Appendix B

Viewshed Technical Memorandum

Kimley»Horn

TECHNICAL MEMORANDUM

To: Desert Breeze Solar, LLC

From: Ryan Callahan and Jessie Fan, Kimley-Horn and Associates, Inc.

Date: December 28, 2022

Subject: Desert Breeze Solar Project – Viewshed Technical Memorandum

Purpose

The purpose of this memorandum is to evaluate viewshed impacts as a result of the Desert Breeze Solar Project (Project), located in unincorporated Hinkley, California.

Project Location

The Project is in an unincorporated area of the County of San Bernardino (County) in the community of Hinkley, CA, approximately 7 miles northwest of the intersection of Harper Lake Road and Mojave-Barstow Highway 58. The Project would be developed on an approximately 923-acre Project Site, comprised of an 813-acre solar array area and a 110-acre Shared Facilities Area (SFA). The Project Site consists of area within two parcels: County Assessor's Parcel Numbers (APN) 0490-223-33, which is currently vacant; and APN 0490-101-56, which contains existing shared infrastructure and support facilities for the adjacent solar facilities. The solar array development portion of the Project Site is bordered on the south by existing and approved solar facilities; Harper Lake Road to the east; Hoffman Road to the west; and Maltice Drive to the north. The SFA is bordered by Hoffman Road to the south and the existing and approved solar facilities to the north, east, and west.

Project Description

The Project is a utility scale solar photovoltaic (PV) electricity generation and energy storage facility that would produce up to 130 megawatts (MW) of solar power and include up to 2 gigawatt hours (GWh) of energy storage capacity in a battery energy storage system (BESS) within an approximately 923-acre Project Site. The Project is located within the County and is sited adjacent to similar existing and approved solar facilities and infrastructure.

The Project would share existing support facilities with the Lockhart Solar PV (Lockhart I; PROJ-2019-00125) and Lockhart Solar PV II (Lockhart II; PROJ-2021-00029) Facilities (i.e., operations and maintenance [O&M] building, warehouse, employee building, water and septic systems, switchyard and electrical transmission infrastructure), and a new collector substation (approved and currently under construction as part of Lockhart I) within an approximately 110-acre SFA. The Project would utilize an existing 13.8-mile transmission line which runs from the SFA to the point of interconnection

at the Southern California Edison (SCE)-owned Kramer Junction substation. Additionally, the Project proposes improvement of a portion of Harper Lake Road, which is an existing dirt road.

