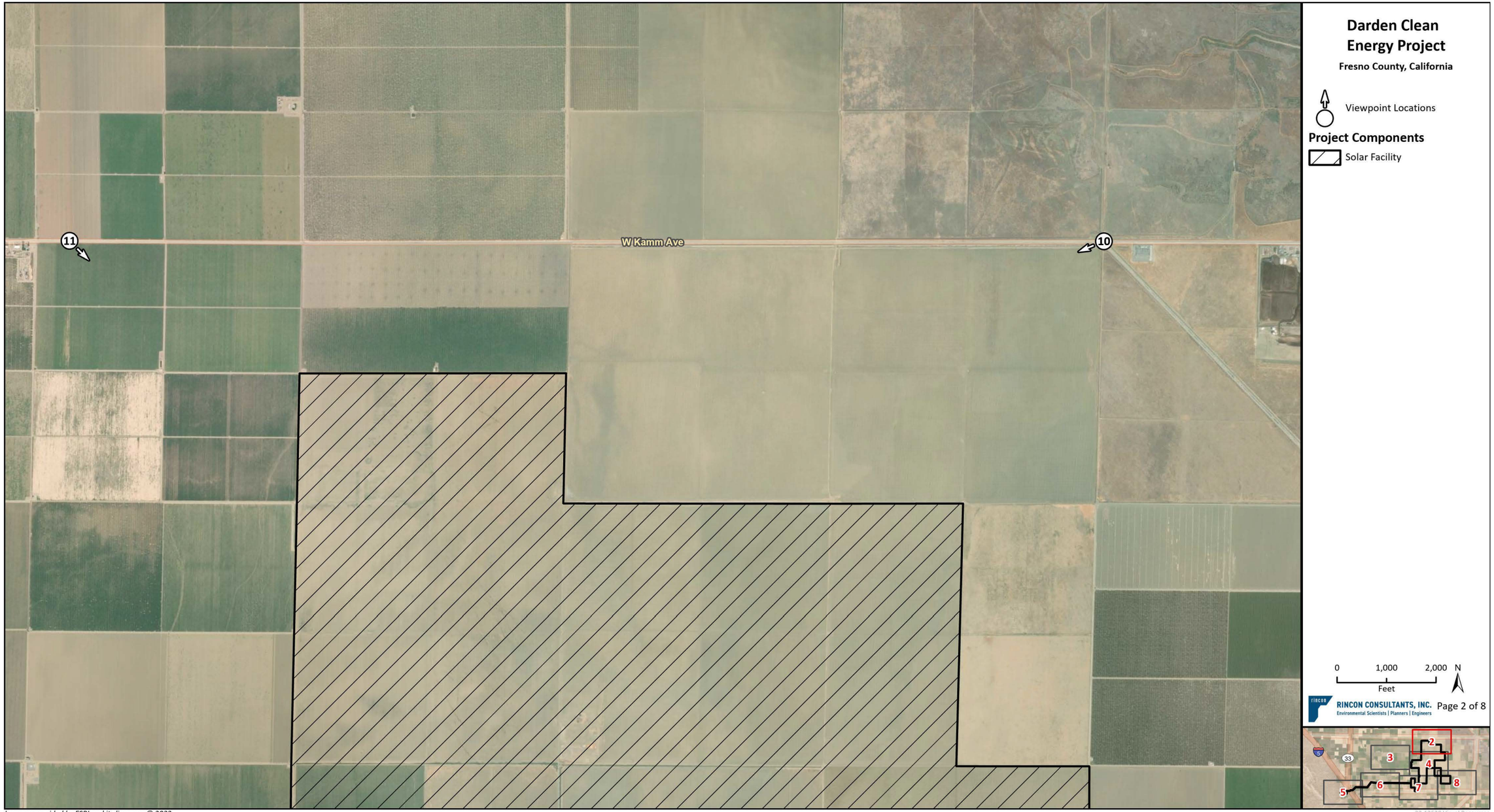

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Fig X Viewpoint Locations

Figure 5.1-1c Viewpoint Locations (Mapbook Page 3)

Figure 5.5-1d Viewpoint Locations (Mapbook Page 4)

Figure 5.5-1e Viewpoint Locations (Mapbook Page 5)

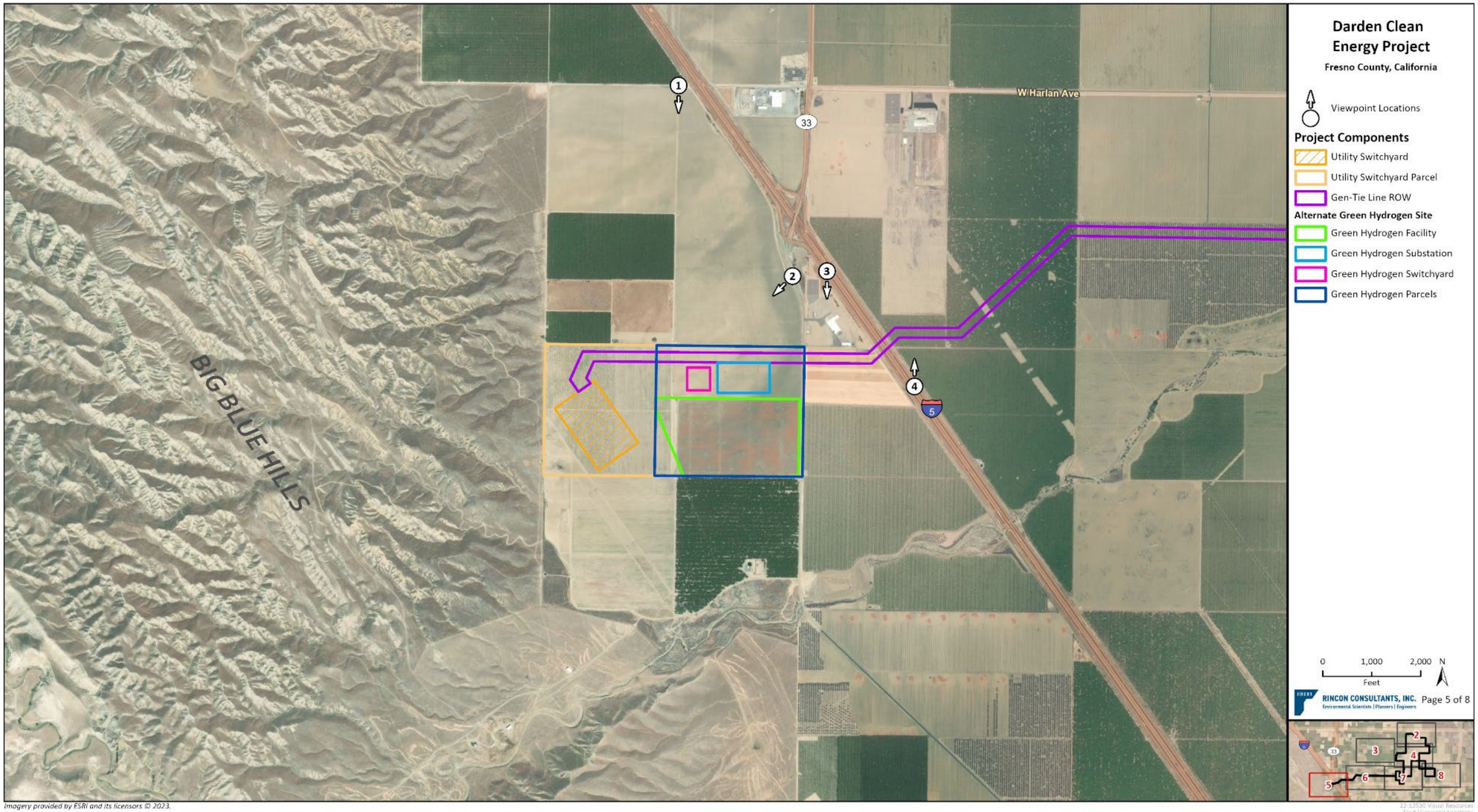


Figure 5.5-1f Viewpoint Locations (Mapbook Page 6)

Figure 5.5-1g Viewpoint Locations (Mapbook Page 7)

Figure 5.5-1h Viewpoint Locations (Mapbook Page 8)

Figure 5.5-2a Representative Photograph – Viewpoint 1

Viewpoint 1 shows the existing view from an agricultural access road that closely parallels southbound I-5, looking south. This view is characteristic of the landscape on the west side of I-5. A packed dirt road bisects the view, and agricultural plots in the foreground are seeded with short, green grasses on one side of the road, with a tilled, inactive plot on the other side. In the middleground, a mature orchard is visible. The faint outlines of transmission towers are visible across the center of the image, and present as vertical lines in an otherwise horizontal-featured landscape. The proposed gen-tie line would traverse the view approximately one mile away. The proposed utility switchyard would be located approximately 1.2 miles southwest on the far side of the orchard. The alternate green hydrogen site would be located approximately 1.2 miles in the distance near the center of the image. Monocline Ridge and the Big Blue Hills dominate the background, approximately three miles in the distance.

Figure 5.5-2b Representative Photograph – Viewpoint 2

Viewpoint 2 shows the existing view along South Derrick Avenue looking southwest toward the proposed gen-tie line, utility switchyard, and alternate green hydrogen site. This location is representative of local motorist views from I-5 looking southwest. Viewed from this location, the proposed gen-tie line would traverse the view approximately 0.4 mile in the distance, the proposed utility switchyard would be visible approximately 0.8 mile away, and the alternate green hydrogen site would be visible approximately 0.5 mile in the distance. Multiple existing distribution lines mounted on wooden poles and a stand of palm trees follow the road. White, cylindrical tanks associated with Nunes Cooling are visible amongst the palm trees. The landscape is characterized by patches of small green shrubs along the roadside, with tan and rust-colored patches of grasses and shrubs further behind. In the middleground of the view, a mature orchard is visible on the east side of the roadway. On the west side, distant agricultural fields skirt the bottom of the foothills. In the distance, the silhouette of transmission towers and distribution poles are faintly visible against the tan foothills. The Big Blue Hills dominate the background.

Figure 5.5-2c Representative Photograph – Viewpoint 3

Viewpoint 3 shows the existing view looking south on I-5 (near the onramp from South Derrick Avenue) toward the location where the proposed gen-tie line would cross over I-5 approximately 0.35 mile away. This location is representative of views for motorists on southbound I-5. Mature orchards and a distribution line strung on wooden poles line the northbound side of I-5 and extend into the distance. A distant orchard on the west side of I-5 presents as a dark green line on the right side of the image. Standalone light fixtures with roadway signs are present near roadway onramps, such as the one shown in this view. The landscape is characterized by a patchwork of dried, tan grasses, and green and brown shrubs along the roadway and center median. A line of palm trees parallels a short wood-post fence which delineates the highway corridor from the agricultural fields and Nunes Cooling to the west. Scattered trees and larger silvery-green shrubs are visible on the west side of the fence line. Nunes Cooling and distant orchard largely obscure the view of the Big Blue Hills to the west; a glimpse of the hills can be seen in the distance on the right side of the image.

Figure 5.5-2d Representative Photograph – Viewpoint 4

Viewpoint 4 shows the existing view looking north on I-5 toward the location where the proposed gen-tie line would cross over the roadway, approximately 0.2 mile away. This location is representative of views for motorists on northbound I-5. Mature orchards and a distribution line strung on wooden poles line the east side of I-5 and extend into the distance. A freeway offramp is marked by a large green sign. The landscape is characterized by a patchwork of short, tan grasses, and green and brown shrubs along the roadway and center median. These plant materials obscure the view of the southbound I-5 roadway and traffic. The white, boxy structures and fencing associated with Nunes Cooling are visible on the west side of I-5. Distant agricultural fields and the Big Blue Hills are visible to the west, on the left side of the image.

Figure 5.5-2e Representative Photograph – Viewpoint 5

Viewpoint 5 shows the existing view along South Stanislaus Avenue, looking north-northwest toward the location where the proposed gen-tie line would cross over the roadway, approximately 0.35 mile away. This location is representative of local motorist views along South Stanislaus Avenue and West Harlan Avenue. Existing distribution lines mounted on a series of wooden poles are skylined and follow South Stanislaus Avenue and West Harlan Avenue, running north-south and east-west, respectively. The landscape is characterized by exposed, brown earth and established orchards. Intermittent tufts of small, pale green shrubs and dried grasses are present along the roadside. A patchwork of agricultural lands with dried grasses, distant orchards, and row crops and white and blue agricultural equipment are visible on the east side of South Stanislaus Avenue.

