

RE Cinco Solar Facility Project

DRAFT VISUAL RESOURCES TECHNICAL REPORT

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GLOSSARY OF TERMS AND ACRONYMS

AC	Alternating Current
BLM	Bureau of Land Management
FHWA	Federal Highway Administration
FT	Foot
GIS	Geographic Information System
KOP	Key Observation Point
kV	Kilovolt
MI	Mile
MW	Megawatt
NEPA	National Environmental Protection Act
NHS	National Highway System
OHV	Off-Highway Vehicle
Proposed Action	RE Cinco Solar Facility Project
Service	U.S. Fish and Wildlife Service
SQRU	Scenic Quality Rating Unit
VRI	Visual Resource Inventory
VRM	Visual Resource Management

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EXECUTIVE SUMMARY

RE Barren Ridge Solar 1, LLC (Applicant), a subsidiary of Recurrent Energy LLC, proposes to construct and operate the RE Cinco Solar Facility, an approximately 60 megawatt (MW) photovoltaic solar electric power generation facility located on approximately 500 acres of private land. A generation intertie line (gen-tie line) connecting the solar facility to the existing Los Angeles Department of Water and Power (LADWP) Barren Ridge Switching Station would also be constructed to deliver power to the electrical grid. Two scenarios are being considered for the gen-tie's construction and operation:

Gen-tie alignment utilizing a mix of federal and private lands. The Applicant's preferred gen-tie line alignment would be constructed primarily on federally-owned land administered by the Bureau of Land Management (BLM) and would require BLM's issuance of a right-of-way (ROW) grant for that use. BLM is analyzing effects associated with issuance of a ROW grant for the gen-tie per NEPA, and will consult with the Service pursuant to Section 7(a)(2) of the ESA for the alternative alignments on federal lands. A separate ESA Section 7 consultation is being conducted for the gen-tie line ROW application because BLM has jurisdiction for approval of the gen-tie line only.

Gen-tie alignment utilizing private lands only. An alternative alignment utilizing only private lands is also being considered. Under this scenario for the gen-tie, the Service would supplement the Section 10(a)(1)(B) ITP to include the gen-tie alignment as well as the private lands solar facility. Issuance of a ROW grant for use of BLM lands would not be required.

The analysis herein uses Interim VRM Classifications developed independently by POWER Engineers, Inc. for the purposes of the Barren Ridge Renewable Transmission Project (2011). The Proposed Action would occur in a Class C scenic landscape with Class III Management Objectives; with moderate to high viewer sensitivity along SR 14, an eligible State Scenic Highway. In viewsheds with existing electrical transmission line structures and ground disturbances, contrasts would be weak to moderate, depending on distance from the observer and number and type of structures. In all cases, implementation occurring in the immediate foreground of the observer would cause greater contrasts and/or impacts to the visual landscape than those appearing at a further distance (Alternative 4).

More generally, it is anticipated that visual resources would be temporarily affected by construction in all cases due to the activities necessary to build the facilities, and would include viewshed disturbances such as photovoltaic solar array, wooden H-frame structures, conductors, cleared ROWs, temporary buildings, fences, and construction-related equipment, debris storage, and ground areas cleared for construction including access roads, transmission line tower work areas.

In summary, the Proposed Action would result in the following visual effects, detailed by alignment Alternative:

Alternative 1 – No visual impacts anticipated.

Alternative 2 – Moderate degree of contrast with moderate level of viewer sensitivity due to placement of taller vertical components beyond the immediate foreground of sensitive viewers along SR 14. Proposed Action would not be visually dominant in the landscape with mitigation

measures incorporated and would be subordinate to co-dominate with surrounding visual background.

Alternative 3 – Impacts as described under Alternative 2, with mitigation incorporated.

Alternative 4 – High degree of contrast high viewer sensitivity due to addition of wooden H-frame transmission structures and gen-tie substation located parallel and across SR 14. The Proposed Action would be visually dominant in the landscape at points along the alignment – particularly at the intersection of SR 14 – and in both immediate foreground and foreground-middleground views would be subordinate to neither the existing transmission structures nor larger visual background.

1.0 INTRODUCTION

1.1 Purpose of the Visual Resources Technical Report

This visual resources report assesses the potential effects of the RE Cinco Solar Facility Project on visual resources in accordance with National Environmental Protection Act (NEPA) utilizing the Bureau of Land Management (BLM) Visual Resource Management (VRM) system. This study also includes proposed measures to avoid, minimize, or mitigate adverse visual impacts associated with construction, operation, and decommissioning of the Proposed Action.

1.2 Proposed Action

RE Barren Ridge Solar 1, LLC (Applicant), a subsidiary of Recurrent Energy LLC, proposes to construct and operate the RE Cinco Solar Facility Project on privately-owned land. The project layout is comprised of two principal components: 1) the solar facility site, which is located solely on private lands in Section 25, Township 31 South, Range 36 East (Mount Diablo Base Meridian); and 2) a linear gen-tie alignment that would travel from the solar facility site to the LADWP Barren Ridge Switching Station.

The Applicant-preferred gen-tie alignment would pass through federal lands managed by the BLM, who has begun preparing its own Visual Resource Technical Report (VRTR) for those portions of the Applicant's gen-tie that would utilize federal lands. The BLM's VRTR assesses several alternative alignments for the gen-tie, including an alignment that would not utilize any federal lands but would instead utilize private lands only. The Applicant's preferred alignment would originate at the northwest corner of the solar facility site and extend north and east across federal and private lands before connecting to the existing LADWP Barren Ridge Switching Station. Since the federal lands gen-tie alternative alignments are under the jurisdiction of a separate agency (the BLM), these gen-tie alignment alternatives have not been analyzed by this document.

Analysis was conducted for Alternatives 2 (No USFWS Action; Implementation) and 3 (USFWS Action; Implementation) as both would result in changes to existing visual resources. Analysis considered the potential visual effects of project components including solar panels and array, inverters, maintenance/access roads, operations and maintenance (O&M) facility, and proposed solar facility switchyard.

Alternative 1 (No Project Alternative)

Under the No Project Alternative, the Service would not approve the Applicant's HCP and would not issue a Section 10(a)(1)(B) ITP. The proposed solar facility would not be constructed. The private lands upon which the solar facility would be located would remain in their current state, and would be available for other uses in accordance with the Kern County General Plan and other applicable regulations.

Alternative 1 would not implement the proposed solar facility; would not alter existing visual conditions or result in significant visual effects; and is not evaluated further.

Alternative 2 (No Action Alternative)

The No Action Alternative is defined as the Service taking no action and the Service not approving the Applicant's HCP and not issuing a Section 10(a)(1)(B) ITP for the proposed solar facility project. The lack of an ITP would not necessarily preclude development, as the Applicant could choose to construct and operate the solar facility without Section 10(a)(1)(B) coverage.

Alternative 2 would implement the proposed solar facility; would alter existing visual conditions and could result in potentially significant visual effects; and has been evaluated for potential impacts in **Section 5.0**.

Alternative 3 (Proposed Action)

Under the Proposed Action, the solar facility would be constructed and would be sited on approximately 500 acres of privately owned land. This alternative assumes that a ROW grant would be issued by the BLM for a connecting gen-tie across federal lands from the solar site to the Barren Ridge Switching Station approximately 2 miles to the north. As such, the federal lands gen-tie alignment would not be a part of the Service's Section 10(a)(1)(b) ITP action.