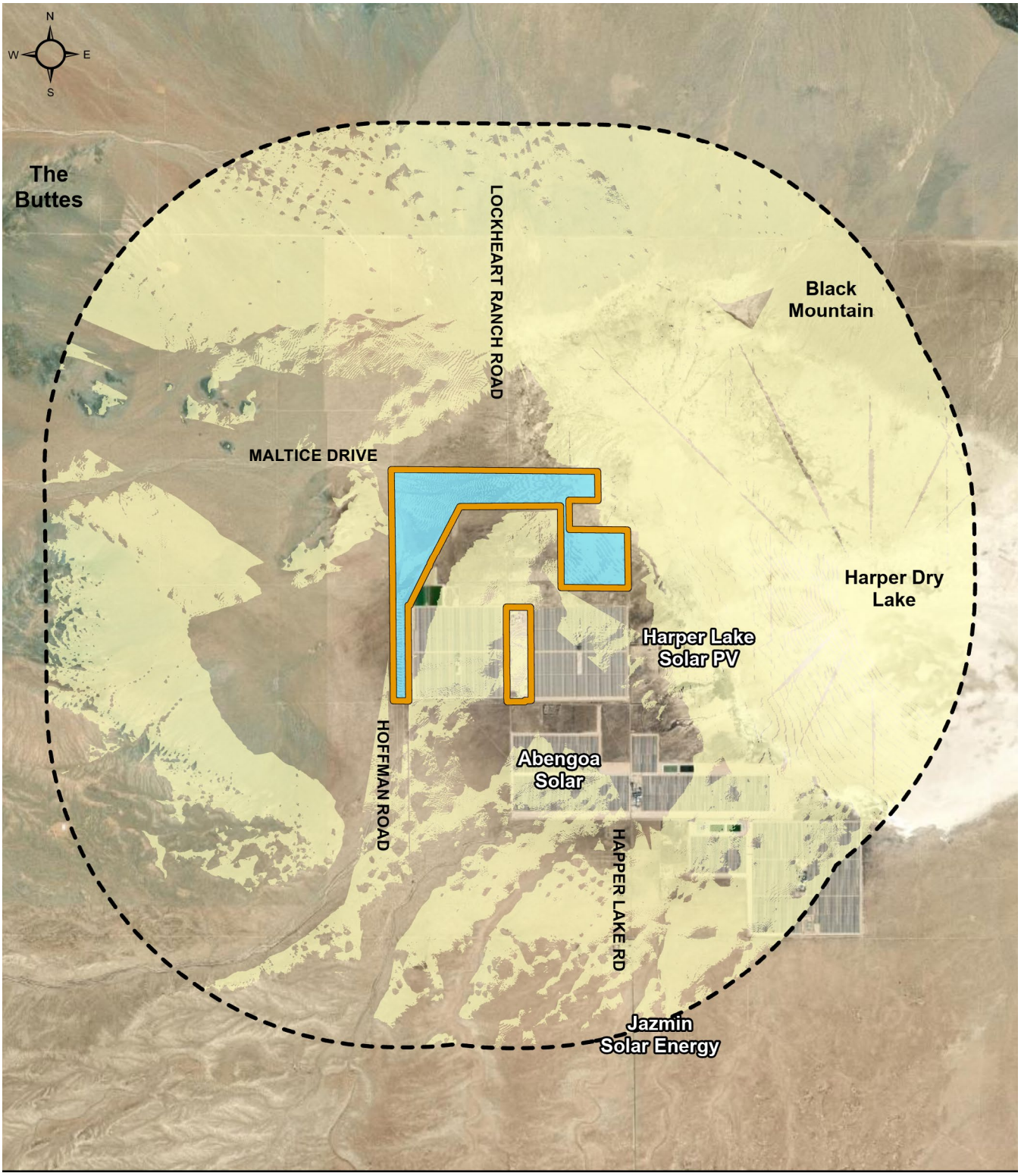
Depending on the type of modules used, the total height of the solar panel system measured from the ground surface would be approximately 7 to 12 feet. The tallest proposed structures on the Project Site would be the BESS containers within the SFA, which would be up to approximately 35 feet in height (including the height needed for heating, ventilating, and air conditioning). The batteries modules would be installed in racks and housed within purpose-built outdoor enclosures.

Existing Site Conditions

The Project Site is bordered on the south by Lockhart II (approved by the County on June 28, 2022), and Lockhart I (approved by the County on January 7, 2020). The Lockhart I project area is comprised of the former Solar Energy Generating System (SEGS) VIII Solar Thermal Plant site [now decommissioned] and the existing SEGS IX Solar Thermal Plant. Existing SEGS facilities within the SFA include an O&M building, warehouse, employee building, switchyard and other supporting and transmission facilities. The tallest existing structure associated with the existing SEGS IX Solar Thermal Power Plant is an emission stack/cooling tower at a height of approximately 82 feet. Refer also to **Exhibit 1**, *Viewshed Map*, and **Exhibit 2**, *Surrounding Land Uses*.

The remainder of the Project Site is bordered by vacant land. The Abengoa Mojave Solar Project (MSP) is located further to the south across Hoffman Road, the Black Mountain Wilderness Area 9 miles to the northeast, and Harper Dry Lake to the east. The SEGS IX and MSP facilities are existing utility-scale solar thermal power facilities that include solar arrays and other appurtenant infrastructure for solar thermal power generation. The SEGS IX facility has been operational since the early 1990s and MSP has been operational since 2014. The Project Site is also located in proximity to existing high-voltage transmission lines that serve the existing facilities, including the existing 13.8-mile transmission line that extends from the SFA to the Southern California Edison (SCE)-owned Kramer Junction substation to the southwest. The general vicinity (within 4 miles of the Project Site) includes other solar facilities that have been approved or are undergoing environmental review with the County (such as the Harper Lake Solar PV Project and the Jazmin Solar Energy Project).