Figure 5.5-2f Representative Photograph – Viewpoint 6

Viewpoint 6 shows the existing view from Mt. Whitney Avenue, looking north near the Tanimura & Antle Harvest Shop and facilities. The proposed gen-tie line would traverse the view from east to west approximately one mile away. This location is representative of local motorist views along Mt. Whitney Avenue. An existing distribution line mounted on wooden poles and security lighting structures follow an unpaved access road and are skylined across the left half of the image. Red, white, blue, and brown agricultural equipment and vehicles are visible in the center of the image, with an orchard in the background. The landscape is generally flat, and is characterized by exposed, tan earth with scattered patches of rusty brown and green weeds and shrubs. On the right side of the image, green swaths of row crops are visible, with dried tan grasses dotted with green shrubs in the distance.

Figure 5.5-2g Representative Photograph – Viewpoint 7

Viewpoint 7 shows the existing view from Mt. Whitney Avenue, looking northwest. This location is representative of views from a cluster of residences located near the intersection of Mt. Whitney Avenue and South Sonoma Avenue. Looking northwest from this location, the proposed gen-tie line would be visible approximately 1.3 miles away. An existing distribution line mounted on wooden poles runs east-west following Mt. Whitney Avenue, with a similar line running north-south, skylined along South Sonoma Avenue. Rows of ornamental shrubs screen the residences along Mt. Whitney Avenue from the street. Multiple agricultural facility structures are visible in the middle of the view. The landscape is generally flat and is characterized by a patchwork of green and tan grasses and shrubs, with scattered trees and larger shrubs. As seen on the left side of the image, Monocline Ridge is faintly visible in the distance to the west but is obscured by the haze to the northwest.

Figure 5.5-2h Representative Photograph – Viewpoint 8

Viewpoint 8 shows the existing view looking east along Mt. Whitney Avenue. This location is representative of views from a cluster of residences located near the intersection of Mt. Whitney Avenue and South Sonoma Avenue. The proposed solar facility and Option 2 green hydrogen component sites would be located approximately 0.3 mile away on the left side of the roadway. An existing distribution line mounted on wooden poles runs east-west and is skylined paralleling Mt. Whitney Avenue. The landscape is generally flat and is characterized by a patchwork of green and tan grasses and shrubs on the north side of the roadway, with an established orchard extending to the east and south. An irrigation swale parallels the roadway to the south. In the distance, the silhouette of larger trees and mounds of dirt are visible. At the center of the view, the faint reflections of distant commercial structures are visible.

Figure 5.5-2i Representative Photograph – Viewpoint 9

Viewpoint 9 shows the existing view looking northwest from South Lake Avenue toward the proposed solar facility. This location is representative of northwestern views from a rural agricultural residence located near the intersection of South Lake Avenue and Mt. Whitney Avenue. From this location, the proposed solar facility would be located approximately 1.3 miles away. The landscape is generally flat and is characterized by tan and pale-green weedy shrubs and grasses along the roadside, and tilled fields with exposed, tan earth. A distant orchard is visible as a dark green horizontal feature across the center of the view. On the right side of the image, four white cylindrical industrial tanks typical of the agricultural character of the area are visible.

Figure 5.5-2j Representative Photograph – Viewpoint 10

Viewpoint 10 shows the existing view at the intersection of West Kamm Avenue and South Yuba Avenue, looking west-southwest toward the proposed solar facility. This location is representative of local motorist views along West Kamm Avenue. From this location, the proposed solar facility would be located approximately two miles away. An existing distribution line mounted on wooden poles follows West Kamm Avenue, running east-west. A concrete drainage culvert and gravel side road parallel West Kamm Avenue, offset approximately 30 and 60 feet south. The landscape is generally flat and is characterized by patches of small, grey-green shrubs and tufts of dried grasses along the roadside and across the proximate parcels. The drainage culvert is inundated with grey, dried plant materials and scattered weedy shrubs and grasses. On the distant horizon, faint outlines of distant orchards and tree lines are visible. In the background, the Big Blue Hills and Monocline Ridge are faintly visible through the haze.

Figure 5.5-2k Representative Photograph – Viewpoint 11

Viewpoint 11 shows the existing view looking southeast along West Kamm Avenue toward the proposed solar facility. This location is representative of views from a cluster of residences located near the intersection of West Kamm Avenue and South Sonoma Avenue. Looking southeast from this location, the proposed solar facility would be located approximately 1.2 miles away. The landscape is generally flat and is characterized by dense, green row crops. In the distance, an orchard is visible and scattered trees are faintly dotted across the horizon.

Figure 5.5-2l Representative Photograph – Viewpoint 12

Viewpoint 12 shows the existing view looking east toward the proposed solar facility from a cluster of residences along South Sonoma Avenue. This location is representative of residences in the vicinity. From this location, the proposed solar facility would begin approximately 100 feet away on the far side of the road. The Option 1 green hydrogen component site would be located approximately one mile away. The landscape is generally flat and is characterized by an expanse of tilled parcels with exposed, brown earth. On the right side of the image, dark green scattered shrubs are also visible. In the distance, the silhouettes of large trees and light-colored buildings are visible across the horizon.

Figure 5.5-2m Representative Photograph – Viewpoint 13

Viewpoint 13 shows the existing view near a residence on West Clarkson Avenue, on the easternmost edge of the community of Cantua Creek, looking southeast toward the proposed solar facility. This location is representative of residential views from the community of Cantua Creek toward the proposed solar facility and Option 1 green hydrogen component site, approximately 3.5 miles away and 4.5 miles away, respectively. An existing distribution line mounted on wooden poles follows West Clarkson Avenue. Another distribution line can be seen in the distance, appearing as vertical silhouettes against the sky. The landscape is generally flat and is categorized by vast fields of row crops, as well as an established orchard on the right of the image. The horizon is dotted with distant trees and interrupted with evenly spaced wooden distribution poles.

5.5.2 Regulatory Setting

Federal, state, and local LORS related to visual resources were reviewed for applicability to the Project. These are detailed in Section 5.5.5, Laws, Ordinances, Regulations, and Standards.

5.5.3 Impact Analysis

5.5.1.1 Methodology

Federal Highway Administration Methodology

The analysis of visual resource impacts associated with the Project was conducted in accordance with the visual impact assessment system developed by the Federal Highway Administration (FHWA) in *Visual Impact Assessment for Highway Projects* (2015), as it is robust and widely used to provide systematic evaluations of visual change.

The FHWA method addresses the following primary questions:

- What are the visual qualities and characteristics of the existing landscape in the project area?
- What are the potential effects of the project's proposed alternatives on the area's visual quality and aesthetics?
- Who would see the project, and what is their likely level of concern about or reaction to the way the project visually fits within the existing landscape?

Applying the FHWA method entails the following six steps:

1. Establish the project's area of visual influence.
2. Determine who has views of and from the project ("viewer").
3. Describe and assess the landscape that exists before project construction ("affected environment").
4. Assess the response of viewers looking at and from the project, before and after project construction ("viewer sensitivity or concern").
5. Determine and evaluate views of the project for before and after project construction (simulations).
6. Describe the potential visible changes to the project area and its surroundings that would result from the project.

The initial step in the evaluation process was the review of planning documents applicable to the Project area to gain insight into the type of land uses intended for the general area, and the guidelines given for the protection or preservation of visual resources. Consideration was then given to the existing visual setting within the Project viewshed, which is defined as the geographical area in which a project can be seen. Site reconnaissance and Google Earth desktop analysis were conducted to view the site and surrounding area, identify potential KOPs, and take representative photographs of existing visual conditions. Photographs from the site reconnaissance were selected to represent the "before" conditions from each of the potential KOPs. Six KOPs were selected to be used as the basis for analysis of the Project's visual effects. The existing visual conditions seen in the views from each of the KOPs (existing condition photos shown in Figure 5.5-4a, Figure 5.5-5a, Figure 5.5-6a, Figure 5.5-7a, Figure 5.5-8a, and Figure 5.5-9a of Section 5.5.1.3) were evaluated

using the FHWA visual quality assessment system that entails use of a numerical rating system. The FHWA visual quality assessment asks: Is this particular view common or dramatic? Is it a pleasing composition (a mix of elements that seem to belong together) or not (a mix of elements that either do not belong together or contrast with the other elements in the surroundings)? Under the FHWA visual quality analysis system, the visual quality of each view is evaluated in terms of its vividness, intactness, and unity:

Vividness is defined as the degree of drama, memorability, or distinctiveness of the landscape components. Overall vividness is an aggregated assessment of landform, vegetation, water features, and human-made components in views.

Intactness is a measure of the visual integrity of the natural and human-built landscape and its freedom from encroaching elements. This factor can be present in well-kept urban and rural landscapes, as well as in natural settings. High intactness means that the landscape is free of unattractive features and is not broken up by features and elements that appear out of place. Low intactness means that visual elements that are unattractive and/or detract from the quality of the view can be seen.

Unity is the degree of visual coherence and compositional harmony of the landscape considered as a whole. High unity frequently attests to the careful design of individual components and their relationship in the landscape or refers to an undisturbed natural landscape.

Each of these dimensions of visual quality were documented using an FHWA rating sheet (Appendix L), and for each of these dimensions, a numerical rating score on a scale from 1 to 7 was assigned; where a score of 1 indicates very low visual quality, a score of 4 indicates moderate or average visual quality, and a score of 7 indicates very high visual quality. The scores for each of these three dimensions were added and then averaged to generate an overall visual quality score.

To provide a basis for evaluating the Project's impacts on these views, visual simulations were produced according to the methodology described in Section 5.5.1.1, *Simulation Modeling,* to illustrate the "after" visual conditions from each of the KOPs. The "after" visual simulations are shown in Section 5.5.1.3, Figure 5.5-4b, Figure 5.5-5b, Figure 5.5-6b, Figure 5.5-7b, Figure 5.5-8b, and Figure 5.5-9b.

Based on review of the simulated views from each KOP, the visual quality of each view was re-evaluated using the FHWA visual quality evaluative system. The results of the evaluations of the existing and simulated views from each KOP were documented on the FHWA worksheets (provided in Appendix L). The evaluations of the existing and simulated views were compared to determine the degree of visual change. Based on the assessment of the degree of visual change that the development of the Project will bring about and an evaluation of the sensitivity of the view, overall determinations of visual impact were made and expressed in terms of the impact level (very low to very high).

Once all effects were examined, determinations were made as to whether any potential impacts will reach a level that would be significant under the four California Environmental Quality Act (CEQA) Guidelines checklist questions, as discussed in Section 5.5.3.

Viewers and Exposure

The primary potentially affected viewer groups within the Project area are motorists on I-5 and along local roadways and residents located within viewing distance of the Project site. These viewers experience the Project area within the context of a setting that includes I-5 and related

transportation infrastructure, existing transmission and distribution facilities, equipment and facilities typical of the agricultural character of the area, solar developments, and other dispersed developments and facilities.

Motorists

Motorists constitute the viewer group with the highest number of viewers and include both local and regional travelers who are familiar with the visual setting, as well as those using the roads on a less regular basis. Motorists traveling on I-5 would experience one location where the proposed gen-tie line would cross over the roadway, approximately 0.6 mile southeast of the South Derrick Avenue exit. Motorists on West Harlan Avenue would view the proposed gen-tie line for approximately 2 miles, as the line would roughly parallel the road (approximately 0.5 mile distant) before crossing over the roadway near the intersection of West Harlan Avenue and South Stanislaus Avenue. Motorists on I-5 would have indirect views of the proposed utility switchyard and alternate green hydrogen component sites on the west side of I-5.

Motorists along Mt. Whitney Avenue would view the proposed gen-tie line at an approximate 1-mile distance for approximately 5 miles and would also view the solar facility and Option 2 step-up substation, BESS, and green hydrogen components at distances ranging from 0 to 2 miles. Motorists along Mt. Whitney Avenue would have distant views of the Option 1 step-up substation, BESS, and green hydrogen components, approximately 3 or more miles away. A small number of local motorists travel along the variably-paved access roads that delineate parcels near the solar facility and would have views of the solar facility and Options 1 and 2 step-up substation, BESS, and green hydrogen components at varying distances.