Alternative 3 would implement the proposed solar facility; would alter existing visual conditions and could result in potentially significant visual effects; and has been evaluated for potential impacts in **Section 5.0**. Preliminary engineering design and site layout are depicted in **Figure 1**.

Alternative 4 (Proposed Action – Private Alignment)

Under this alternative, the solar facility would be constructed in an identical manner as that described above under Alternative 3 and include a Gen-Tie to the LADWP Barren Ridge Switching Station via alignment across private land. The Service would approve the Applicant's HCP and would issue an ITP for the project. In addition, the approved HCP and ITP would also provide ITP coverage for the construction and operation of a gen-tie transmission line to be constructed solely on private lands. The HCP would be identical to that described above under Alternative 3 for the solar facility, but would also include avoidance and minimization measures specific to the gen-tie. The gen-tie would provide a means by which energy generated at the solar site could be conveyed to the LADWP Barren Ridge Switching Station to the north of the site, and then conveyance to the larger electric grid. This alternative presupposes that an alternative gen-tie utilizing adjacent BLM lands would not be available.

Alternative 4 would implement the proposed solar facility; would alter existing visual conditions and could result in potentially significant visual effects; and has been evaluated for potential impacts in **Section 5.0**.

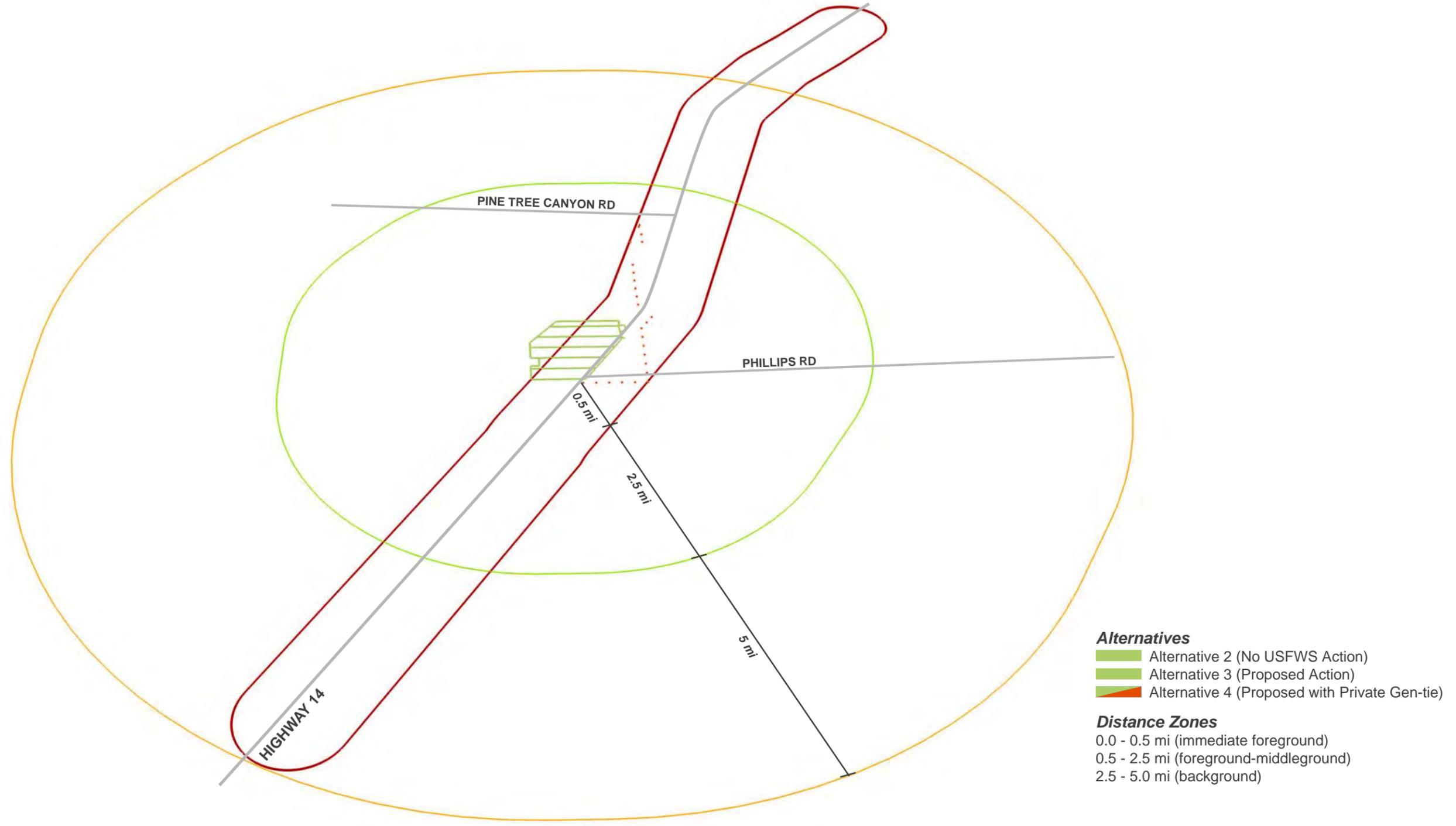


Figure 1
Proposed Action - Facilities Design Map

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2.0 REGULATORY FRAMEWORK

2.1 Federal Regulations

National Environmental Policy Act (NEPA)

The NEPA of 1969, as amended (P.L. 91-190), 42 USC 4321 and 4331-4335) states purposes are “To declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation; and to establish a Council on Environmental Quality” (USC 1970). The following sections of the NEPA relate to the visual landscape and to aesthetics:

(Section 101-b) “In order to carry out the policy set forth in this Act, it is the continuing responsibility of the Federal Government to use all practicable means, consistent with other essential considerations of national policy, to improve and coordinate Federal plans, functions, programs, and resources to the end that the Nation may—

(2) “assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings;”

(Section 102-2) “all agencies of the Federal government shall...

(A) utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision making which may have an impact on man’s environment;”

(B) include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the visual landscape, a detailed statement by the responsible official on—

(i) the environmental impact of the proposed action,

(ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,”

Federal Land Policy and Management Act, as amended

The FLPMA of 1976 (90 Stat. 2743; 43 USC 1601, et seq.) established the BLM as the jurisdictional agency for expanses of land in the West to be managed as multiuse lands. The following sections of the FLPMA relate to the management of visual resources on federal lands:

§ 102(a): “The public lands [shall] be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values.”

§ 201(a): “The Secretary shall prepare and maintain on a continuing basis an inventory of all public lands and their resources and other values (including...scenic values).”

§ 202(c)(1-9): "...in developing land use plans, the BLM shall use...the inventory of the public lands; consider present and potential uses of the public lands, consider the scarcity of the values involved and the availability of alternative means and sites for realizing those values; weigh long-term benefits to the public against short term benefits."

§ 505(a): "Each right-of-way shall contain terms and conditions which will ... (ii) minimize damage to the scenic and esthetic values" (BLM 2001).