The Project Site is relatively flat with surface elevations varying between approximately 2,100 feet above mean sea level (amsl) to 2,030 feet amsl sloping from west to east toward Harper Dry Lake. The central portion of the Project Site has been vacant since 1953; however, the southeastern portion of the Project Site has been subject to surface disturbance associated with past agricultural uses. Historical topographical photos from 1986 indicated that a landing strip and a dike were depicted on the southeastern area of the Project Site. Aerial photographs from 1994 show that the Project Site was vacant. The SFA consists of previously disturbed land and existing support facilities for the adjacent existing and approved solar facilities. An existing 6-foot-tall chain link fence borders the shared site boundary between the Project Site and the adjacent approved solar facilities. Refer to **Exhibits 3A** and **3B**, *On-Site Photographs*.



LEGEND

- 3-mile Radius From Project Site
- Project Site
- Solar Array Field
- Potential Areas of Site Visibility

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EXHIBIT 1: Viewshed Map

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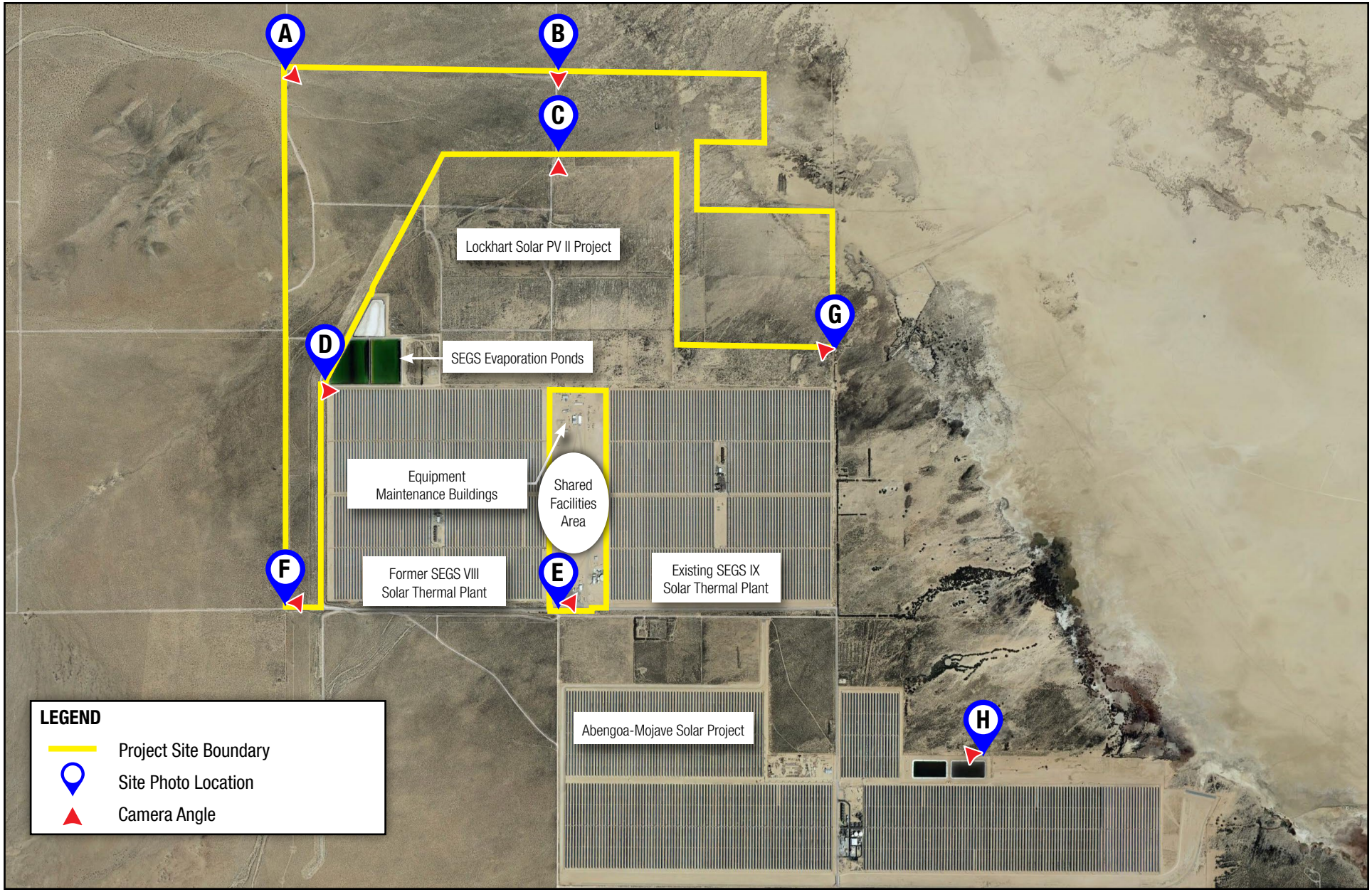