Viewer sensitivity for motorists would range from low and brief when views are at highway speed (i.e., proposed gen-tie line crossing of I-5 facilities to the west of I-5) to moderately high when views are for a longer duration or a lower speed (such as the proposed gen-tie parallel to West Harlan Avenue, the solar facility, or the Options 1 and 2 step-up substation, BESS, and/or green hydrogen components adjacent to local roadways).

Residents

Nearby residents are located in the community of Cantua Creek, the nearest census-designated community, and in the sparsely settled, rural, residential properties dispersed in the Project vicinity. Within the community of Cantua Creek, the nearest residence to the Project site would be located on West Clarkson Avenue, approximately 3.5 miles northwest of the proposed solar facility. The nearest residences to the Project site are located along South Sonoma Avenue and are approximately 50 to 100 feet west of the proposed solar facility. Additional nearby residences are located along South Napa Avenue, West Stroud Avenue, West Mt Whitney Avenue, and West Cerini Avenue.

Existing facilities and overhead infrastructure are intermittently visible from the residences; however, views of the Project site would be seen within the context of a predominantly agricultural landscape. Depending on the proximity to the Project site, residential viewers tend to have high viewer exposure and awareness; therefore, the sensitivity of this viewer group is considered high.

Key Observation Points (KOPs)

During the June and August 2023 site visits, the Project site was evaluated from a variety of locations and viewing distances. KOPs were established to provide a representative cross-section of

affected landscapes in the visual study area for which visual simulations (views of the existing landscape with Project components added) would be prepared. These locations were selected based on the Project's viewshed, visual exposure, and viewer group. This analysis focuses on the largest viewer groups that would be exposed to Project views, which would include motorists and residents.

As shown in Figure 5.5-3, six KOPs were ultimately selected for preparing visual simulations of the Project. KOP 1 is located at South Derrick Avenue and I-5, looking southeast, representing I-5 motorist views. KOP 2 is located along West Harlan Avenue, looking east, representing local motorist views. KOP 3 is located along West Mt. Whitney Avenue, looking northeast, representing residential views. KOP 4 is located at the corner of West Kamm Avenue and South Yuba Avenue, looking southwest, representing local motorist views. KOP 5 is located along West Kamm Avenue, looking south, representing residential views. KOP 6 is located along West Cerini Avenue, looking south, representing residential views.

Photographic Survey

Representative Photographic Survey

Photographs used to assess existing conditions for representative photographs (see Figure 5.5-2a through Figure 5.5-2m) were taken on June 28, 2023, using a digital single-lens reflex camera with standard 50-millimeter lens equivalent, which represents an approximately 40-degree horizontal view angle. Weather conditions were clear and sunny, with winds at approximately 10 mph and peak temperatures in the low 90s.

Key Observation Point Simulation Photographic Survey

Photographs used to create simulated views of the Project were taken by Truescape staff on August 15 and August 16, 2023, using a digital single-lens reflex full-frame 50.6-megapixel camera. Weather conditions were a combination of overcast and sunny with scattered cloud cover with peak temperatures in the mid-90s. A series of 24 photographs were taken from each key observation point (KOP) and were then blended together to create a 360-degree panorama. From this 360-degree panorama, a 124-degree horizontal view angle was extracted. The Truescape methodology and 124-degree images are provided in Appendix L. A cropped image approximating that of a 50 mm lens equivalent was extracted from the 360-degree images produced. This 50 mm equivalent cropped image can be printed as an 11x17 image to be consistent with the view perceived by the human eye (Landscape Institute 2019). The 50-mm lens equivalent existing condition photos are shown in Section 5.5.1.3, Figure 5.5-4a, Figure 5.5-5a, Figure 5.5-6a, Figure 5.5-7a, Figure 5.5-8a, and Figure 5.5-9a. Similarly, the 124-degree photographs in Appendix L, if viewed on a computer monitor set so that the scale bar is 4 inches wide as indicated on the figures, also depict a 50mm equivalent image.

Simulation Modeling

To provide a basis for evaluating the visual effect of the Project on these views, visual simulations of the Project were produced to illustrate the "after" visual conditions from each of the six KOPs. The proposed facilities were modeled based on preliminary Project solar panels and components, BESS enclosures, green hydrogen components, main power transformers, switchyard, and step-up substation components.

The simulations were produced from 360-degree photography of the Project site vicinity and 3D modeling of each Project component using AutoDesk 3ds Max 3D computer simulation software. The perspective and lighting of each KOP view was matched to the 3D model and the proposed views were rendered. Foreground elements in the photographs were masked out and the 3D rendering was composited with the background. Atmosphere, noise, and blur was added to the 3D rendering to match the photography. To ensure that the visual simulations include all potential facilities, they were prepared to include the Project components with multiple siting options in all potential locations (i.e., the green hydrogen facility is included at the Option 1, Option 2, and alternative site locations).

Simulated views for each of the 6 KOPs with a 124-degree view angle are shown in Appendix L. Simulated views for each KOP using a 50-mm lens view equivalent are shown in Section 5.5.1.3, Figure 5.5-4b, Figure 5.5-5b, Figure 5.5-6b, Figure 5.5-7b, Figure 5.5-8b, and Figure 5.5-9b. Similar to the existing condition photos, the simulations in Appendix L, if viewed on a computer monitor set so that the scale bar is 4 inches wide as indicated on the figures, also depict a 50mm lens equivalent image.

5.5.1.2 Project Appearance

Project Structures, Dimensions, and Materials

Detailed descriptions of Project components are provided in Chapter 2, *Project Description*, and the various site arrangements, layouts, and elevation views of the proposed Project components are included in Appendix L. Table 5.5-1 identifies the main above-ground Project components and their approximate dimensions, materials, and finishes. No landscaping is proposed as part of the Project.

Table 5.5-1 Project Site Components

Project Component	Approximate Acreages and Dimensions	Materials	Finishes
Solar Facility, Step-Up Station, and Gen-Tie			
Solar Facility	**8,840 acres**		
Solar Panels	10 feet tall	Steel pile supports, prefabricated solar panels (glass and metal)	Minimally reflective, dark in color, highly absorptive
Inverter-Transformer Stations	40 feet by 20 feet wide, 10 feet tall	Concrete, steel, wood	Light colored or neutral
▪ Security Camera	20 feet tall	Wood or metal pole	Grey or brown
▪ Inverter Shade Structure	10 feet tall	Wood or metal supports Metal, vinyl, or similar shade cover	Grey or brown, neutral
Collection System Road Crossing Poles	60 to 100 feet tall, 12-to-20-inch diameter	Wood pole	Brown
O&M Facilities (Options 1 and 2)	Up to 12 acres		
▪ O&M Building	One or two buildings, 65 by 80 feet (up to 10,400 square feet), 15 feet tall	Metal siding	Light colored or neutral

Project Component	Approximate Acreages and Dimensions	Materials	Finishes
Fencing	Up to 8 feet tall	Metal chain link with 1 foot barbed wire	Light to dark grey
Step-Up Substation (Options 1 and 2)	**20 acres**		
Communication Building	50 feet by 24 feet, 12 feet tall	Metal siding	Light colored or neutral
Microwave Towers	18 feet by 18 feet, up to 200 feet tall with an antenna up to 15 feet in diameter	Steel	Light to dark grey
Dead-end Structures	Up to 100 feet tall	Steel	Light to dark grey
Fencing	Up to 8 feet tall	Metal chain link	Light to dark grey
Gen-Tie Line	**235 acres 10 miles long Up to 275-foot-wide corridor**		
Tubular Steel Poles (TSPs)	140 to 170 feet tall	Steel	Light to dark grey
H-Frame or Monopole Structures	120 to 200 feet tall	Steel	Light to dark grey
500 kV Gen-Tie Circuit	2 or 3 x 1590 kcmil ACSR "Lapwing" conductor Up to 10 miles long	Aluminum, steel, no coating	Light to dark grey
Gen-Tie Line Extension (Option 1)	**96 acres Up to 5 miles long Up to 275-foot-wide corridor**		
Tubular Steel Poles (TSPs)	120 to 200 feet tall	Steel	Light to dark grey
H-Frame or Monopole Structures	120 to 200 feet tall	Steel	Light to dark grey
500 kV Gen-Tie Circuit	2 or 3 x 1590 kcmil ACSR "Lapwing" conductor Up to 5 miles	Aluminum, steel, no coating	Light to dark grey
BESS			
BESS (Options 1 and 2)	**35 acres**		
Electrical Enclosures	40 feet or 52 feet by 8 feet, 8.5 feet tall	Concrete pad, prefabricated metal	Light colored or neutral
Emergency Water Tank	15,000-gallon capacity	Prefabricated, metal	Light colored or neutral
Green Hydrogen			
Green Hydrogen Facility (Options 1 and 2)	**225 acres**		
Electrolyzer, Water Treatment Plant, and Hydrogen Storage	Up to 225 acres	Prefabricated metal, concrete, metal	Light to dark grey
Electrolysis Facility Buildings (6)	372 feet by 108 feet, 24 feet tall	Prefabricated, metal paneling	Light colored or neutral
Wastewater Tank	63 feet wide, 28 feet tall	Prefabricated metal	Light colored or neutral

Project Component	Approximate Acreages and Dimensions	Materials	Finishes
Raw Water Tanks (3)	140 feet wide, 62 feet tall	Prefabricated metal	Light colored or neutral
Vent Stack	Up to 100 feet tall	Metal	Light to dark grey
Control Buildings	75 feet by 30 feet, 10 to 20 feet tall	Prefabricated, metal paneling	Light colored or neutral
Guard Rooms	20 feet by 40 feet, 10 to 20 feet tall	Metal paneling	Light to dark grey
Fencing	Up to 8 feet tall	Metal chain link with 1 foot barbed wire	Light to dark grey
Alternate Green Hydrogen Site	**120 acres**		
Green Hydrogen Facility	Up to 100 acres		
Electrolyzer, Water Treatment Plant, and Hydrogen Storage	Up to 100 acres	Prefabricated metal, concrete, metal	Light to dark grey
Electrolysis Facility Buildings (4)	372 feet by 108 feet, 24 feet tall	Prefabricated, metal paneling	Light colored or neutral
Wastewater Tank	63 feet wide, 28 feet tall	Prefabricated metal	Light colored or neutral
Raw Water Tanks (3)	140 feet wide, 62 feet tall	Prefabricated metal	Light colored or neutral
Vent Stack	Up to 100 feet tall	Metal	Light to dark grey
Control Rooms (2)	75 feet by 30 feet, 10 to 20 feet tall	Prefabricated, metal paneling	Light colored or neutral
Guard Rooms	20 feet by 40 feet, 10 to 20 feet tall	Metal paneling	Light to dark grey
O&M Building	80 by 100 feet, 15 feet tall (8,000 square feet)	Metal siding	Light colored or neutral
Fencing	Up to 8 feet tall	Metal chain link with 1 foot barbed wire	Light to dark grey
Green Hydrogen Substation	**Up to 15 acres**		
Control Enclosure	50 feet by 24 feet, 10 to 20 feet tall	Prefabricated, metal paneling	Light colored or neutral
Dead-end structures	Up to 175 feet tall	Steel	Light to dark grey
Green Hydrogen Switchyard	**Up to 5 acres**		
Control Enclosure	15 feet by 33 feet, 10 to 20 feet tall	Prefabricated, metal paneling	Light colored or neutral
Dead-end structures	Up to 175 feet tall	Steel	Light to dark grey
Fencing	Up to 8 feet tall	Metal chain link with 1 foot barbed wire	Light to dark grey
Utility Switchyard	**40 acres (1,000 feet by 1,600 feet)**		
Dead-end Structures	Up to 175 feet tall	Steel	Light to dark grey

Project Component	Approximate Acreages and Dimensions	Materials	Finishes
Microwave Tower	140 feet tall	Steel	Light to dark grey
Voltage Transformers	16.5 inches by 6 inches, 7.5 inches tall	Concrete foundation, prefabricated metal	Light to dark grey
Modular Protection Automation and Control Building	150 feet by 25 feet, 12 feet tall	Concrete foundation, metal siding	Light colored or neutral
Control Building	16 feet by 33 feet, 10 to 20 feet tall	Prefabricated, metal paneling	Light colored or neutral
Stormwater Retention Basin	1,000 feet by 100 feet	Shallow earth and rock basin Mostly dry except during storm events	Exposed soil and rock
Fencing	Up to 8 feet tall	Metal chain link with 1 foot barbed wire	Light to dark grey

O&M: Operations and Management

kcmil: thousand circular mills

ACSR: Aluminum conductor steel reinforced

Construction Laydown Area

As described in Chapter 2, *Project Description,* a 20-acre construction laydown yard would be located within the Option 1 and 2 step-up substation component sites, at either the intersection of South El Dorado Avenue and West Davis Avenue (Option 1), or at the intersection of West Harlan Avenue and South Sonoma Avenue (Option 2). Laydown area preparation would include the installation of temporary perimeter fencing that would be removed once construction is complete. The Project construction laydown yard would be used as a reporting location for workers, vehicle and equipment parking, material storage, and as a helicopter landing zone.