National Historic Preservation Act (NHPA)

The NHPA includes language protecting the visual integrity of sites listed or eligible for the National Register of Historic Places: "Examples of adverse effects...include...introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features..." (36 CFR Part 800.5). Impacts to visual resources protected by the NHPA are discussed in the Project EA, Cultural and Historic Resources.

Bureau of Land Management

The BLM manages land under its jurisdiction according to the goals and policies outlined in the RMPs. Visual Resource Management (VRM) classifications are developed by BLM, based on landscape character, scenic quality, sensitivity levels, distance zones, and management direction as outlined in BLM Manual H-8410 (BLM 1986). Each of four VRM classes has an objective that prescribes the amount of change allowed in the characteristic landscape based on perception by the public: Class I-no change; Class II-minor change; Class III-moderate change; and Class IV-major change (BLM 1986). Compliance with VRM classes is determined by comparison of the objective of the applicable class with the effects of the Proposed Action.

2.2 State Regulations

California Desert Conservation Area Plan, as amended

The Ridgecrest Field Office is part of the California Desert District, which is included in the California Desert Conservation Area (CDCA). The California Desert Conservation Area Plan 1980 As Amended (1999) states in Chapter 3, Recreation Element, Visual Resources Management Program page 72 that:

- "Appropriate levels of management, protection, and rehabilitation on all public lands in the CDCA will be identified, commensurate with visual resource management objectives in the multiple-use class guidelines."
- "Proposed activities will be evaluated to determine the extent of change created in any given landscape and to specify appropriate design or mitigation measures using the Bureau's contrast rating process."

West Mojave Plan

The West Mojave Plan Record of Decision (2006) and the Final Environmental Impact Report and Statement for the West Mojave Plan (2005) do not include regulations or standards pertaining to visual resources.

2.3 Kern County Policy

The Project is located within unincorporated Kern County, CA.

Kern County General Plan

Kern County has the discretion to designate local scenic routes if circumstances warrant such designation (Kern County General Plan - Circulation Element, 2007). A Scenic Route is any freeway, highway, road, or other public right-of-way, which traverses an area of exceptional scenic attractiveness. A scenic route must officially set as a Scenic Route by the Kern County Board of Supervisors, or the State of California. A route shall not be selected as scenic until a plan and program for the protection and enhancement of the adjacent roadside view shed is available for implementation.

Implementation Measure D: The County has adopted a Scenic Corridor (SC) Combining District to designate areas which contain unique visual and scenic resources as viewed from a major highway or freeway and for the regulation of off-site advertising signs, where the siting of such signs need to be reviewed on a case-by-case basis to safeguard the scenic qualities of the natural environment and the visual qualities of primary entranceways into the County.

3.0 METHODOLOGY

The study area is composed exclusively of private lands whose development would be under jurisdiction of the Service as NEPA lead agency. To be NEPA-compliant, a VRTR must establish existing visual quality and character, viewer sensitivity/response, and the anticipated visual characteristics of the proposed project. The findings must also be comparatively evaluated to assess the level of change (contrast) between existing and proposed visual resources before ultimately determining the level of significant impact, if any. In the absence of Service-specific visual assessment guidelines, inventory and analysis of visual resources was conducted using the federally-adopted BLM VRM system.

It is important to note, however, that use of the BLM VRM system, including discussion of relative compliance with VRM objectives, does not constitute jurisdictional authority or imply management responsibility by the BLM; and is included to illustrate overall NEPA compliance only.

3.1 Visual Resources Inventory (VRI)

The technical methodology used to establish landscape scenery and sensitive viewers inventory and mapping for the Proposed Action included manual-digitizing from detailed aerials, data download from USGS, GIS spatial analyses, and field verification. Land surface modeling was used to delineate landscape scenery rating units for the landscape scenery inventory. Sensitive viewers' locations, including residences and recreation sites, were manually-digitized in all areas within a 5-mile corridor. Trails and roads were also included in the inventory. Project-specific visibility and distance zone analyses and mapping were conducted in GIS (ArcGIS).

Field investigation was conducted to discover and disclose the relationships of project elements with existing onsite landscape characteristics and locations of sensitive viewers.

Landscape Scenery

Landscape scenery for the Proposed Action portrays the aesthetic value of landscapes on BLM, private, and state lands. Scenic quality is defined by the BLM as the visual appeal of a tract of land (BLM 1986). BLM lands are rated Class A, Class B, and Class C, for highest to lowest scenic quality. View distance, vegetation, topographic slopes, and characteristic landscape (particularly, the presence or absence of existing cultural modifications), play important roles in the assessment of change caused by the Proposed Action on landscape scenery.

Sensitivity Levels

Sensitive viewers' analysis for the Proposed Action encompasses public and private viewer's concern for landscape scenery. Sensitivity levels are defined by the BLM as the measure of public concern for scenic quality. Public lands are assigned high, medium, or low sensitivity levels (BLM 1986).

Distance Zones

Distance zones are defined by the BLM as relative visibility from travel routes or observation points. The three zones are foreground-middleground, background, and seldom seen. All BLM Field Offices' visual resource inventories show all distance zones as foreground-middleground throughout the field office. The foreground-middleground zone includes areas seen from highways, roads, trails, rivers, or other viewing locations that are less than 3 to 5 miles away. Seen areas beyond the foreground-middleground zone, but usually less than 15 miles away, are in the background zone. Areas not seen (hidden from view) in the foreground-middleground or background are designated as seldom-seen (BLM 1986).

Visual Resource Inventory Classes

VRI classes represent the relative value of the visual resources and provide the basis for considering visual values in the resource management planning process. VRI Classes II, III, and IV are determined based on a combination of scenic quality, sensitivity level, and distance-zone overlays. Class II has a higher level of value than Class III, which is moderately valued. Class IV is the least valued. A fourth VRI class, Class I, is assigned to special management areas. This includes Wilderness Areas or Wilderness Study Areas, Wild and Scenic Rivers, National Recreation Areas and other congressionally and administratively designated areas where decisions have been made to preserve a natural landscape.

Where BLM VRI Classes have not been established or are pending acceptance, Interim BLM VRI Classes are required. At present, no BLM Classes have been established for the lands potentially impacted by, or for those surrounding the Proposed Action. However, an Interim VRI Class was previously established and approved for the purposes of the Barren Ridge Renewable Transmission Project (BR RTP); a project with direct adjacency to the Proposed Action. Given this proximity, the Interim VRI Classification approved in the *Barren Ridge Renewable Transmission Project Visual Resources Technical Study* (POWER Engineers, Inc. (POWER), 2011) was obtained from the BLM, independently field-verified, and ultimately adopted by this document as the basis of relative visual value in the study area. The methodology used to establish this Interim VRI Class was excerpted from the BR RTP Visual Resources Technical Study, as approved, and provided below.

The visual resources inventory consisted of the following sequence of study components:

- Identification of agency management objectives (BLM VRM classes and USFS SIOs) and scenic attractiveness classifications if available (ANF Landscape Units and Scenic Attractiveness and BLM Scenic Quality Rating Units);
- A review of the regional physiography, landscape setting, landscape character, and an inventory of existing regional landform, vegetation and water features
- Development of scenic attractiveness/landscape rating units (where not established by agencies);
- Inventory of scenic attractiveness and visual quality within landscape rating units (where not established by agencies);
- Identification and mapping of sensitive viewpoints (USFS Travelways and Use Areas, and BLM Key Observation Points); Sensitivity analysis of identified sensitive viewpoints (where not established by agency, i.e. USFS concern levels); and Visibility and distance zone mapping (USFS Seen Areas and Distance Zones and BLM Mapping Distance Zones).