SOURCE: Google Earth, 2022

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EXHIBIT 2: Surrounding Land Uses

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Site Photo A – View from northwest corner of the Project Site looking southeast (existing SEGS IX facility is visible in the background).

Site Photo B – View from mid-northern boundary of the Project Site looking south (existing SEGS IX facility is visible in the background).

Site Photo C – View from mid-southern boundary of the Project Site looking north.

Site Photo D – View looking towards brush and existing chain-link fence between Project Site and Water Evaporation Pond.

Site Photo E – View looking northeast from southwestern corner of Shared Facilities Area.

Site Photo F – View looking northeast toward Project Site at southwest corner of Project Site.

Site Photo G – View looking northwest from southeast corner of Project Site.

Site Photo H – View from Harper Lake Wildlife Viewing Area looking slightly northwest toward Project Site (existing SEGS IX facility is visible in the background).

Viewshed Methodology

The California Environmental Quality Act (CEQA) Guidelines state that a project has the potential to result in a significant impact if it would (except as provided in Public Resources Code [PRC] Section 21099) have a substantial adverse effect on a scenic vista; substantially damage scenic resources; or 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 points. In addition, CEQA Guidelines Section 15064(b) states "…the significance of an activity may vary with the setting…an activity which may not be significant in an urban area may be significant in a rural area." Thus, the degree of visual change in public views experienced by a viewer as a result of development occurring in a rural setting may have a different visual effect as compared to the same project located in an urbanized environment.

This evaluation is intended to identify where views of the Project from public vantage points (i.e., scenic highways, public trails, etc.) may potentially be afforded. Consideration for viewer exposure (i.e., length of time views may be experienced) and viewer sensitivity (i.e., local resident versus area visitor, familiarity with the existing setting, etc.) was also given in assessing viewer response (how a viewer may respond to a change in the visual setting) following Project implementation.

The viewshed is the geographical area that is visible from a particular location. This includes all surrounding points that are in line-of-sight with that location and excludes points that are beyond the horizon or obstructed by terrain and other features (e.g., buildings, topography, trees). A viewshed map (in graphic form) portrays the visible and non-visible areas of a project feature or element within a given radius. A viewshed analysis is intended to aid consideration of potential areas from which a proposed project could be visible.

Landform, land cover, and atmospheric conditions are generally considered to physically constrain views within the viewshed. Landform is the most basic constraint and is most likely not to be modified, or modified only at a localized level, during construction of a project. Landform provides perspective for a viewer, while also having the potential to obscure views. Land cover consisting of vegetation and/or structures can also represent potential obstacles, thereby obscuring views. Atmospheric conditions such as smoke, dust, fog, or precipitation can further influence visibility.

Additionally, the extent to which a project is visible is further constrained by the physiological limits of human sight. Location, proximity, and light are key factors in influencing the physiological limits of what a viewer is able to see.[1]

[1] United States Department of Transportation, Guidelines for the Visual Impact Assessment of Highway Projects, January 2015.

Views are also influenced by the distance between the viewer and the resource being viewed. Typically, the closer a resource is to the viewer, the more visually dominant the resource is. Generally, distance zones (or the position of the viewer in relationship to the landscape) are defined as follows:[2]

- Foreground: 0.25-0.5 mile from the viewer
- Middleground: Extends from the foreground zone to 3-5 miles from the viewer
- Background: Extends from the middleground zone to the limit of visibility

Within the foreground, a viewer is generally able to see greater details that are immediately available, allowing the viewer to understand relative scale based on the relation of the viewer's size to surrounding landscape elements.

Within the middleground, adequate distance is provided to allow a viewer to relate individual visual elements to the surrounding landscape in order to gain an understanding of context in which the foreground lies. The middleground provides the visual context where discernible project elements would be most visible within the landscape and interpreted by viewers. However, visual features within the foreground and middleground can interfere with, or even obscure, background views.