Project Lighting

CONSTRUCTION

Construction of the Project would generally occur during daytime hours. However, at limited times some construction activities, such as de-energizing and re-energizing existing lines along the proposed gen-tie line, step-up substation, and utility switchyard, may be required or finished at night while electrical demand is low, and these activities would require lighting for safety. Any required lighting during construction would be limited to individual work areas and would be temporary in nature. If temporary lighting is needed, portable light standards would be placed along the perimeter of the work area or construction laydown area, as necessary. The light standards would be shielded, resulting in light being directed downward and inward (toward the work or laydown area). The construction laydown yard may be lit for security; however, lighting would be directed on-site and away from potentially sensitive receptors (i.e., motorists and nearby residents).

OPERATION

Project lighting for operations would be restricted to areas required for safety, security, and operational activities, such as at the O&M facilities, step-up substation, green hydrogen facility, BESS, gates, and along perimeter fencing. Security lights would likely use motion sensor technology that would be triggered by movement at a human's height, so as not to be triggered by smaller wildlife. The level and intensity of lighting during operations would be the minimum needed. Portable lighting may be used occasionally and temporarily for maintenance activities during operations, such as emergency work that must occur at night.

Care would be taken to prevent undue light pollution from the nighttime security lighting. Lighting at high illumination areas is not necessary on a continuous basis, thus, would be controlled by switches, motion detectors, or other means to light the areas only when required. Consistent with Fresno County design standards, all lighting would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties and roadways.

The Applicant does not anticipate installing any new structure lighting as part of the proposed gen-tie line, with the exception of aviation lighting and/or marking that may be required for some structures. Upon completion of final design, if necessary, the Applicant would file with the Federal Aviation Administration (FAA) for official study and determination of lighting and/or marking requirements for these structures. Aviation lights are manufactured with focused beacons which direct light upward and outward without illuminating nearby areas directly below the lights, and no visible reflected light would be visible from the ground surface. Any aviation lighting required for the Project would be consistent with similar, existing aviation lighting in the vicinity.

Water Vapor Plumes

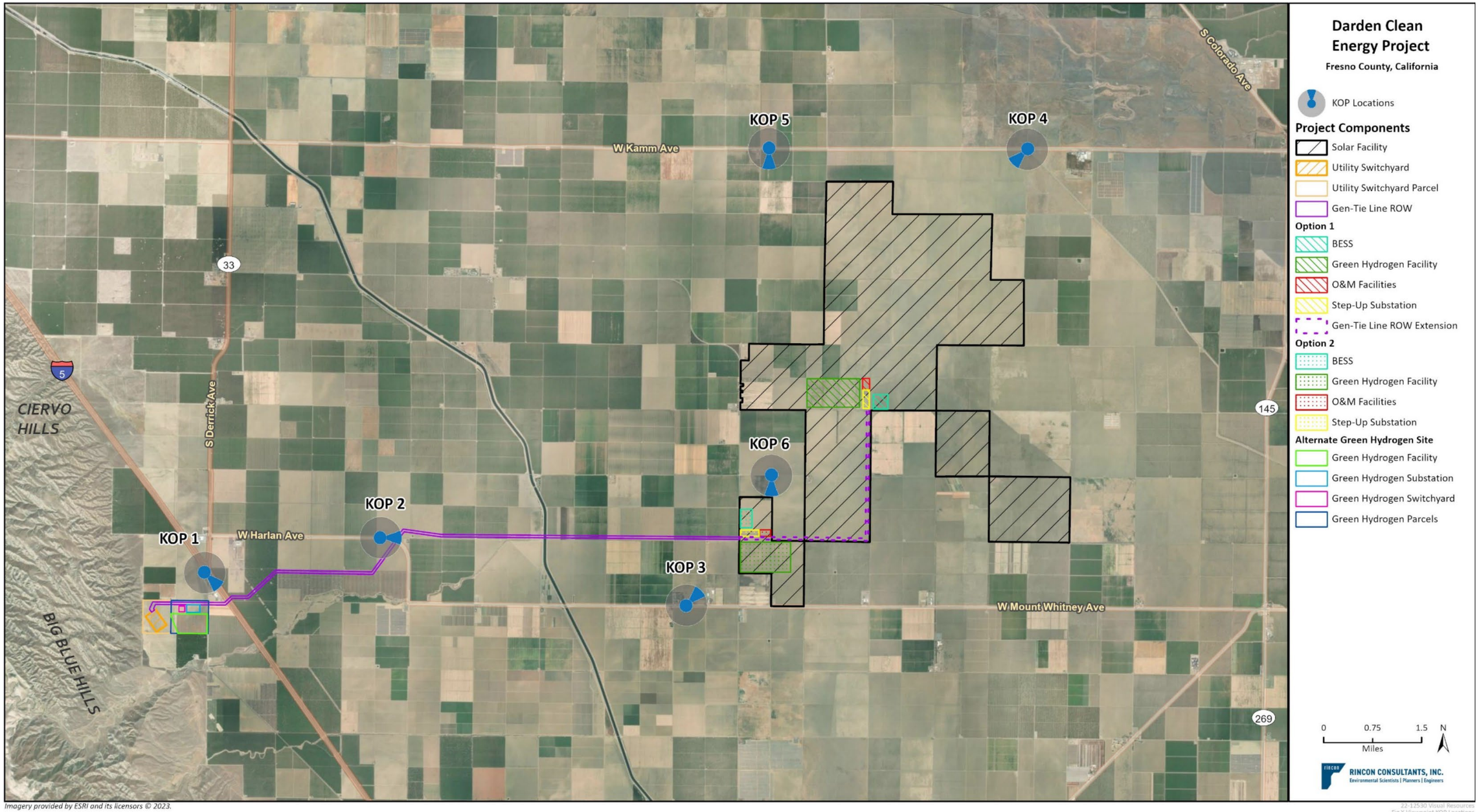
There are no Project components that would produce visible water vapor plumes.

5.5.1.3 Visual Impact Assessment

A set of visual simulations, presented in Figure 5.5-4 through Figure 5.5-9, below, were prepared to document the Project-related visual change that would occur at six KOP locations to provide the basis for evaluating potential visual effects associated with the Project from these key public views. The figure sets consist of two full-page images designated "a" and "b,", with the existing view shown in the "a" figure, and the with-Project visual simulation in the "b" figure.

This section provides a description of the Project-related change and an evaluation of potential visual effects on key public views, primarily as represented by the set of six visual simulations. Table 5.5-2, following the figures with visual simulations, presents an overview of the changes anticipated at each KOP, including proposed viewpoint location with corresponding viewers and visual sensitivity; approximate viewing distance; and summary of visible change that would occur at each KOP location. For FHWA Rating Worksheets, see Appendix L.

Figure 5.5-3 KOP Locations



Imagery provided by ESRI and its licensors © 2023.

22-12530 Visual Resources
Fig X Viewpoint KOP Locations

Figure 5.5-4a KOP 1 – Existing View

Figure 5.5-4b KOP 1 – Simulated Project View

Figure 5.5-5a KOP 2 – Existing View

Figure 5.5-5b KOP 2 – Simulated Project View

Figure 5.5-6a KOP 3 – Existing View

Figure 5.5-6b KOP 3 – Simulated Project View

Figure 5.5-7a KOP 4 – Existing View

Figure 5.5-7b KOP 4 – Simulated Project View

Figure 5.5-8a KOP 5 – Existing View

Figure 5.5-8b KOP 5 – Simulated Project View

Figure 5.5-9a KOP 6 – Existing View

Figure 5.5-9b KOP 6 – Simulated Project View

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Table 5.5-2 Summary of Visual Change at KOPs

Photograph Number and Location	Viewers and Visual Sensitivity	Distance from KOP to Closest Project Component	Summary of Visual Change
KOP 1 Project Gen-tie	Motorists on I-5, crossing of locally designated scenic highway; low visual sensitivity	0.5 mile	The proposed gen-tie line and structures appear as prominent new linear features crossing the middleground of the landscape.
KOP 2 Project Gen-tie	Motorists on West Harlan Avenue; moderate visual sensitivity	0.25 mile	The proposed gen-tie line and structures appear as prominent new linear features crossing the foreground and extending through the middleground of the landscape.
KOP 3 Project Gen-tie, Option 2 BESS, step-up substation, and green hydrogen facility	Proximity to residences; high visual sensitivity	1.2 miles	The proposed gen-tie line and structures appear as faint new linear features crossing the middleground of the landscape. The Option 2 BESS, step-up substation, and green hydrogen facility appear as new, more visually prominent solid and linear in the middleground of the view.
KOP 4 Project Gen-tie, solar facility, and Option 1 BESS, step-up substation, and green hydrogen facility	Motorists on South Yuba Avenue and West Kamm Avenue; moderate visual sensitivity	2 miles	The proposed gen-tie line and structures appear as faint new linear features in the background of the landscape. The Option 1 BESS, step-up substation, and green hydrogen facility appear as new, more visually prominent solid and linear in the background of the view. The proposed solar facility presents as a new, indistinct horizontal feature in the background of the landscape.
KOP 5 Project Gen-tie, solar facility, and Option 1 BESS, step-up substation, and green hydrogen facility	Proximity to residences; high visual sensitivity	3 miles	No visual change occurs at KOP 5 due to intervening features blocking the view of Project components.
KOP 6 Project Gen-tie, solar facility, and Option 2 BESS, step-up substation, and green hydrogen facility	Proximity to residences; high visual sensitivity	0.35 mile	The proposed gen-tie line and structures appear as distinct new linear features in the middleground of the landscape. The Option 2 BESS, step-up substation, and green hydrogen facility appear as new, more visually prominent solid and linear in the middleground of the view. The proposed solar facility is not visible due to intervening features.

KOP 1

The location of KOP 1 is shown in Figure 5.5-3. This location is representative of motorist views of the Project from I-5. The sensitivity of this viewer group is considered low due to the short duration of views experienced at highway speeds.

Figure 5.5-4a documents the existing southeast-facing view toward the proposed gen-tie from the South Derrick Avenue/I-5 onramp. The existing view to I-5 motorists includes a foreground view dominated by manmade elements, attributed to the proximate transportation corridor. The asphalt surface of South Derrick Avenue is painted with typical 2-lane street markings. The I-5 freeway onramp creates a sweeping curve downhill onto the roadway. Green, red, and blue road signs for the I-5 freeway entrance contrast highly with their surroundings. Existing vertical features in the foreground view include overhead lighting structures, signpost supports, and white and yellow reflector stakes. Vegetation in the foreground and middleground of the view includes continuous masses of brown and tan annual grasses and weeds, with scattered silver and green-toned shrubs dotting the roadside. In the middleground of the view I-5 is visually cluttered with a variety of vehicles on the two-lane roadway. An existing distribution line strung along wooden poles can be seen crossing over the I-5 onramp and continues across the center of the view before disappearing into the distance to the right. Mature orchards present as a solid, green mass on the east side of I-5. A nearby commercial building appears as a solid, white block near the right side of the view with intermittent trees surrounding the parcel. A line of palm trees separates the commercial property from the transportation right-of-way. A solar array presents as a grey, horizontal cluster in front of the building. Behind the building, rows of agricultural crops and orchards present as a solid, green line near the center of the view. In the background, the Big Blue Hills are visible through the haze to the southwest and the faint outline of distant lattice steel towers are visible as grey, vertical features through the haze to the southeast. Human-made features, including asphalt roads, various colored signs, tall lighting structures, the existing commercial facility, and existing utility infrastructure encroach upon the view from KOP 1 and clutter the view. The existing view from KOP 1 has a moderately low visual quality.