Source: ANA-032-153 (PER-02) BRRTP (AUGUST 2011) GF 115244, Page 29, POWER Engineers, Inc.

3.2 Agency Management Objectives and Local Planning

VRM classes (**Table 1**) are based on VRIs and management decisions that must take into consideration the value of visual resources. The BLM Manual 1601.03A(4) states, "...in developing land use plans, the BLM shall use ... the inventory of the public lands; consider present and potential uses of the public lands, consider the scarcity of the values involved and the availability of alternative means and sites for realizing those values; weight long-term benefits to the public against short term benefits." For the purposes of this VRTR, VRM Classes and Management Objectives provide thresholds of impact significance and demonstrate NEPA compliance.

Table 1 BLM Visual Resource Management Class Objectives

Class I Objective	The objective of this class is to preserve the existing character of the landscape. Changes to the landscape character should not be evident.
Class II Objective	The objective of this class is to retain the existing character of the landscape. Changes to the landscape character may attract slight attention but should be subordinate to the visual setting.
Class III Objective	The objective of this class is to partially retain the existing character of the landscape. Changes to the landscape character may begin to attract attention but should not dominate the visual setting.
Class IV Objective	The objective of this class is to allow for activities that modify the existing character of the landscape. Changes to the landscape character may attract attention and dominate the visual setting. However, these activities should minimize changes to the landscape where possible.

Source: BLM 1986.

3.3 Contrast Rating Analysis

The visual resource contrast rating is a systematic process used to analyze the potential visual impact of the Proposed Action. The degree to which an activity affects the visual quality of a landscape depends on the visual contrast created between a project and the existing visual environment.

3.4 Study Procedure

Overall analysis considerations are described in **Table 2**. The analysis of visual resources impacts to the visual landscape (land, people, and exposures) is based on the assumptions that

degradation of public views and degradation in the scenic landscape are impact parameters that affect how the public engages or interacts with a visual resource. In addition, non-compliance or inconsistency with management objectives indicates a reasonable cause for Service concern about effects to visual resources.

Solar development often creates visual contrasts out to 5 miles in desert landscapes, depending on sun-lighting conditions and relative viewer positions. Vegetation management, which includes vegetation removal in and around the development site, can exert visual contrasts up to 20 miles in scrub-covered environments. These contrasts remain until decommissioning and replanting or feathering of the removals. Visual contrasts from vegetation management in landscapes without tree cover would remain until grasses and shrubs re-inhabit disturbed areas; typically diminishing within 3 to 5 years.

Table 2 Analysis Considerations for Visual Resources

Topic	Analysis Considerations and Relevant Assumptions
Impacts to people (viewing public)	Measure the extent of and describe the effects of the Proposed Action's structures and disturbed ROWs on people through spatial analysis of BLM's visual resource inventory sensitivity levels and distance zones.
Impacts to the scenic landscape	Measure the extent of and describe the effects of the Proposed Action's structures, cleared development areas, and access roads on the scenic landscape through spatial analysis of BLM's visual resource inventory scenic quality classifications.
Compliance or consistency with Management Objectives	Apply the BLM's visual contrast rating process and forms for views from key observation points to describe the form, line, color, and texture of the characteristic landscape's landform/water, vegetation, and structures and the form, line, color, and texture of the Proposed Action's landform/water, vegetation, and structures. Compare the Proposed Action with the characteristic landscape to determine visual contrasts between proposed conditions and existing conditions. Visual contrast determination includes application of BLM's nine standard criteria for assessing visual contrasts.

The greatest impacts to visual resources would result if any of the following were to occur from construction or operation of the Proposed Action:

- Visually obvious degradation of the foreground character or scenic quality of a visually important landscape.
- Dominant visual changes in the landscape that are seen from highly sensitive viewer locations in the visual landscape such as community enhancement areas (e.g., community gateways, roadside parks, viewpoints and historic markers) or locations with special scenic, historic, recreation, cultural, archaeological and/or natural qualities that have been recognized as such through legislation or some other official declaration.

A threshold of concern for conformance for visual resources would result if the following were to occur from construction or operation of the Proposed Action:

- Impacts to visual resources that are found non-compliant with the adopted BLM VRM classifications.

The ten standard BLM criteria for ways people will be exposed and the attention afforded to visual contrasts were interpreted for applicability for a transmission line and ancillary facilities and reduced to nine criteria. Those remaining nine criteria are as follows: 1) the distance

between observer and Proposed Action; 2) length of time the project is in view (linear or stationary viewers – KOPs); 3) the angle of observation; 4) whether the structures are sun lit (brighter, lighter grays) or in shade (darker, less apparent grays); 5) the presence of guyed, steel lattice tangent structures or larger self-supported, steel lattice angle structures; 6) types of structures in view; 7) relative size or scale; 8) scenic or historic; 9) presence of residential; and 10) reclamation recovery time.

Landscape scenery impacts (**Table 3**) are determined based on the comparison of change caused by the project with the scenic quality inventory of the affected environment. The results are based on consideration of existing scenic quality rating/scores, existing landscape character, presence or absence of existing industrial development (transmission lines, pipelines, similar energy developments, etc.), and the effect of introducing the Proposed Action into the landscape as either a new or additional cultural modification.

Table 3 Landscape Scenery Impacts

Scenic Quality	Proposed Action's Visual Change		
	Strong	Moderate	Weak
Class A	High	High	Moderate
Class B	High	Moderate	Low
Class C	Moderate	Low	Low

Sensitive viewers' impacts were determined based on the comparison of change caused by the Proposed Action with sensitivity/user concern levels, distance zones (0 to 0.5 mile, 0.5 to 2.5 miles, 2.5 to 5 miles, and greater than 5 miles) (**Table 4**), and visibility of the Proposed Action (**Table 5**).

Table 4 Sensitivity Level Impacts

High Viewer Sensitivity Impacts			
Project Visibility	Proposed Action's Visual Change		
	Strong	Moderate	Weak
0 - 0.5 miles	High	Moderate	Moderate
0.5 – 2.5 miles	Moderate	Moderate	Low
2.5 – 5 miles	Moderate	Low	Low
Greater than 5 miles	Low	Low	Low
Medium Viewer Sensitivity Impacts			
0 - 0.5 miles	High	Moderate	Moderate
0.5 – 2.5 miles	Moderate	Low	Low
2.5 – 5 miles	Low	Low	Low
Greater than 5 miles	Low	Low	Low

Table 5 Distance Zones and Project Visibility

Distance Zones and Structure Visibility	
Distances	Distance from Proposed Action
Immediate Foreground	0 - 0.5 miles
Foreground-Middleground	0.5 – 2.5 miles
Background	2.5 – 5 miles

Seldom Seen	Greater than 5 miles
Distance Zones and ROW Visibility	
Immediate Foreground	0 - 0.5 miles
Foreground-Middleground	0.5 – 5 miles
Background	5 – 20 miles
Seldom Seen	Greater than 20 miles

General visual impact levels are outlined below in **Table 6**. Impacts to landscape scenery were determined by measuring the extent of effects of the Proposed Action’s structures, access roads, and disturbed ROWs on the scenic landscape through spatial analysis of BLM’s visual resource inventory and visual quality classifications.