Within the background, the perceived mass and visibility of Project elements are reduced by distance and are less dominant within the visual landscape as details are lost. Within the background, Project elements may visually blend in scale and color with other elements within the existing landscape so that views are dominated by broad forms, large-scale patterns, and muted colors of the surrounding landscape.

Viewshed Analysis

A viewshed analysis has been performed for Project elements including the solar PV panels, BESS, and associated infrastructure. The viewshed analysis considered the height of the various structures proposed as part of the Project and the potential visibility of such components within the visual landscape. While the majority of the Project Site (the 813-acre solar array development area) would include solar panels (approximately 7 to 12 feet in height), the tallest proposed structures are the BESS enclosures (approximately 35 feet in height) to be located within the SFA. Therefore, the BESS enclosures were considered as part of the viewshed analysis to evaluate a “worst-case” scenario (i.e., structural element of greatest visibility to off-site viewers).

Generally, viewers cannot ascertain details at distances greater than three miles[3]; therefore, the viewshed has been created for a three-mile radius from the Project Site boundaries using Geographic

[2] United States Department of Transportation, Guidelines for the Visual Impact Assessment of Highway Projects.

[3] Healthline, How Far Can We See and Why?, https://www.healthline.com/health/how-far-can-the-human-eye-see.

Information System technology, elevation data from Project engineering plans, and 2006 Digital Surface Model (DSM) data.

As depicted in **Exhibit 1**, *Viewshed Map*, Project elements may be intermittently visible as one travels along the valley floor in proximity to the Project Site (i.e., Harper Lake Road, Hoffman Road, Maltice Drive). Potential visibility of Project elements within the viewshed, particularly when viewed from areas to the north and south of the Project Site, would be reduced as distance increases.

The following is a description of existing public views in the Project area and an assessment of potential viewer response to a change in existing public views following Project implementation.

Local Roadways. No designated scenic views/vistas are present along local roadways in the vicinity of the Project Site (i.e., Harper Lake Road, Hoffman Road, and Maltice Drive), as identified in the Countywide Plan. Refer also to State Scenic Highways, below.

As stated above, the central portion of the Project Site has been vacant since 1953; however, the western portion of the Project Site has been subject to surface disturbance associated with past agricultural uses. The SFA consists of previously disturbed land and existing support facilities for the adjacent existing and approved solar facilities; refer to **Exhibit 2**, *Surrounding Land Uses,* and **Exhibits 3A** and **3B**, *On-Site Photographs*.

No resources having scenic value are present on the Project Site. Following Project implementation, travelers along local public roadways may experience intermittent views of Project elements, depending on viewer location along the roadway, proximity to the Project Site, and intervening topography or other development. Although these public roads are predominately used by local residents who may be more sensitive to a change in visual conditions on the Project Site, such viewers would be limited in number and views experienced would be brief and intermittent.

Additionally, as the Project Site is bordered to the south by the existing SEGS IX solar facility as well as MSP further to the south across Hoffman Road, installation of Project elements would not introduce new physical elements into the visual landscape that would substantially differ from existing development already present in the vicinity. In addition, the Lockhart I and II facilities, once fully constructed, would be in between views from areas to the south and the Project. Visibility of the Project from these local roadways along the valley floor would be further reduced as views would occur at a similar elevation as the Project Site (i.e., flat viewing plane).