Figure 5.5-4b shows a simulation of the view as it would appear after construction of the Project. The proposed gen-tie would cross over I-5 approximately 0.5 mile southeast of KOP 1. The proposed gen-tie competes for visual dominance with existing distribution infrastructure, existing commercial facility, and existing road surfaces and adds to the visual clutter the middleground of the view. The proposed gen-tie would be strung across galvanized steel structures (H-frame or monopole tubular steel poles), at least 120 feet tall, with a maximum height of 200 feet. The proposed gen-tie appears as tall, grey steel structures with faint, horizontal lines strung in between. The proposed gen-tie structures are skylined and have moderate contrast against the sky; the structures appear similar to the other various vertical features within the view, such as the existing distribution infrastructure and existing lighting structure. The Project doesn't change the view of mature orchards on the east side of I-5. Given the additional encroaching human-made features of the Project, unity and intactness of the view would decline compared to the existing conditions. Implementation of the Project would reduce overall visual quality at KOP 1 slightly from moderately low to low.

KOP 2

The location of KOP 2 is shown in Figure 5.5-3. This location is representative of motorist views of the Project from West Harlan Avenue. The sensitivity of this viewer group is considered moderate due to the extended duration of views experienced at decreased local road speeds as the Project parallels the roadway.

Figure 5.5-5a documents the existing east-facing view toward the proposed gen-tie from Harlan Avenue, approximately 0.15 miles west of the West Harlan Avenue and South Stanislaus Avenue intersection. Multiple ground-level features compete for dominance in the foreground of the view at KOP 2. West Harlan Avenue is paved with asphalt and contains two lanes, one in each direction. To the left of the roadway are expansive, green fields of agricultural row crops which disappear into the distance. An existing distribution line strung across wooden poles are skylined, contrasting highly against the sky, and follow the left side of the roadway into the distance at regular intervals. To the right of the roadway, a road shoulder approximately 15 to 20 feet wide is an irregular, compacted surface made of exposed brown earth and gravel. A brown-toned above-ground pipe parallels the length of the road shoulder, delineating the shoulder from the adjacent agricultural parcel. The agricultural parcel contains a compacted earth access road and regularly spaced, small and medium-sized orchard trees with bare, brown earth between. Vegetation in the foreground is mostly comprised of cultivated agricultural row crops and orchards. Weedy green and tan grasses and shrubs are intermittently scattered along the road shoulder and within the loose earth berm on the orchard-side of the above ground pipe. The middleground and background views at KOP 2 are limited by flat topography and intervening vegetation. Beyond the road curve to the right, where West Harlan Avenue meets South Stanislaus Avenue, another orchard is faintly visible. A small cluster of solid blue agricultural equipment is visible beyond the row crops on the north side of West Harlan Avenue. Silhouettes of distant utility structures and a distant orchard are faintly visible beyond the row crops to the north. Human-made features within the view include the asphalt roadway, compacted earth road shoulder and access road, pipeline, distribution line and poles, and distant blue agricultural equipment which encroach upon the view but are typical of similar sites in the vicinity. The existing view from KOP 2 has moderately low to average visual quality.

Figure 5.5-5b shows a simulation of the view as it would appear after construction of the Project. The proposed gen-tie would cross over West Harlan Avenue approximately 0.25 mile east of KOP 2, creating a set of horizontal lines across the center of the view. The proposed gen-tie structures are taller than the existing distribution lines along West Harlan Avenue and are skylined. The Project structures add distinct vertical and angular features to the view and have a grey steel finish that moderately contrasts against the sky. The existing distribution structures along the roadway appear less distinct with the addition of Project structures. Where the proposed gen-tie structures continue into the distance, they create a clutter of vertical and angular grey lines near the center of the view but largely do not change the condition of the existing background view. The proposed solar array is present approximately 5.5 miles away but is not visible in the view due to intervening features. The proposed gen-tie line becomes the primary focus of the view from KOP 2. The increased visibility of utility infrastructure results in a decrease of intactness and unity within the view. Implementation of the Project would reduce overall visual quality at KOP 2 from moderately low to low/moderately low.

KOP 3

The location of KOP 3 is shown in Figure 5.5-3. This location is representative of residential views of the Project from West Mt. Whitney Avenue. The nearest residences are located approximately 260 feet northwest of KOP 3, along South Amador Avenue, and another residence is located approximately 580 feet northeast of KOP 3 along West Mt. Whitney Avenue. The residence along West Mt. Whitney Avenue is located approximately 0.65 mile from the proposed solar facility and Option 2 green hydrogen facility. Viewer awareness and exposure would be high because of the residents' proximity to the Project. Therefore, the sensitivity of this viewer group is considered high.

Figure 5.5-6a documents the existing northeast-facing view toward the Project from West Mt. Whitney Avenue near its intersection with South Amador Avenue. The existing view to nearby residents includes red and white metal bollards and a red metal vehicle gate that delineate an agricultural staging area with flat, compacted, tan dirt. Tufts of dried, tan grasses and weeds are gathered near the bollards and gate. A field of row crops border the far side of the staging area and extend a green line across the middle of the view. A variety of red-toned agricultural equipment and a trailer with portable restrooms are parked in the middle of the staging area. A stand of large ornamental trees obscures the nearby West. Mt. Whitney Avenue residence on the right side of the view, which presents as a large white building with a peaked roof. In the middleground of the view, agricultural components presenting as grey frames with a grey central mill are visible to the left of, and beyond, the white structure. A series of dark, irregular silhouettes mark the outlines of trees, and the faint silhouettes of utility structures are distantly visible through the atmospheric haze. The background view from KOP 3 is not visible due to intervening features. Human-made features within the view include the bollards, gate, agricultural equipment, and white structure which all encroach upon the view. These features are typical of similar sites in the vicinity. The view from KOP 3 is not visually coherent, and due to numerous encroaching human-made elements, the existing view from KOP 3 has a moderately low visual quality.

Figure 5.5-6b shows a simulation of the view as it would appear after construction of the Project. Through the atmospheric haze, the proposed gen-tie structures are faintly visible approximately 1.2 miles away as tall, vertical features spaced evenly across the horizon with indistinct horizontal gen-tie spans strung in between. The Option 2 BESS and step-up substation are visible on the left half of the view, presenting as a series of white, boxy structures and an indistinct cluster of grey horizontal and vertical lines. The Option 2 green hydrogen facility appears as a series of white, boxy structures, which appear at approximately the same height as existing trees along the horizon. The proposed solar array is present approximately 3 miles away but is not visible in the view. The Project does not change the condition of the foreground or background views from KOP 3. The proposed gen-tie and Option 2 green hydrogen facility, BESS, and step-up substation add human-made elements to the distant view, but do not contrast highly against the sky or their surroundings. However, the increased visibility of utility infrastructure results in a decrease of intactness and unity of the view. Implementation of the Project would reduce overall visual quality at KOP 2 from moderately low, to low/moderately low.

KOP 4

The location of KOP 4 is shown in Figure 5.5-3. This location is representative of motorist views of the Project from South Yuba Avenue, West Kamm Avenue, and nearby access roads. The sensitivity of this viewer group is considered moderate due to the extended duration of views experienced at decreased local road speeds.

Figure 5.5-7a documents the existing southwest-facing view toward the Project from the intersection of South Yuba Avenue and West Kamm Avenue. In the foreground of the view, compacted, brown earth roadways intersect near the center of the view, then extend to the left (South Yuba Ave.) and the right (access road paralleling West Kamm Ave.). In the center of the view, steel guard rails mounted on thick wooden posts are installed upon a mound of loose earth and gravel, dominating the view. Behind the guard rails, and extending to the right of the view, Crescent Ditch drops steeply into a tan concrete drainage ditch with gravel berms and access roads on either side. The backside of metal stop signs and ditch warning signs are visible around Crescent Ditch. Vegetation in front of the guardrail is nonexistent, with only scattered scraps of weeds from vehicle traffic on top of the bare, brown earth. Beyond the guardrail, the view from KOP 4 consists of open,

flat parcels with short, pale green and tan vegetation cover which continues into the middleground. In the background of the view, distant tree lines appear as a dotted, dark line across the horizon. Distant structures are visible as specks of white along the otherwise neutral-toned surroundings. The silhouettes of the Big Blue Hills in the distance are faintly visible through the atmospheric haze and contrast faintly against the sky. Human-made features within the view include the compacted earth roadways, metal guard rail, signage, and Crescent Ditch, which are consistent with similar sites in the vicinity but encroach upon the view. The existing view from KOP 4 has moderately low/ average visual quality.

Figure 5.5-7b shows a simulation of the view as it would appear after construction of the Project. The Project does not change the condition of the foreground of the view. The proposed solar facility, gen-tie, and Option 1 green hydrogen facility, BESS, and step-up substation are distantly visible along the horizon. On the left side of the view, above the existing guardrail, the proposed gen-tie presents as a faint series of evenly-spaces vertical lines. The Option 1 green hydrogen facility, BESS, and step-up substation present as a dotted cluster of white structures, with proximate vertical structures barely perceptible through the atmospheric haze. The proposed solar facility appears as a solid, dark line just below the horizon across the right two-thirds of the view approximately 2 miles away. The proposed solar array does not contrast highly with its surroundings, and generally blends in with existing orchards in the distance. The Option 1 green hydrogen facility, BESS, and step-up substation add distinct, human-made features to the view. The white Project component finishes contrast against the neutral tones of proximate features but are relatively small in context with their greater surroundings. Project components have little encroachment impact, however the addition of white-finish Project structures against the backdrop of the Big Blue Hills and neutral-colored surroundings increases their visibility and slightly reduces visual unity within the view. Implementation of the Project would slightly reduce overall visual quality at KOP 4 from moderately low/average to moderately low.

KOP 5

The location of KOP 5 is shown in Figure 5.5-3. This location is representative of residential views of the Project from West Kamm Avenue. The nearest residence is located approximately 800 feet to the west of KOP 5. The proposed solar facility is irregular in shape and is located 1.15 miles to the southeast and 2.8 miles to the south of the residence. Viewer awareness and exposure would be high because of the residents' proximity to the Project. Therefore, the sensitivity of this viewer group is considered high.

Figure 5.5-8a documents the existing south-facing view toward the Project from West Kamm Avenue. The foreground of the view is visually dominated by the expanse of agricultural fields containing green row crops, which continue into the middleground. Human-made features within the view are comprised of the compacted, tan earthen roadway of West Kamm Avenue and small, distant agricultural vehicles. In the distance, a lone tree marks the corner of West Stroud Avenue and South Sonoma Avenue. A mature orchard stretches along the right centerline of the image. Along the center horizon, a parcel of orchard trees creates a dark green line above the row crops. The silhouette of the Big Blue Hills is nearly indistinguishable through the haze above the orchards to the southwest of KOP 5. The view at KOP 5 is generally intact and contains minimal encroaching elements. The landscape is generally unified in form, color, and texture. Therefore, the existing view at KOP 5 has a moderately high visual quality.

Figure 5.5-8b shows a simulation of the view as it would appear after construction of the Project. As shown in the simulation, no Project components would be visible from KOP 5 due to intervening

features. Thus, the Project would not change the condition of the view, and the overall quality at KOP 5 would remain moderately high.

KOP 6

The location of KOP 6 is shown in Figure 5.5-3. This location is representative of residential views of the Project from West Cerini Avenue. The nearest residence is located approximately 150 feet to the southeast of KOP 6, along West Cerini Avenue. This residence is located approximately 0.3 mile from the proposed solar facility and 0.6 mile from the Option 2 BESS. Viewer awareness and exposure would be high because of the residents' proximity to the Project. Therefore, the sensitivity of this viewer group is considered high.

Figure 5.5-9a documents the existing south-facing view toward the Project from West Cerini Avenue. The existing view to residents includes an expanse of tilled, brown earth with brown/tan weeds, which continue through the middleground and disappear into the distance. On the left side of the view, a brown-grey compacted access road separates the tilled earth from residential and active agricultural parcels. A large, green tree stands tall on the left side of the image and contrasts highly against the sky. Beyond the large ornamental tree, top-trained crops create a line of green that continues through then disappears into the distance. Distant trees create dots of green along the horizon. Through the atmospheric haze, the faint silhouettes of the Guijarral Hills (approximately 20 miles distant) are barely perceptible against the sky. The existing view from KOP 6 is generally intact, with minimal encroaching elements, and is generally unified in form, color, and texture. However, the agricultural and residential parcels are not visually consistent with the tilled parcels across the access road. Thus, the existing view from KOP 6 has an average visual quality.