Impacts to viewers were determined by measuring the extent of effects introduced by the Proposed Action including: structures, access roads, and disturbed ROWs on people through spatial analysis of BLM’s visual resource inventory, sensitivity levels and distance zones.

Table 6 Impact Level Criteria

Impact	Criteria
High	The Proposed Action would be dominant in Class A or Class B landscape scenery. The Proposed Action would be visible within 0.5 miles of high sensitivity viewers.
Moderate	The Proposed Action would be co-dominant in Class B landscape scenery. The Proposed Action would be visible within 0.5 to 2.5 miles of medium sensitivity viewers.
Low	The Proposed Action would be dominant or co-dominant in Class C landscape scenery. The Proposed Action would be visible in greater than 2.0 miles of medium sensitivity viewers. The Proposed Action would parallel and be co-dominant with existing transmission line features.

BLM does not have jurisdiction or management responsibilities for lands potentially occupied by the Proposed Action; however, compliance with BLM VRM objectives has been included below as a relative measure of project acceptability. General BLM compliance criteria are summarized below in **Table 7**.

Table 7 BLM Compliance Criteria

VRM	Criteria
No	The Proposed Action would have a high or moderate contrast with VRM Class II objectives. The Proposed Action would have a high contrast in areas with VRM Class III objectives. The Proposed Action would have a moderate contrast in areas with VRM Class III objectives.
Yes	The Proposed Action would have a low contrast in areas with VRM Class III objectives. The Proposed Action would have a moderate contrast in areas with VRM Class IV objectives. The Proposed Action would be in VRM Class IV

4.0 VISUAL RESOURCES INVENTORY

4.1 Landscape Scenery

BLM lands are rated Class A, Class B, and Class C, for highest to lowest scenic quality, and are qualified by view distance, vegetation, topographic slopes, and characteristic landscape (particularly, the presence or absence of existing cultural modifications). Each of these components plays important roles in the assessment of change caused by the Proposed Action on landscape scenery.

As noted in **Section 3.1**, in the interest of continuity, previously approved Interim BLM VRM Classifications have been adopted by this document from the BRRTP Visual Resources Technical Report (VRTP), August 2011 prepared by POWER Engineers, Inc.

On page 55, Section 4.2.1 of the BRRTP – VRTP, POWER concluded that the existing scenic quality rating for Private Lands and Public Lands Managed by the BLM directly impacted by or adjacent to the Proposed Action is that of a **Class C** landscape. AECOM has independently field-verified this conclusion and is in concurrence. As such, a **Class C** Scenic Quality rating classifies the surrounding landscape as “common areas where characteristic features have little variation in form, line color, or texture in relation to the surrounding region” – and would apply to the entirety of the Proposed Action’s study area.

4.2 Viewer Sensitivity Levels

Sensitive viewers’ analysis and mapping for the Proposed Action encompasses public and private viewer’s concern for landscape scenery. Sensitivity levels are defined by the BLM as the measure of public concern for scenic quality. Public lands are assigned high, medium, or low sensitivity levels (BLM 1986).

On page 13 of Appendix A, Table A-8 of the BRRTP – VRTP, POWER concluded that vehicular viewer sensitivity is **High** along SR 14, an eligible State Scenic Highway, due to a: 1. High level of user concern; 2. Short duration of view; and 3. High volume of viewers. AECOM has independently verified this conclusion and is in concurrence.

Additionally, viewer sensitivity for recreational viewers (non-resident tourists, visitors, off-highway vehicle operators, etc.) in the vicinity of the Proposed Action would be **Moderate**, due to a: 1. Moderate level of user concern; 2. Short duration of view; 3. Low volume of viewers; and 4. Existing energy-related development (transmission and switching structures) in immediate foreground and foreground-midground views.

4.3 Distance Zones and Project Visibility

These distances and viewsheds, which are integral to the Viewer Sensitivity analyses, were determined by evaluating the viewsheds of nearby travel routes and vistas in the project vicinity, including but not limited to:

- State Route 14 (SR 14, an eligible State Scenic Highway)
- BLM Off-Highway Recreational Trails / LADWP right-of-way
- Pine Tree Canyon Road

Combined, these areas comprise the overall project viewshed, depicted in **Figure 2**.

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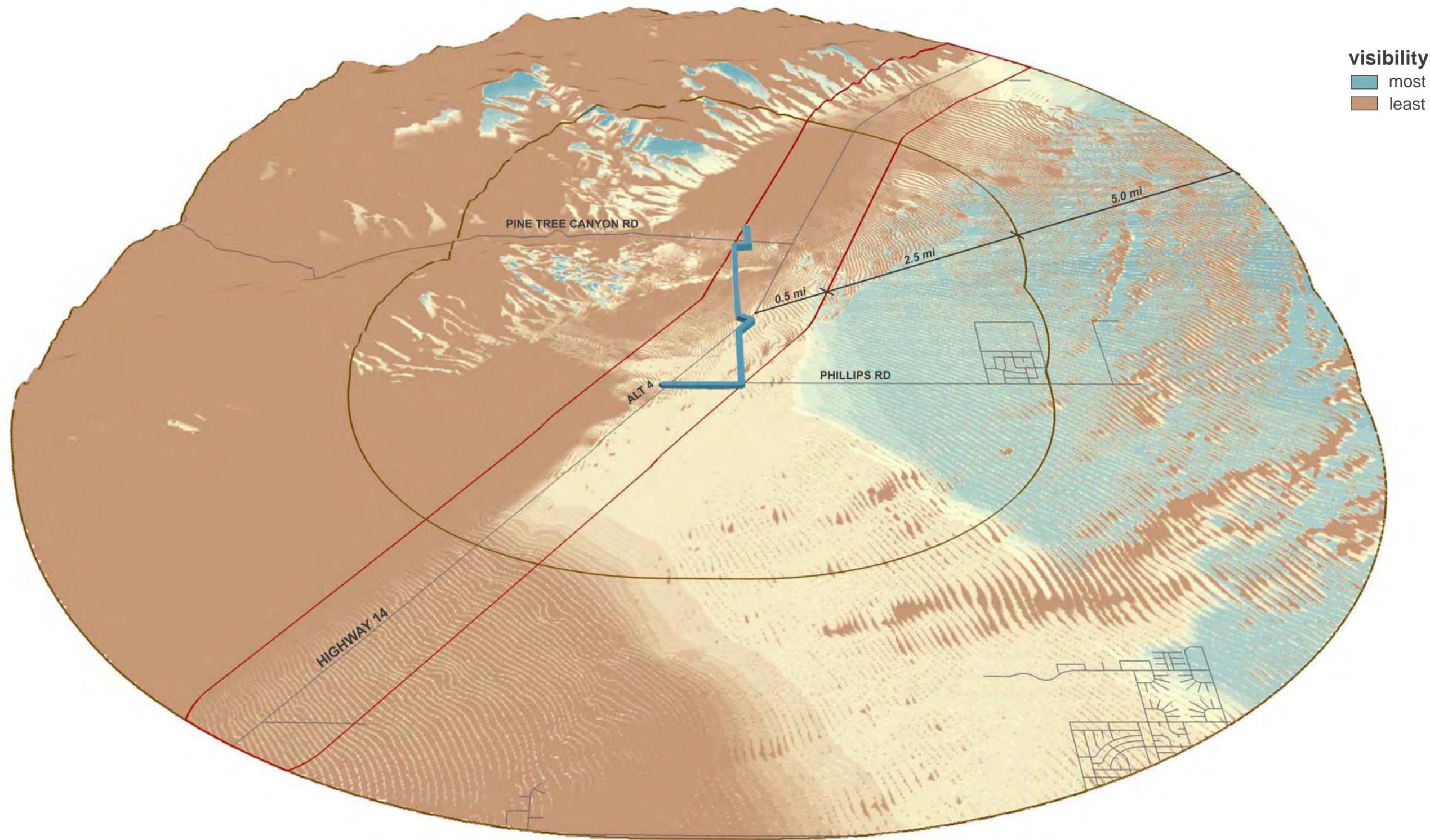