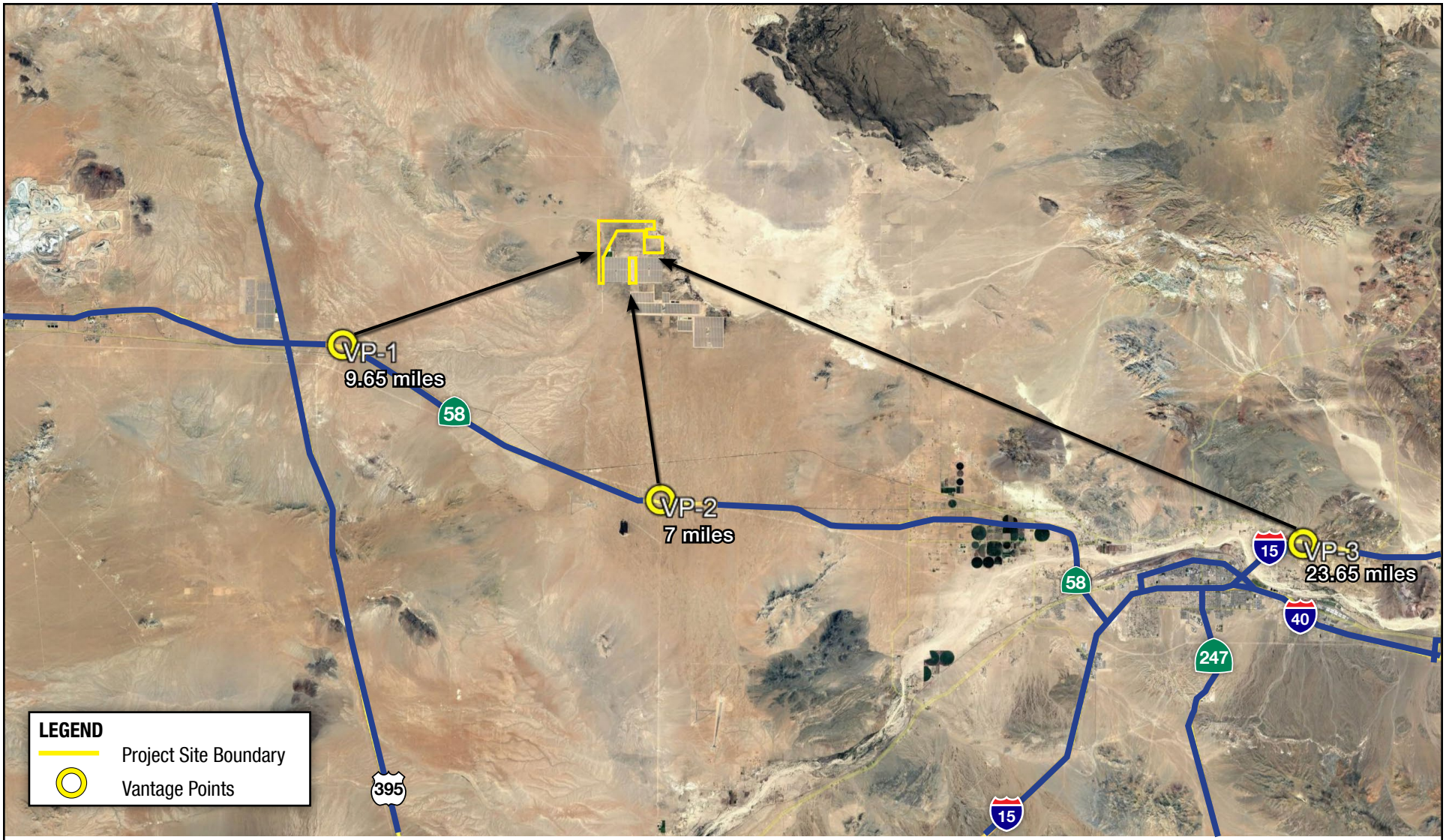
As previously stated, the tallest existing structure associated with the SEGS IX solar facility is the emission stack/cooling tower having a height of approximately 82 feet. It should be noted that, as the tallest Project structure would be approximately 35 feet (BESS enclosures), and the majority of the Project Site would include solar panels approximately 7 to 12 feet in height, structural elements on the Project Site would be substantially shorter than existing solar-related components on adjacent lands. Therefore, the Project would be less visible than existing features within the visual landscape

when viewed from the SR-58 or other area roadways discussed below. In addition, structure heights of the County-approved Lockhart I and II facilities are similar to those proposed as part of the Project.

For the reasons stated above, viewer response to a change in the visual environment due to Project implementation is considered to be low. The Project would not substantially alter existing public views experienced from local roadways or adversely affect designated scenic views or vistas.

State Scenic Highways. State scenic highways are highways that are either officially designated by the California Department of Transportation (Caltrans) or are eligible for designation. Designation of a highway as "scenic" is dependent upon the visibility of the natural landscape to travelers, the aesthetic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view. Refer to **Exhibit 4***, Scenic Corridors,* which identifies eligible and designated State scenic highways of the State highways system.[4] Refer also to **Exhibit 5**, *Photographs from Vantage Points*, which shows representative views from area scenic roadways.