Figure 5.5-9b shows a simulation of the view as it would appear after construction of the Project. The proposed solar array is present approximately 0.35 miles away from KOP 6 but is not visible and thereby does not change the condition of the foreground view. The proposed gen-tie line and Option 2 green hydrogen facility, BESS, and step-up substation are visible in the middleground (between 0.65 and 0.8 miles away from KOP 6) across the center of the view. The proposed gen-tie line creates a distinct horizontal line through the middle of the view, and is strung across tall, regularly spaced steel structures that are skylined and moderately contrast against the sky. The Option 2 green hydrogen facility appears as a series of solid white, cylindrical structures near the center of the view which compete for dominance within the view. The Option 2 BESS and step-up substation components appear as a cluster of grey vertical and angular lines of varying heights on the right side of the view. Generally, the Project structures create visual clutter within the view and the white component finishes contrast against the neutral tones of their surroundings. Distant Project components have moderate encroachment impact and the addition of white-and-steel-finish Project components against the backdrop of the sky increases their visibility and reduces visual unity. Implementation of the Project would reduce overall visual quality at KOP 2 from average to low/moderately low.

5.5.1.4 Impact Evaluation Criteria

The potential for impacts to visual resources and their uses were evaluated using the criteria described in the California Environmental Quality Act (CEQA) Environmental Checklist (Appendix G of the CEQA Guidelines). Specific to visual resources, the CEQA Checklist asks, 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 nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality; and/or
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Impact VIS-1

Threshold:	Would the project have a substantial adverse effect on a scenic vista?
Threshold:	Would the project substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

For the purposes of this evaluation, a scenic vista is defined as a distant public view along or through an opening or corridor that is recognized and valued for its scenic quality. There are no designated state or local scenic vistas in the Project area. However, the Fresno County General Plan (Policy OS-L.1) identifies I-5 as a designated scenic highway within the County (Fresno County 2000). Thus, the expansive agricultural and mountain features along I-5 would function as scenic vistas along a scenic highway throughout the Project vicinity. The Fresno County General Plan (Policy OS-K.1) encourages the preservation of scenic views and vistas and requires development and overhead utilities adjacent to scenic roadways, such as I-5, to be developed and routed to minimize impacts to scenic quality (Policy OS-K.4 and Policy OS-L.3).

Solar Facility, Step-Up Substation, and Gen-Tie

Construction

Less Than Significant Impact. Construction of the proposed solar facility and Options 1 and 2 step-up substations would not be visible from I-5 due to distance and intervening features (i.e., topography, structures, vegetation). Construction of the step-up substation at the alternate green hydrogen facility and portions of the gen-tie would be visible from I-5. However, construction would be temporary, and views of these construction activities would be of short duration at highway speed. Therefore, construction of these Project components would not adversely affect scenic vistas or damage scenic resources within a state scenic highway.

Operation

Less Than Significant Impact. During operations, the proposed solar facility and Options 1 and 2 step-up substations would not be visible from I-5 due to distance and intervening features (i.e., topography, structures, vegetation). The gen-tie line was sited with a perpendicular crossing at I-5 and the line does not run adjacent to the interstate. Portions of the gen-tie would be visible from I-5. However, views of these components would be of short duration at highway speed and would not substantially affect the number of unimpeded views along I-5. Therefore, operation of these Project components would not adversely affect scenic vistas or damage scenic resources within a state scenic highway.

BESS

Construction

No Impact. Construction of the Options 1 and 2 BESS would not be visible from I-5 due to distance and intervening features (i.e., topography, structures, vegetation). Therefore, construction of this Project component would not adversely affect scenic vistas or damage scenic resources within a state scenic highway.

Operation

No Impact. The Options 1 and 2 BESS would not be visible from I-5 due to distance and intervening features (i.e., topography, structures, vegetation). Therefore, operations of this Project component would not adversely affect scenic vistas or damage scenic resources within a state scenic highway.

Green Hydrogen

Construction

Less Than Significant Impact. Construction of the Options 1 and 2 green hydrogen components would not be visible from I-5 due to distance and intervening features (i.e., topography, structures, vegetation). Construction of the alternate green hydrogen facility would be visible from I-5. However, construction would be temporary, and views of these construction activities would be of short duration at highway speed. Therefore, construction of this Project component would not adversely affect scenic vistas or damage scenic resources within a state scenic highway.

Operation

Less Than Significant Impact. During operations, the proposed Options 1 and 2 green hydrogen components would not be visible from I-5 due to distance and intervening features (i.e., topography, structures, vegetation). The alternate green hydrogen facility would be visible from I-5. However, views of these components would be of short duration at highway speed and would not substantially affect the number of unimpeded views along I-5. Therefore, operation of this Project component would not adversely affect scenic vistas or damage scenic resources within a state scenic highway.

Utility Switchyard

Construction

Less Than Significant Impact. Construction of the utility switchyard would be visible from I-5. However, construction would be temporary, and views of these construction activities would be of short duration at highway speed. Therefore, construction of the utility switchyard would not adversely affect scenic vistas or damage scenic resources within a state scenic highway.

Operation

Less Than Significant Impact. The utility switchyard would be visible from I-5. However, views of this component would be of short duration at highway speed and would not substantially affect the number of unimpeded views along I-5. Therefore, operation of this Project component would not adversely affect scenic vistas or damage scenic resources within a state scenic highway.

Overall Project

Construction

Less Than Significant Impact. Construction activity associated with the Project would be temporary and of short duration in any one location and would not substantially affect the number of unimpeded views along I-5. Therefore, construction of the Project would not adversely affect scenic vistas or damage scenic resources within a state scenic highway.

Operation

Less Than Significant Impact. Project components visible from I-5 would include the proposed gen-tie line, utility switchyard, and alternate green hydrogen site. These Project components would be located in proximity to existing commercial and agricultural facilities and utility ROWs that include existing subtransmission and distribution lines, tubular steel poles, dead-end structures, and wooden poles. While there are locations along I-5 where the Project components may impede a given view, views of these facilities would be of short duration due to highway speeds, and the majority of views of the surrounding mountains would remain unimpeded. Therefore, operation of the Project would not adversely affect scenic vistas or damage scenic resources within a state scenic highway.

Impact VIS-2

Threshold:	Would the project, in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings?

Solar Facility, Step-Up Substation, and Gen-Tie

Construction

Less than Significant Impact. As described previously, construction of the Project would require establishing a temporary 20-acre construction laydown yard for vehicle and equipment parking, as well as material storage. The construction laydown yard would be located within the solar facility and located at either the Option 1 or Option 2 step-up substation site. To varying degrees, activities at the construction laydown yard would be noticeable to a limited number of rural residents, as well as motorists along local roads.

While Project construction activities would be visible for a period of 18 to 36 months, individual activities would be considerably shorter in duration at any one location. The majority of the proposed solar facility and step-up substation construction activities would occur within rural areas lacking sensitive viewers, and areas that are not visible from publicly accessible vantage points. However, residents located in immediate proximity (50 to 100 feet) of the proposed solar facility and motorists along local roads would have views of construction activities throughout the duration of the solar facility and step-up substation construction. Construction activities would be temporary, and construction-related visual impacts resulting from the temporary presence of equipment, materials, and work crews would not permanently or substantially degrade the existing visual character of the landscape. Because construction impacts would be temporary and of short duration in any one area, impacts to visual character and quality would be less than significant.

Construction of the gen-tie line proximate to and crossing I-5 would be visible to motorists on the interstate and motorists along local roads. As the proposed gen-tie line is constructed, following

West Harlan Avenue and crossing over the roadway, motorists along West Harlan Avenue and nearby local roads would have views of construction activities. Additionally, gen-tie line construction would be visible to scattered rural residents such as those along Mt. Whitney Avenue. Project construction activities would not permanently or substantially degrade the existing visual character of the landscape because Project construction impacts would be temporary and of short duration in any one area as construction occurs along the gen-tie line. Impacts of gen-tie line construction would be less than significant.

Operation

Less Than Significant with Mitigation. The proposed solar facility would introduce an up to 8,840-acre solar facility into a landscape that is currently comprised of a patchwork of agricultural uses such as retired fields, row crops, and orchards. Viewers include local motorists with moderate viewer sensitivity and residents with high viewer sensitivity. As shown in Figure 5.5-7b (KOP 4) and Figure 5.5-9b (KOP 6) and described in the *Visual Impact Assessment* section above, the proposed solar array would appear as a solid, horizontal feature that does not contrast highly in the view. The step-up substation is generally visible as an indistinct cluster of grey horizontal and vertical lines (Figure 5.5-6b; KOP 3) The industrial character of the solar facility and step-up substation would contrast with the existing agricultural site surroundings and result in a minor reduction of visual character and quality, as described above in the *Visual Impact Assessment*.

As shown in Figure 5.5-4b, Figure 5.5-5b, Figure 5.5-6b, Figure 5.5-7b, and Figure 5.5-9b and described in the *Visual Impact Assessment* section above, the proposed gen-tie would be visible from KOPs 1, 2, 3, 4, and 6 and throughout the Project vicinity. The proposed gen-tie would add visually dominant human-made features and contribute to a decrease in visual coherence, intactness, and unity within these views.

Mitigation Measure VIS-1 would require a Surface Treatment Plan to be prepared and implemented for the Project, which would ensure that potentially significant impacts associated with color contrast and glare for the Project are reduced. With implementation of VIS-1, operation impacts of these Project components would be less than significant.

BESS

Construction

Less than Significant Impact. The Options 1 and 2 BESS component would be approximately 32 acres in size, located within the solar facility and adjacent to the Options 1 and 2 step-up substation components. At the Option 1 BESS location, construction activities would be visible to a small number of local motorists along less well-traveled roads, such as West Davis Avenue and South El Dorado Avenue. At the Option 2 BESS location, construction activities would be highly visible to motorists along South Sonoma Avenue and West Harlan Avenue, which are more frequently traveled, as well as few rural residences in the vicinity. However, the proposed solar facility surrounding the Options 1 and 2 BESS locations would be nearing completion when construction of the BESS begins; and thus, would largely obscure activities during construction. Further, Project construction activities would not permanently or substantially degrade the existing visual character of the landscape because all Project construction impacts would be temporary and of short duration in any one area. Impacts would be less than significant.

Operation

Less than Significant Impact with Mitigation. The Options 1 and 2 BESS component enclosures would be approximately 8.5 feet tall, and light or neutral in color. Amidst the 10-foot-tall solar panels and other components within the proposed solar facility, the BESS would be screened and generally obscured from all but very limited views (i.e., where the BESS fronts local streets as described above). Where the BESS is visible, viewers include local motorists with moderate viewer sensitivity and residents with high viewer sensitivity. The BESS would present as shown in Figure 5.5-6b (KOP 3), Figure 5.5-7b (KOP 4), and Figure 5.5-9b (KOP 6) and described in the *Visual Impact Assessment* section above, the Option 1 and 2 BESS would appear as solid white, boxy structures, similar in form to existing silos and storage tanks in the vicinity. The proposed BESS would contribute to encroaching human-made features which decrease intactness and unity within the view, as represented at KOPs 3, 4, and 6. While the proposed BESS would be a relatively small component in context with the greater Project, consistent with Mitigation Measure VIS-1, a Surface Treatment Plan would be prepared for the BESS to ensure that the potential impacts associated with color contrast and glare for the component are reduced. Therefore, this impact would be less than significant after mitigation.

Green Hydrogen

Construction

Less than Significant Impact. Three locations are being considered for the green hydrogen facility. At the Option 1 green hydrogen component location, construction activities would be visible to a small number of local motorists along less well-traveled roads, such as South Napa Avenue, West Davis Avenue, and South El Dorado Avenue, and distantly visible to motorists along South Sonoma Avenue, which is more frequently traveled. At the Option 2 green hydrogen component location, construction activities would be highly visible to motorists along South Sonoma Avenue and West Harlan Avenue, which are well-traveled local roads, as well as few rural residences in the vicinity. At the alternate green hydrogen site, west of I-5, Project construction activities would be visible to motorists along South Derrick Avenue and I-5. However, Project construction activities would not permanently or substantially degrade the existing visual character of the landscape because Project construction impacts would be temporary and of short duration in any one area. Impacts would be less than significant.