Figure 2
Project Viewshed Map

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4.4 Regional Landscape Setting

The visual setting is framed by a silhouette of pyramidal ridgelines appearing distinctly against the sky and rolling topography of the adjacent, scrub-covered transitional slopes. The visual texture of the study area is moderately coarse; with varying vegetation densities including smooth patches (formed by breaks in the vegetation and exposed soils). Colors in this landscape tend to be muted, with tans, grays, and greens dominating existing palette.

Though generally covered by high desert vegetation, the undulating topography throughout the study area and valley at-large is occasionally interrupted by a denuded wash or existing access road; providing texture and naturally-occurring visual contrast in the landscape. Seasonal warmth and color contrasts provided by reds and oranges influence this visual experience at varying times of year, but most frequently, large expanses of undeveloped, vegetated open space allow those areas remaining unvegetated to stand in strong contrast against the surroundings.

Beyond the scenic landscape, several cultural modifications encroach on the study area within, most notably State Highway 14, the existing Barren Ridge renewable transmission corridor and distant patchwork of residential and commercial development in the background views. Both recent and historically cleared rights-of-way add to the visual evidence of human-made interventions on the land, and all provide moderate to strong sources of existing visual contrast in the landscape.

4.5 Key Observation Points (KOPs)

To better understand existing conditions and potential viewer response, key observation points, or KOPs were selected based on a composite evaluation of the preceding project and corridor analyses. Because it was not feasible to analyze all views of the Project, three KOPs were selected for their ability to simultaneously represent existing conditions *and* authentically depict the effects of implementation.

These views established a baseline visual condition to which potential change was compared. The chosen KOP locations are identified in **Figure 3**. Based on the chosen location, a KOP Viewshed analysis was prepared to verify the efficacy of chosen view locations. Efficacy was evaluated through the digital visibility modeling process described below:

- a. A digital terrain model was developed from Applicant-furnished materials including: field-verified topographical contours, 3-dimensional proposed civil grading plans, and a 3-dimensional architectural model.
- b. Geospatially accurate observer points were created and programmed to match digital camera metadata including: bearing, inclination, tilt, elevation, and focal length.
- c. Observer points were placed in the digital terrain model using the GPS data of selected Key Views.

Unlike viewshed analyses, whose results are measured as a range of potential visibility (i.e., most visible to least visible), the results of view-specific visibility was scored as absolute (i.e. visible or not visible). This technique ensured the chosen viewpoint could authentically represent both the viewing public, and the Project.

KOP 1

KOP 1 is located along the northbound lanes of SR 14, approximately 325 feet south of Phillips Road. The view from this location is characterized by immediate foreground and foreground-middleground views of existing cultural modifications including SR 14, the BR RTP, and cleared ROWs, as well as existing undeveloped desert landscape. Viewers have unobstructed background views of the mountain range to the west and the scrub-covered alluvial landform below. KOP 1 represents a view typical of those along SR 14 north of Mojave, CA and possesses few unique or memorable visual elements beyond the existing BR RTP structures. Viewers traveling north on SR 14 toward this KOP from Mojave, CA and California City, CA, however, would have experienced middleground-background views of the existing Alta Wind Energy Center project as recently as 6-miles south of this KOP. KOP 1 is depicted in **Figure 4**.

KOP 2

KOP 2 is located within an existing LADPW Right-of-Way, along a BLM-designated OHV trail approximately 0.61 miles north Phillips Road/SR 14 intersection and approximately 0.79 miles west of SR 14. The KOP is roughly 1000 feet west of the Proposed Action, and 20 feet from the existing Barren Ridge Renewable Transmission Project (BR RTP) alignment. From this elevated position, unobstructed immediate foreground and foreground-middleground views of the existing BR RTP and Proposed Action are visible. KOP 2 also affords unobstructed background views of the surrounding desert landscape, including views to Castle Butte and Desert Butte (east and south of California City, respectively), but is largely typical of views in this region of the desert. KOP 2 is depicted in **Figure 5**.

KOP 2A

KOP 2A is located and characterized as described above under KOP 2, and has been included to illustrate the viewshed north-northeast from KOP 2 for evaluation of Alternative 4, only. KOP 2A is depicted in **Figure 6**.

KOP 3

KOP 3 is located along the northbound lanes of SR 14, approximately 0.76 miles north of Phillips Road. Views facing north along this corridor are long and unobstructed; providing immediate foreground and foreground-middleground views of existing cultural modifications including SR 14, the BR RTP, cleared ROW, and natural landscape features including tall mountain peaks to the west and more uniform scrub-covered alluvial landform moving east. Background views of the surrounding mountain range provide viewers a sense of topographical enclosure. The view represented by KOP 3 is typical of the experience traveling along SR 14; visually repetitious and possessing few unique or memorable visual elements. KOP 3 is depicted in **Figure 7**.