[4] It should be noted that the portion of the U.S. Route 395 that is visible in Exhibit 4 is not designated or currently eligible as a State Scenic Highway.



Photographs taken from Vantage Points are reflected in Exhibit 5. Interstate 15 and State Routes 58 and 247 are eligible State Scenic Highways, and Interstate 40 is an Official Federal Byway.

Note: Distances are approximate.

SOURCE: Google Earth, 2022

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EXHIBIT 4: Scenic Corridors

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Vantage Point 1 – View looking northeast from SR 58 towards Project Site.

Vantage Point 2 – View looking northwest from SR 58/Harper Lake Road towards Project Site.

Vantage Point 3 – View looking northwest from Interstate 15 just northeast of Soapmine Road towards the Project Site.

EXHIBIT 5: Photographs from Vantage Points

- State Route 58 (SR-58) Motorists. According to the Caltrans *California State Scenic Highway System Map*, SR-58 is eligible for listing.[5] As shown on **Exhibit 4,** at the closest point to the Project Site, views from SR-58 would be distanced approximately 7 miles to the southwest of the Project Site. Due to such viewing distances, Project elements would not be readily visible within the visual landscape; refer to Vantage Points 1 and 2 in **Exhibit 5**. Although brief and intermittent views to the Project Site may be afforded at various points as one travels along the roadway, the addition of Project elements within the visual landscape would not substantially change existing public views from SR-58. Direct views from SR-58 to the Project Site would be largely obscured by the existing SEGS and MSP facilities. Visibility of the Project would be further influenced by intervening topography and elevational differences (i.e., flat viewing plane versus elevated vantage points along the roadway). Intervening structures associated with the future Lockhart I and II facilities would also obscure views to Project facilities, once fully constructed, from SR-58.

  Additionally, as SR-58 traverses the valley floor in an east/west orientation in the vicinity of the Project Site, views would generally be oriented east/west, rather than north toward the Project Site (i.e., requiring the viewer to consciously turn his/her head northward to experience views to the Project). As such, readily available views toward the Project from SR-58 would not occur.

  Therefore, existing views from SR-58 to the Project Site would not be substantially changed with Project implementation. Viewer response to a change in the visual environment due to Project implementation is considered to be low.

- Route 66 Byway Motorists. According to the Caltrans *California State Scenic Highway System Map*, Route 66, which is southeast of the Project Site, is an official Federal Byway.[6] Motorists traveling along the Route 66 (along Interstate 15 [I-15] and Interstate 40 [I-40]) would be more than 15 miles away from the nearest Project Site. Due to distance and the intervening topography between Route 66 and the Project Site, the Project would not be discernable within the visual landscape from Route 66**.** Additionally, views of the Project from Route 66 would be obstructed by existing facilities within the MSP, SEGS, and future Lockhart I and II facilities, once fully constructed.

  Therefore, existing views from Route 66 to the Project Site would not be substantially changed with Project implementation. Viewer response to a change in the visual environment due to Project implementation is considered to be low.

[5] California Department of Transportation, California State Scenic Highway System Map, August 2019, https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways.

[6] California Department of Transportation, California State Scenic Highway System Map.

- Interstate 15 (I-15) Motorists. According to the Caltrans *California State Scenic Highway System Map*, I-15 (eastward from its intersection with SR-58) is eligible for listing.[7] I-15 is situated greater than 15 miles to the south/southeast of the Project Site at its closest point. Due to distance, intervening topography, and other existing and future large-scale solar facilities in between I-15 and the Project Site, it is not anticipated that travelers along I-15 would experience readily available views to the Project Site; refer to Vantage Point 3 in **Exhibit 5**, which provides a representative view of the Project Site and vicinity from I-15. Although the Project Site itself may be discernible within the visual landscape from certain vantage points along I-15, the introduction of Project elements would not substantially degrade or alter existing public views. Additionally, views of the Project from I-15 would be obstructed by the existing MSP, SEGS, and future Lockhart I and II facilities, once fully constructed. Viewer response to a change in the visual environment due to Project implementation is considered to be low.