Operation

Less than Significant Impact with Mitigation. The Option 1 and 2 green hydrogen component sites would be up to 225 acres in size and would be located within the footprint of the solar facility. If the 100-acre alternate site (west of I-5) is selected, it would also include the construction of a substation and switchyard on approximately 20 additional acres. At the Options 1 and 2 locations, the green hydrogen facility would be seen in context with the solar facility. Viewers would include local motorists with moderate viewer sensitivity and residents with high viewer sensitivity. At the alternate green hydrogen site location, west of I-5, the green hydrogen facility would be surrounded by agricultural land uses with some commercial and industrial uses such as Nunes Cooling, as well as the I-5 transportation corridor. Viewers include motorists on I-5 with low viewer sensitivity. As shown in Figure 5.5-6b (KOP 3), Figure 5.5-7b (KOP 4), and Figure 5.5-9b (KOP 6) and described in the *Visual Impact Assessment* section above, the proposed green hydrogen components would appear as solid white, cylindrical structures which contrast with their surroundings. The green hydrogen components would contribute to the decrease in visual intactness and unity within these

views, and generally add distinct human-made structures where there currently are none. Consistent with Mitigation Measure VIS-1, a Surface Treatment Plan would be prepared for the Project to ensure that the potentially significant impacts associated with color contrast and glare for the green hydrogen components of the Project are reduced. With implementation of VIS-1, operation impacts of these Project components would be less than significant.

Utility Switchyard

Construction

Less Than Significant Impact. The utility switchyard would be located west of I-5. Utility switchyard construction activities would be visible to motorists traveling along South Derrick Avenue and I-5. However, Project construction activities would not permanently or substantially degrade the existing visual character of the landscape because Project construction impacts would be temporary and of short duration in any one area. Impacts would be less than significant.

Operation

Less than Significant Impact with Mitigation. The utility switchyard would be located west of I-5 on approximately 40 acres; the site would be immediately adjacent to the PG&E Los Banos-Midway #2 500 kV transmission line and surrounded by agricultural land uses with some commercial and industrial uses such as Nunes Cooling, as well as the I-5 transportation corridor. Metal surfaces would be non-reflective. The facility would be visible to motorists on I-5 with low viewer sensitivity. The utility switchyard would appear in the landscape as a distinct cluster of grey horizontal and vertical lines, into which the gen-tie line would extend. The industrial character of the utility switchyard would contrast with the existing agricultural site surroundings and result in a reduction of visual character and quality, primarily associated with the level of contrast the facility would bring to its surroundings. Consistent with Mitigation Measure VIS-2, a Utility Switchyard Surface Treatment Plan would be prepared to ensure that the potentially significant impacts associated with color contrast and glare are reduced. With implementation of VIS-2, operation of the utility switchyard would be less than significant.

Overall Project

Construction

Less than Significant Impact. While Project construction activities would be visible to motorists on local roads and I-5, as well as rural residences, Project construction activities would not permanently or substantially degrade the existing visual character of the landscape. Project construction impacts would be temporary and of short duration in any one area and impacts to visual character and quality would be less than significant.

Operation

Less than Significant Impact with Mitigation. Operation of the Project would introduce new renewable energy and electric utility infrastructure on approximately 9,500 acres that are currently used for agriculture and contain minimal utility infrastructure. The proposed solar array would be located on flat parcels with an existing, expansive view of agricultural fields in immediate proximity to existing residences. The proposed gen-tie, utility switchyard, and Option 1 and 2 step-up substations would contribute visible, tall steel utility components in new locations, however similar

features are present within the vicinity. The proposed green hydrogen facility and Option 1 and 2 BESS would appear as blocky white structures, adding distinct human-made structures to the landscape. Mitigation Measures VIS-1 and VIS-2 would require Surface Treatment Plans be prepared and implemented for the Project, which would ensure that potentially significant impacts associated with color contrast and glare for components of the Project are reduced. With implementation of VIS-1 and VIS-2, impacts of Project operation would be less than significant.

Mitigation Measures

VIS-1 Surface Treatment Plan

To reduce potential significant impacts associated with color contrast and glare for components of the Project, the applicant will prepare and implement a Surface Treatment Plan for new above-ground structural elements associated with the solar facility, step-up substation, BESS, gen-tie line, and green hydrogen facility. The Surface Treatment Plan will require that the finishes on all new transmission and other structures with metal surfaces shall be non-reflective, and new conductors shall be non-specular. The Surface Treatment Plan will also address non-steel structural elements associated with Project components, such as buildings and storage tanks. Colors will be selected according to their ability to reduce the aesthetic impact associated with contrast with the surrounding landscape. Color finishes will be flat and non-reflective. The Surface Treatment Plan will include an evaluation of the final location of the step-up substation, BESS, and green hydrogen facility to evaluate structure finishes and color in the appropriate landscape context.

VIS-2 Utility Switchyard Surface Treatment Plan

To reduce potential significant impacts associated with contrast and glare for components of the utility switchyard, the applicant will prepare and implement a Utility Switchyard Surface Treatment Plan. The Utility Switchyard Surface Treatment Plan will require that the finishes on all new transmission and other structures with metal surfaces shall be non-reflective, new conductors shall be non-specular, and the plan will be prepared consistent with PG&E's surface treatment standards.

Impact VIS-3

Threshold:	Would the project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?

As detailed in Chapter 2, Project Description, and Section 5.5.3.1, *Project Lighting,* Project lighting would be implemented in compliance with Fresno County Code of Ordinances; care would be taken to prevent undue light pollution from nighttime operational and security lighting. Lighting fixtures would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties and major roadways, and lighting at all facilities would be restricted to areas required for safety, security, and operation.

Solar Facility, Step-Up Substation and Gen-Tie

Construction

Less than Significant Impact. Existing sources of nighttime lighting near the proposed solar facility, Options 1 and 2 step-up substation sites and the gen-tie line include headlights from vehicles on roadways, scattered rural residences, and agricultural and commercial facilities. Sensitive receptors

in the area primarily consist of motorists traveling along local roadways, who would not be affected substantially by the temporary increase in lighting during construction, and rural residents immediately proximate to the Project site. As detailed in Chapter 2, Project Description, and Section 5.5.3.1, *Project Lighting,* construction lighting for these Project components would be restricted to areas required for safety, security, and operation. Construction activities would occur at discrete areas of the Project site as construction progresses, and any sources of light or glare would not be stationary for a prolonged period. Care would be taken to prevent undue light pollution from nighttime security lighting, and if temporary nighttime lighting is required, all lighting standards would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties and roadways. Through use of shielded, downward, and Project-facing lighting, temporary impacts of light and glare on adjacent roadways or neighboring properties during construction would be less than significant.

Operation

Less than Significant Impact with Mitigation. As described above, lighting at the proposed solar facility, Options 1 or 2 step-up substation component would be restricted to areas required for safety, security, and operation. Security lights would use motion sensor technology that would be triggered by movement at a human's height, as not to be triggered by smaller wildlife. The level and intensity of lighting during operations would be the minimum needed. Portable lighting may be used occasionally for maintenance activities during operations, such as emergency work that must occur at night. This lighting may be visible for motorists along local roadways and I-5, and rural residents. However, operational lighting would be the minimum needed, and all lighting would be shielded and downward-facing to prevent spillover onto adjacent properties and roadways. Thus, lighting impacts resulting from these Project component would be less than significant.

The Applicant does not anticipate installing any new structure lighting as part of the proposed gen-tie line, with the exception of aviation lighting and/or marking that may be required for some structures. Upon completion of final design, the Applicant would file with the FAA, if necessary, for official study and determination of lighting and/or marking requirements for these structures. Aviation lights would direct light upward and outward without illuminating nearby areas directly below the lights, and no visible reflected light would be visible from the ground surface. Aviation lighting would be visible for motorists along local roadways and I-5, as well as rural residences. However, any aviation lighting required for the Project would be consistent with similar, existing aviation lighting in the vicinity. Therefore, operational lighting impacts resulting from this Project component would be less than significant.

As described in Chapter 2, *Project Description*, the proposed solar array would use fixed-tilt arrays, oriented along an east-west axis with panels facing generally south or single-axis tracking arrays, oriented along a north-south axis with panels tracking east to west to follow the movement of the sun. Both types of arrays are described in Section 2.1.2.2, *Photovoltaic Panels and Support Structures*. This tracking system would allow incident solar rays to be perpendicular to the solar photovoltaic (PV) panel. Any light that hits the panel would be reflected at an angle toward the light source rather than toward motorists or sensitive receptors on the ground.

The reflection of sunlight off solar panel surfaces would be the primary source of potential glare from the Project. Solar panels comprise cells designed to capture solar energy to convert it into usable energy. Therefore, solar panels are designed to absorb as much light as possible to maximize the efficiency of energy production. Additionally, the PV panels would be treated with an anti-reflective coating that further reduces the reflectivity of the panels. As reported by the National

Renewable Energy Laboratory (NREL), viewed from most near normal angles, modern PV panels reflect as little as two percent of incoming sunlight, about the same as water and less than soil or wood shingles (NREL 2018). Therefore, it is not anticipated that the proposed solar facility would result in an increased amount of glare regardless of if they were fixed-tilt or single-axis tracking, even if they were oriented in such a way as to face sensitive receptors or drivers. Therefore, operation and maintenance of the proposed solar facility would not introduce a source of glare that would significantly impact views in the area, and impacts would be less than significant.

To reduce potential impacts associated with glare from structures associated with the step-up substation and gen-tie, structure surface treatments would feature flat and non-reflective color finishes. These types of finishes are designed to reduce light reflection and color contrast and help blend the structures into the landscape setting. These finish specifications will be included in the Surface Treatment Plan prepared as part of Mitigation Measure VIS-1. With implementation of VIS-1, these Project components would not create new substantial sources of glare and impacts would be less than significant.

BESS

Construction

Less than Significant Impact. Existing sources of nighttime lighting near the Options 1 and 2 BESS component include headlights from vehicles on roadways, scattered rural residences, and agricultural and commercial facilities. As detailed in Chapter 2, Project Description, and Section 5.5.3.1, *Project Lighting,* construction lighting for the BESS component would be restricted to areas required for safety, security, and operation. Care would be taken to prevent undue light pollution from nighttime security lighting, and if temporary nighttime lighting is required, all lighting standards would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties and roadways. Therefore, the potential for glare and nighttime lighting during construction of these Project components to impact views would be minimal, and impacts would be less than significant.

Operation

Less than Significant Impact with Mitigation. To reduce off-site lighting impacts, lighting at the Options 1 and 2 BESS component locations would be restricted to areas required for safety, security, and operation. Security lights would use motion sensor technology that would be triggered by movement at a human's height, as not to be triggered by smaller wildlife. In the event that operations or maintenance activities are required outside of daylight hours, vehicular headlights may be required, and portable light standards similar to those utilized during construction may be used. However, vehicular headlights are an existing source of light in the vicinity, and any additional lighting associated with nighttime operational activities would be temporary, infrequent, shielded, and directed downward. No new sources of substantial light would be created by these activities.

To reduce potential impacts associated with glare and color contrast for components of the BESS, surface treatments would feature flat and non-reflective color finishes. These types of finishes are designed to reduce light reflection and color contrast and help blend the structures into the landscape setting. These finish specifications will be included in the Surface Treatment Plan prepared as part of Mitigation Measure VIS-1. With implementation of MM VIS-1, this Project component would not create new substantial sources of glare and impacts would be less than significant.

Green Hydrogen

Construction

Less than Significant Impact. Existing sources of nighttime lighting near the Options 1 and 2 green hydrogen sites include headlights from vehicles on local roadways, scattered rural residences, and agricultural and commercial facilities. Existing sources of nighttime lighting near the alternate green hydrogen site include headlights from vehicles on local roadways and I-5, standalone light fixtures, and agricultural and commercial facilities. As detailed in Chapter 2, *Project Description*, and Section 5.5.3.1, *Project Lighting,* construction lighting at the Options 1 and 2 and alternate green hydrogen sites would be restricted to areas required for safety, security, and operation. Care would be taken to prevent undue light pollution from nighttime security lighting, and if temporary nighttime lighting is required, all lighting standards would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties and roadways.

Should occasional nighttime construction be required for the Project, any lighting would be occasional, temporary, and would be shielded downward. Therefore, the potential for nighttime lighting during construction of the Options 1 or 2 or alternate green hydrogen component to impact nighttime views would be minimal, and impacts would be less than significant.

Construction activities may temporarily increase glare conditions near the construction site due to an increase in reflective materials, such as construction equipment and vehicles. However, any increases in glare that would result from construction activities would be minimal and temporary. Construction activities would occur at discrete areas of the site as construction progresses, and any sources of glare would not be stationary for a prolonged period. As a result, Project construction activities associated with this Project component would not introduce new, substantial sources of glare that could affect daytime views in the vicinity, and impacts would be less than significant.