KOP 4

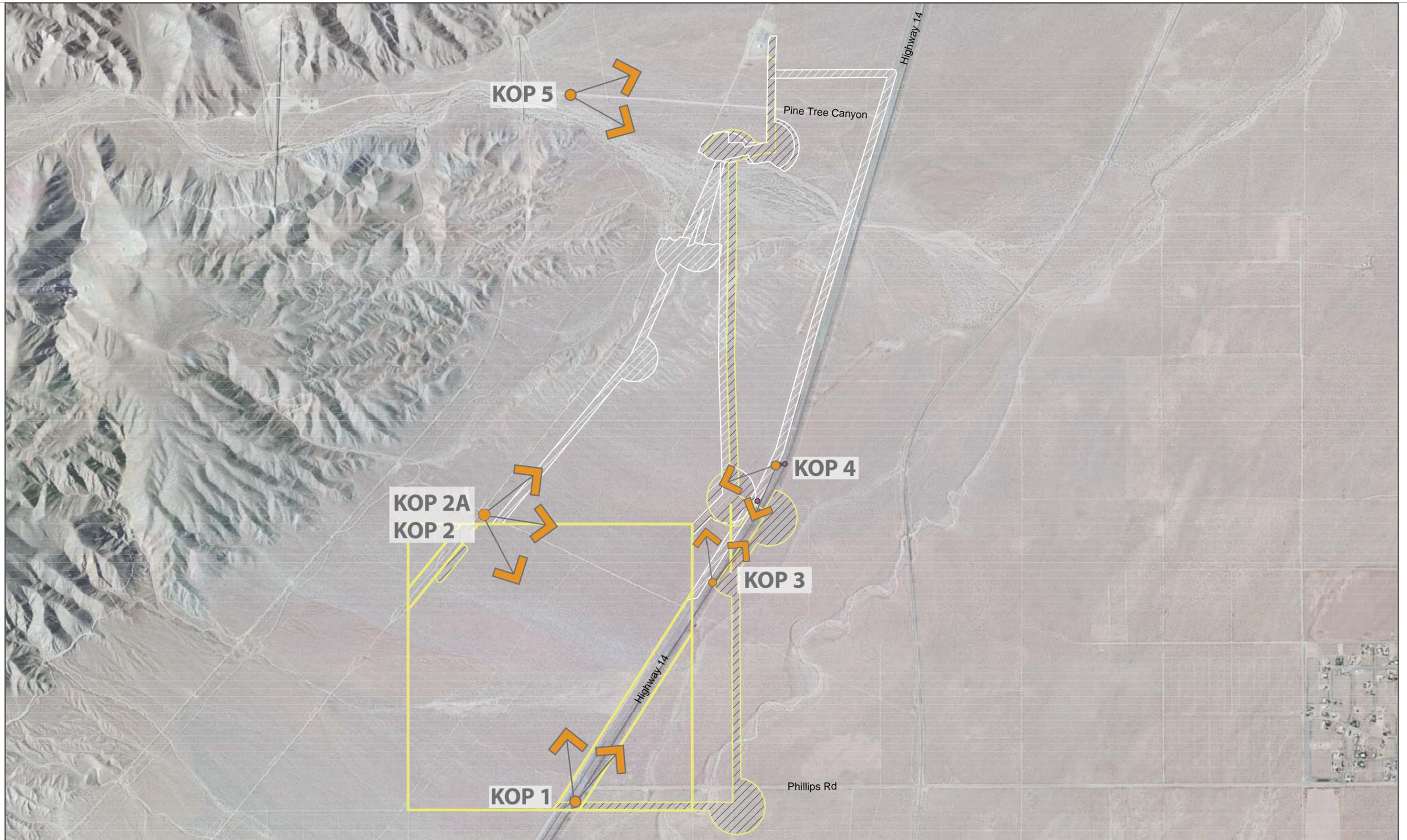
KOP 4 is located along the southbound lanes of SR 14, approximately 1.5 miles South of Pine Tree Canyon Road. Views facing south along this corridor are long and unobstructed; providing immediate foreground and foreground-middleground views of existing cultural modifications including SR 14, the BR RTP, cleared ROWs, and natural landscape features including tall

mountain peaks to the west. Background views of the surrounding valley open to the east provide viewers a sense of desert expanse. KOP 4 represents a view typical of those along SR 14 south Cinco, CA and possesses few unique or memorable visual elements beyond foreground-midground view of the BRRTP and background view of Soledad Mountain (approximately 18 miles south) of this location. Viewers traveling south on SR 14 from this KOP, however, would experience midground-background views of the existing Alta Wind Energy Center project within approximately 3-miles of this point. KOP 4 is depicted in **Figure 8**.

KOP5

KOP 5 is located on Pine Tree Canyon Road, approximately 0.61 miles west of the existing LADPW Barren Ridge Switching Station and Barren Ridge Renewable Transmission Project. The KOP is roughly the same distance from the northern terminus of the Proposed Action; directly aligned with the proposed crossings of Pine Tree Canyon Road and Pine Tree Wash. The view represented by KOP 5 is typical of the visual experience in the region and possesses few unique or memorable visual elements beyond those contributed by the BRRTP or Barren Ridge Switching Station themselves. KOP 5 is depicted in **Figure 9**.

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Source: 2013 Google Earth; Imagery Date 8/25/2012

Figure 3
KOP Location Map

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Figure 4
KOP 1 - Existing Visual Conditions

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Figure 5
KOP 2 - Existing Visual Conditions

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Figure 6
KOP 2A - Existing Visual Conditions

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Figure 7
KOP 3 - Existing Visual Conditions

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Figure 8
KOP 4 - Existing Visual Conditions

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Figure 9
KOP 5 - Existing Visual Conditions

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5.0 CONTRAST RATING AND IMPACT RESULTS

5.1 Impacts Common to all Alternatives

Construction Impacts

The visual landscape would be affected by construction of the proposed solar facility and associated ancillary structures including gen-tie substation and private transmission line construction (Alternative 4). Due to the visual nature of construction activities necessary to build the facilities, viewshed disturbances would result from the addition of photovoltaic panels, inverter stations, substation, wooden H-frame structures, conductors, O&M facilities including communications equipment, cleared ROWs, fences, and construction-related equipment, debris storage, and ground areas cleared for construction.

Impacts to the scenery caused by large expanses of color and muted reflectivity, forms of structures, vertical and horizontal lines of structures and conductors, silvery-grey and tan (ROW) colors, and smooth textures would result from introduction of the solar array and substation, particularly under Alternative 4, introduction of transmission structures crossing SR-14 in two locations along with vegetation clearing, fences, and roads. In viewsheds with existing electrical transmission line structures and ground disturbances, contrasts would be weak to moderate depending on distance from the observer. In all cases, construction activities occurring in the immediate foreground of the observer would cause greater contrasts and/or impacts to the visual landscape than those appearing at a further distance with the greatest impacts under Alternative 4.

During the short term of construction, direct impacts to people and scenery in the visual landscape is anticipated to be moderate to high and contrasts would comply with BLM VRM Class IV management objectives. Project construction activities, as discussed previously, that are located within 0.5 mile of high or moderate sensitivity viewers and have strong or moderate contrasts and/or impacts to the visual landscape, would not be expected to comply with BLM VRM Class III objectives. Mitigations involving project facilities constructed at distances greater than 0.5 mile from stationary and linear KOPs typically would reduce visual contrasts to moderate and, therefore, result in compliance with VRM Class III management objectives.

Operation Impacts

Visual resources would be impacted during the operation of the Proposed Action due to contrasts from photovoltaic panels, inverters, substation and terminal facilities, wooden h-frame transmission structures, and disturbance by cleared ROWs, permanent access roads and other areas of ground or vegetation management.

Direct impacts to viewsheds similar to those discussed for the construction phase would be expected during operation, however, due to the low vertical profile of facilities located within 0.5 miles of SR-14, and preferred location of the substation at middleground distance, the casual observer (viewers in the landscape) would not consider visual quality to be substantially diminished under Alternatives 2 or 3. As such, impacts to the visual landscape and to Class C scenery would be low to moderate. Indirect viewshed impacts would result from disturbance by human recreational activities, artifacts of activities, and vehicles with access to scenic landscapes by the Proposed Action's permanent access roads. Indirect impacts during operation would be expected to comply with equivalent BLM VRM Class III management objectives.

Proposed Alternatives 2 and 3 would have weak to moderate contrast and moderate visual impact, as all substantive vertical structures occur beyond the foreground distance. Alternative 4 would have strong contrast and high visual impact resulting from two aboveground gen-tie crossings of SR 14, one crossing of Pine Tree Canyon Road, and location of solar gen-tie substation within 0-0.5 miles of SR-14. Refer to **Figures 10-15** for simulated visual effects.