- State Route 247 (SR-247) Motorists. According to the Caltrans *California State Scenic Highway System Map*, SR-247 is eligible for listing.[8] SR-247 is located more than 20 miles to the southeast of the Project Site at its southeast corner. Similar to public views experienced from I-15, as described above, motorists traveling along SR-247 are not anticipated to readily view Project elements within the visual landscape, due to the overall distance from the Project Site and relative height and scale of the Project components. Potential views to the Project Site from SR-247 would be further influenced and/or reduced by intervening topography and other existing development.

  Therefore, existing public views from SR-247 to the Project Site would not be substantially changed with Project implementation. Viewer response to a change in the visual environment due to Project implementation is considered to be low.

Recreational/Public Lands. No existing views of the Project Site from public recreational areas, including public trails, are afforded. Based on the Policy Map NR-2, Parks and Open Space Resources, of the Countywide Plan, the Project Site is not located within proximity to any regional or State parks, national parks or preserves, national forests, or off-highway vehicle areas. Additionally, the Project is not situated near a non-motorized transportation plan area (e.g., Rim of the World, Big Bear Valley, or Morongo Basin). The nearest public non-motorized pathway is situated greater than 11 miles southwest, along SR-58 near the town of Hinkley.

However, according to County of San Bernardino Countywide Plan Policy Map N -2, Parks & Open Space Resources, the Project Site is surrounded by lands designated as Bureau of Land Management (BLM) Areas of Critical Environmental Concern. Additionally, according to Policy Map N-2, Parks & Open Space Resources, lands designated as BLM California Desert National Conservation Land are

[7] California Department of Transportation, California State Scenic Highway System Map.
[8] California Department of Transportation, California State Scenic Highway System Map.

located approximately 4 miles northeast of the Project Site. Lands designated as BLM Wilderness Land are located further to the northeast. Limited views to the Project Site may be afforded from intermittent locations within these lands; however, as previously described, due to distance, proposed height of the Project elements, intervening topography, and adjacency to similarly developed solar facilities to the south, the introduction of the Project into the existing visual landscape is not anticipated to adversely affect or change existing views from these areas.

Based on the above-described conditions, viewer response to a change in the visual environment as experienced from any area recreational uses, as a result of Project implementation, is considered to be low.

Conclusion

As discussed above, there are no designated vistas or scenic views in the vicinity of the Project Site per the Countywide Plan; therefore, there would be no existing public views that would be adversely affected or otherwise substantially altered as the result of Project implementation. Additionally, existing public views from dedicated parks or open space resources in the vicinity to the Project Site would not be adversely affected by the proposed development.

Potential views to the Project Site from the nearest designated scenic highway and/or eligible scenic highway would occur at a distance of approximately 7 miles or greater. Due to such distances, combined with intervening topography and/or development, as well as elevational differences, views to Project elements would not be greatly diminished and/or obscured from any such roadways identified as having scenic value. Furthermore, the tallest element of the Project would be the BESS containers, which would be up to approximately 35 feet in height, as compared to the 82-foot emission stack/cooling tower associated with the existing SEGS IX solar facility. Additionally, local roadways (i.e., Harper Lake Road, Maltice Drive, and Hoffman Road) in proximity to the Project Site support low traffic volumes due to their rural nature, and therefore, do not offer a substantial viewer population that would experience a change in the visual setting with Project implementation.

As described under the *Viewshed Analysis* heading above, although a change in public views experienced from local roads would occur following Project implementation, such views would be brief and intermittent (as motorists travel by) and/or obscured altogether by intervening development. As a result, viewer response to the change in the visual setting is anticipated to be negligible to low due to the degraded visual nature of the Project Site and immediate surroundings, and given a lack of any area resources having scenic value. As previously noted, intervening Lockhart I and Lockhart II facility structures would further obscure views to Project facilities from SR-58. Additionally, local roadways (i.e., Harper Lake Road, Maltice Drive, and Hoffman Road) in proximity to the Project Site support low traffic volumes due to their rural nature, and therefore, do not offer a substantial viewer population that would experience a change in the visual setting with Project implementation. Therefore, existing public views to the Project Site from designated or eligible scenic

roadways, or from local roadways, would not be adversely affected or otherwise substantially degraded as the result of Project implementation.

Based on the discussion provided herein, preparation of a visual resources impact analysis, inclusive of photo-realistic “before and after” simulations are not warranted. No further evaluation of the Project’s potential effects on visual resources is required.