Operation

Less than Significant Impact with Mitigation. As described above, to reduce off-site lighting impacts, lighting at the Options 1 and 2 green hydrogen site and alternate green hydrogen site would be restricted to areas required for safety, security, and operation. Security lights would use motion sensor technology that would be triggered by movement at a human's height, as not to be triggered by smaller wildlife. The level and intensity of lighting during operations would be the minimum needed. Portable lighting may be used occasionally for maintenance activities during operations, such as emergency work that must occur at night.

From Options 1 or 2 green hydrogen sites, infrequent security-related operational lighting would be visible for motorists along local roadways and scattered rural residents. From the alternate green hydrogen site, infrequent security-related operational lighting would be visible for motorists along local roadways and I-5, and agricultural and commercial facilities. Operational lighting would be the minimum needed, and impacts resulting from the green hydrogen component would be less than significant.

To reduce potential impacts associated with glare and color contrast for components of the Options 1, 2, and alternate green hydrogen facility, surface treatments for facility components would feature flat and non-reflective color finishes, and the finish on all new structures would be non-reflective such as treated or galvanized steel to create a dull finish or color treated. These types of finishes would reduce light reflection and color contrast and help blend the structures into the landscape setting. These finish specifications will be included in the Surface Treatment Plan

prepared as part of Mitigation Measure VIS-1. With implementation of MM VIS-1, this Project component would not create new substantial sources of glare and impacts would be less than significant.

Utility Switchyard

Construction

Less than Significant Impact. Existing sources of nighttime lighting near the utility switchyard include headlights from vehicles on local roadways and I-5, standalone light fixtures, and agricultural and commercial facilities. As detailed in Chapter 2, Project Description, and Section 5.5.3.1, *Project Lighting,* construction lighting at the proposed utility switchyard would be restricted to areas required for safety, security, and operation. Care would be taken to prevent undue light pollution from nighttime security lighting, and if temporary nighttime lighting is required, all lighting standards would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties and roadways. Therefore, the potential for nighttime lighting during construction of this Project component to impact nighttime views would be minimal, and impacts would be less than significant.

Construction activities would temporarily increase glare conditions near the construction site due to an increase in reflective materials, such as construction equipment and vehicles. However, any increases in glare that would result from construction activities would be minimal and temporary. Construction activities would occur at discrete areas of the site as construction progresses, and any sources of glare would not be stationary for a prolonged period. As a result, Project construction activities would not introduce new, substantial sources of glare that could affect daytime views in the vicinity, and impacts would be less than significant.

Operation

Less than Significant Impact with Mitigation. Existing sources of nighttime lighting near the utility switchyard include headlights from vehicles on local roadways and I-5, standalone light fixtures, and agricultural and commercial facilities. As detailed in Chapter 2, Project Description, and Section 5.5.3.1, *Project Lighting,* care would be taken to prevent undue light pollution from nighttime security lighting. To reduce off-site lighting impacts, lighting at the utility switchyard would be restricted to areas required for safety, security, and operation. Security lights would use motion sensor technology that would be triggered by movement at a human's height, so as not to be triggered by smaller wildlife. The level and intensity of lighting during operations would be the minimum needed. Portable lighting may be used occasionally for maintenance activities during operations, such as emergency work that must occur at night.

Infrequent security-related operational lighting from the utility switchyard would be visible for motorists along local roadways and I-5, and agricultural and commercial facilities. However, motorists would view this lighting from roadway speeds in the setting of the existing transportation corridor, which has existing sources of light from vehicle headlights and standalone light fixtures. Operational lighting would be the minimum needed, and the resulting impacts would be less than significant.

To reduce potential impacts associated with glare and color contrast for components of the utility switchyard, the finish on all new structures would be non-reflective such as treated or galvanized steel to create a dull finish, which would reduce light reflection and help blend the structures into the landscape setting. These finish specifications will be included in the Utility Switchyard Surface

Treatment Plan prepared as part of Mitigation Measure VIS-2. With implementation of MM VIS-2, this Project component would not create new substantial sources of glare and impacts would be less than significant.

Overall Project

Construction

Less than Significant Impact. While Project construction activities would be visible to motorists on local roads and I-5, as well as rural residences, Project construction lighting would be restricted to areas required for safety, security, and operation. Care would be taken to prevent undue light pollution from nighttime security lighting, and if temporary nighttime lighting is required, lighting standards would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties and roadways. Project construction impacts related to light and glare would be less than significant.

Operation

Less than Significant Impact with Mitigation. Operational Project lighting would be restricted to areas required for safety, security, and operation, such as the O&M facilities, step-up substation, utility switchyard, BESS, green hydrogen facility, gates, and along perimeter fencing. Security lights would use motion sensor technology that would be triggered by movement at a human's height, so as not to be triggered by smaller wildlife, and would only light areas when required. Consistent with Fresno County design standards, all lighting would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties and roadways. Any aviation lighting required for the Project would be consistent with similar, existing aviation lighting in the vicinity.

Project operation would introduce potential sources of glare to the Project vicinity, particularly related to light reflection from new steel or painted facilities. Implementation of a Surface Treatment Plan, specified in MM VIS-1, would ensure that impacts from Project operation would be less than significant.

5.5.4 Cumulative Impacts

Impacts of the Project would be considered cumulatively considerable if they would have the potential to combine with other past, present, or reasonably foreseeable projects to become significant.

Overall Project

The Project area and vicinity (2-mile radius) in which cumulative projects are located contains views of the expansive, agricultural patchwork with interspersed development centered around transportation corridors and residential areas. The visual character of the Project area and cumulative project area is largely agricultural with some scattered industrial, commercial, and residential pockets.

The cumulative project area does not contain any designated scenic vistas or state scenic highways. However, Fresno County has designated I-5 as a scenic roadway within the County. Similar to the Project, while there are locations throughout the cumulative project vicinity where new development may impede a given view, the new development would be minor when taken as a

whole within the greater landscape. Therefore, cumulative projects are anticipated to have less than significant impacts to scenic vistas and scenic resources within a state scenic highway.

Implementation of the Project would alter the visual character and quality in the Project vicinity by introducing dominant industrial characteristics into a landscape with a largely agricultural character. Similarly, the cumulative projects listed in Table 5-1 would potentially alter the visual character and view quality in the 2-mile vicinity around the Project. Development of cumulative projects such as expanded exploration and production of oil and gas and additional utility infrastructure would broaden the footprint of development within the greater expansive, agricultural setting.

The visual simulations prepared for the Project at KOPs 1 through 6 demonstrate that Project visibility varies based on viewing location and Project components present in a particular view and selected views exhibit different levels of contrast with the surrounding environment. Generally, while the Project would result in a reduction of visual character and quality, the implementation of Mitigation Measures VIS-1 and VIS-2 would ensure that impacts are less than significant.

Cumulative projects that may individually have impacts to visual character and quality include FC-4 (pistachio processing facility), FC-2 (bridge replacement), FC-1 (zoning change), and FC-14 (solar facility). These cumulative projects range from 6.5 to 8.75 miles from the Project and would not be visible when combined with the Project. Therefore, the Project would not contribute to a cumulative considerable impact related to a decrease in visual character and quality.

As discussed in Impact VIS-3, the Project would not be a source of considerable light or glare with implementation of Mitigation Measures VIS-1 and VIS-2. Cumulative projects FC-9, FC-12, FC-13, FC-14, FC-15, FC-16, WWD-1, and WWD-2, which are solar photovoltaic and/or green hydrogen power generating facilities, may result in new sources of glare. However, because the Project would not be a new substantial source of glare, it would not contribute to a cumulatively considerable impact. Cumulative projects FC-8, a gas station and convenience store, and FC-10 and FC-11, both commercial centers would be anticipated to result in new sources of nighttime light. However, because the Project would not be a new significant source of light, it would not contribute to a cumulatively considerable impact.

Utility Switchyard

Construction and operation of the utility switchyard is considered in the cumulative impact analysis of the overall Project discussed above; therefore, similar to the overall Project, cumulative impacts related to visual resources would be less than significant with implementation of VIS-2.

5.5.5 Laws, Ordinances, Regulations, and Standards

This section lists and discusses the visual resources-related LORS that apply to the Project. Table 5.5-3 summarizes the LORS relevant to the Project.

Table 5.5-3 LORS Applicable to Visual Resources

Jurisdiction	LORS	Applicability	Opt-In Application Reference	Project Conformity
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 the Project and to reduce environmental impacts to the extent feasible.	Throughout this Opt-In Application	The Project would comply with CEQA, as required by the California Energy Commission's Opt-In Application process.
Local	Fresno County Code of Ordinances, Chapter 15, Article 20, Section 15-2015	Places restrictions on outdoor lighting to reduce light pollution and glare.	Impact VIS-2	The Project would minimize impacts related to new sources of light and glare through adherence with County Code lighting standards and restrictions.
Local	Fresno County General Plan			
	Policy OS-K.1	Encourages the preservation of scenic views and vistas.	Impact VIS-1	The Project would minimize impacts to scenic views and vistas through implementation of MM VIS-1 and VIS-2.
	Policy OS-K.4	Requires development to minimize impacts to scenic site qualities.	Impact VIS-1	The Project would minimize impacts to scenic views and vistas through implementation of MM VIS-1 and VIS-2.
	Policy OS-L.1, Figure OS-2	Identifies I-5 as a designated scenic highway within Fresno County.	Impact VIS-1	Project components would be visible from I-5 and the proposed gen-tie line would cross over and parallel I-5. The Project would minimize impacts to views from I-5 through implementation of MM VIS-1 and VIS-2.
	Policy OS-L.3	Requires overhead utilities visible from I-5 to be routed and implemented to minimize impacts to scenic resources.	Impact VIS-1	Overhead Project components would be routed to follow existing overhead utility ROW which are located parallel, and proximate to, I-5 and thus would not impact scenic resources visible from I-5.

Source: Fresno County Code of Ordinances, Fresno County 2000, Fresno County 2023

5.5.1.1 Federal LORS

There are no federal LORS that apply to visual resources.

5.5.1.2 State LORS

California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires state and local government agencies to inform decision makers and the public about the potential environmental impacts of the Project and to reduce environmental impacts to the extent feasible. Appendix G of the CEQA Guidelines includes criteria for evaluating potential impacts related to aesthetics.

5.5.1.3 Local LORS

Fresno County Code of Ordinances

The Fresno County Code of Ordinances (County Code) includes guidelines and standards for development within the County, including but not limited to:

- **Outdoor Lighting and Illumination – Chapter 15, Article 20, Section 15-2015.** Prescribes development and site regulations related to outdoor lighting fixtures and control and illumination of outdoor artificial light to minimize light pollution and glare.

Fresno County General Plan

The Open Space and Conservation Element of the Fresno County General Plan evaluates the scenic resources of Fresno County and provides policies intended to protect and ensure development enhances those resources through various measures including identification, development review, acquisition, and other methods. The policies in the Fresno County General Plan concerning scenic resources and scenic highways relevant to the Project are as follows:

- **Policy OS-K.1:** The County shall encourage the preservation of outstanding scenic views, panoramas, and vistas wherever possible. Methods to achieve this may include encouraging private property owners to enter into open space easements for designated scenic areas.
- **Policy OS-K.4:** The County should require development adjacent to scenic areas, vistas, and roadways to incorporate natural features of the site and be developed to minimize impacts to the scenic qualities of the site.
- **Policy OS-L.1:** The County designates a system of scenic roadways that includes landscaped drives, scenic drives, and scenic highways. Definitions and designated roadways are shown in the text box below. Figure OS-2 shows the locations of the designated roadways[1].
- **Policy OS-L.3:** The County shall manage the use of land adjacent to scenic drives and scenic highways based on the following principles:
  b.) Proposed high voltage overhead transmission lines, transmission line towers, and cell towers shall be routed and placed to minimize detrimental effects on scenic amenities visible from the right-of-way.

[1] Interstate 5 (I-5) is included in Figure OS-2 as a Fresno County Designated Scenic Highway.

5.5.6 Agencies and Agency Contact

There are no agencies with jurisdiction to issue permits or approvals, or to enforce identified LORS related to visual resources.

5.5.7 Permits and Permit Schedule

No permits related to visual resources would be required for the Project.

5.5.8 References

California Department of Transportation (Caltrans). 2018. California State Scenic Highways Map. Available at: https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa. Accessed August 2023.

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