Due to effects of implementation, indirect impacts in the immediate foreground 0.5 mile from sensitive viewers may not comply with BLM VRM Class III management objectives. It is expected these impacts would be mitigated as much as possible on a case-by-case basis.

Decommissioning Impacts

Impacts to visual resources during the decommissioning phase of the Proposed Action would be similar to construction impacts. The mitigation of visual effects related to decommissioning may be satisfied by corollary biological mitigation measures that restore native habitat and vegetation cover to pre-project conditions.

5.2 Impacts from Alternative 2 (No Action Alternative)

Direct impacts to people and scenery are anticipated to be moderate and contrasts (weak to moderate) would comply with BLM VRM Class III management objectives with mitigation incorporated. Project features located within 0.5 mile of high sensitivity viewers along SR 14 would be noticeable to viewers as they approach and pass by the site; however, provided the low vertical profile (6-feet) of the solar array relative to the surrounding expanse of rolling desert topography (~30-feet), existing transmission structures (~135-feet) and vertical scale of Barren Ridge backdrop (>1000 feet); impacts from the proposed solar array would comply with BLM VRM Class III objectives if visually buffered and treated per measure **VR-1** (Section 7.0).

Proposed project features possessing vertical profiles taller than the solar array (including the gen-tie substation and O&M facility) would be located at the northwest corner of the project site. In this location, the tallest project components would be located outside the immediate foreground viewing distance of SR 14, between 0.5-mile and 1-mile from highly sensitive viewers, and would be directly adjacent to existing electrical transmission infrastructure. As proposed, these vertical profiles (30 to 70-feet) would be visually consist with existing vertical elements and would be vertically inferior but visually analogous to existing transmission structures. Given this location and its consistency with existing conditions, larger vertical components would introduce only moderate visual contrast with mitigation incorporated, and overall visual impact would be moderate with application of **VR-6 (Section 7.0)**.

Beyond vertical profile, the color of materials contributes greatest contrast in the characteristic landscape and emphasizes form, line, and texture contrasts of those materials. Application of mitigation for the surfaces of perimeter fencing, terminal and ground electrode structures, tanks and permanent structures (including O&M building) would mitigate contrasts to a weak to moderate level in this landscape. Color treatment does not apply to the photovoltaic surfaces. Additionally, implementation of mitigation **VR-7 (Section 7.0)** lighting guidelines would reduce night-time glare to minimal levels, minimally noticeable in the visual landscape.

5.3 Impacts from Alternative 3 (Proposed Action)

Potential impacts to people and scenery are anticipated to be the same as those described under Alternative 2, and the Proposed Action would necessitate implementation of Mitigation Measures as noted above and described in **Section 7.0**.

5.4 Impacts from Alternative 4 (Proposed Action with Private Gen-tie)

Direct impacts to people and scenery under Alternative 4 are anticipated to be adverse and immitigable. Although the proposed solar facility would be implemented as described under Alternatives 2 and 3, the private lands Gen-Tie component of Alternative 4 necessitates placement of both substation and transmission structures within the immediate foreground of SR 14; directly impacting highly sensitive viewers. As proposed, the private Gen-Tie alignment would cross SR 14 twice, Pine Tree Canyon Road once, and run parallel and adjacent to an eligible state Scenic Highway.

Project features located within 0-0.5 mile of high sensitivity viewers along SR 14 would exert strong contrast, vertical dissymmetry, and constitute an adverse visual impact that would not be reduced through substantive mitigation measures or comply with benchmark management objectives.

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Figure 10
KOP 1 - Proposed Action - Alternatives 2 & 3

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Figure 11
KOP 2 - Proposed Action - Alternatives 2 & 3

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Figure 12
KOP 2A - Proposed Action - Alternative 4

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Figure 13
KOP 3 - Proposed Action - Alternative 4

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Figure 14
KOP 4 - Proposed Action - Alternatives 2 & 3

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Figure 15
KOP 5 - Proposed Action - Alternative 4

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5.5 Summary of Impacts

Landscape scenery impacts (**Table 8**) were determined based on the comparison of change caused by the Proposed Action with the scenic quality inventory of the affected environment. The results are based on consideration of existing scenic quality rating/scores, existing landscape character, presence or absence of existing industrial development (transmission lines, pipelines, etc.), and the effect of introducing the Proposed Action into the landscape as either a new or additional cultural modification.

Table 8 Summary of Landscape Scenery Impacts

Scenic Quality	Proposed Action's Visual Change		
	Strong	Moderate	Weak
Class C	Moderate	Low	Low

Sensitive viewers' impacts were determined based on the comparison of change caused by the Proposed Action with sensitivity/user concern levels, distance zones (0 to 0.5 mile, 0.5 to 2.5 miles, 2.5 to 5 miles, and greater than 5 miles) (**Table 9**), and visibility of the Proposed Action (**Table 10**).

Table 9 Summary of Sensitivity Level Impacts

High Viewer Sensitivity Impacts (Vehicular Viewers, SR 14)				
Alternative	Project Visibility	Proposed Action's Visual Change		
		Strong	Moderate	Weak
2, 3, 4	0 - 0.5 miles	High	Moderate	Moderate
2, 3, 4	0.5 – 2.5 miles	Moderate	Moderate	Low
2, 3, 4	2.5 – 5 miles	Moderate	Low	Low
N/A	Greater than 5 miles	Low	Low	Low
Medium Viewer Sensitivity Impacts (Recreational Viewers)				
2, 3, 4	0 - 0.5 miles	High	Moderate	Moderate
2, 3, 4	0.5 – 2.5 miles	Moderate	Low	Low
2, 3, 4	2.5 – 5 miles	Low	Low	Low
N/A	Greater than 5 miles	Low	Low	Low

Table 10 Summary of Distance Zones and Project Visibility

Distance Zones and Structure Visibility		
Alternative	Distances	Distance from Proposed Action
4	Immediate Foreground	0 - 0.5 miles
2, 3	Foreground-Middleground	0.5 – 2.5 miles
Distance Zones and ROW Visibility		
4	Immediate Foreground	0 - 0.5 miles
2, 3, 4	Foreground-Middleground	0.5 – 5 miles
N/A	Background	5 – 20 miles

Visual impact levels are outlined by alternative in **Table 11**. Impacts to landscape scenery were determined by measuring the extent of effects of the Proposed Action's structures, access

roads, and disturbed ROWs on the scenic landscape through spatial analysis of BLM’s visual resource inventory and visual quality classifications.

Impacts to viewers were determined by measuring the extent effects of the Proposed Action’s structures, access roads, and disturbed ROWs on people through spatial analysis of BLM’s visual resource inventory, sensitivity levels and distance zones.

Table 11 Summary of Impact Levels

Alternative	Impact	Criteria
4	High	The Proposed Action would be dominant in Class A or Class B landscape scenery. The Proposed Action would be visible within 0.5 miles of high sensitivity viewers.
2, 3	Moderate	The Proposed Action would be co-dominant in Class B landscape scenery. The Proposed Action would be visible within 0.5 to 2.5 miles of medium sensitivity viewers.
	Low	The Proposed Action would be dominant or co-dominant in Class C landscape scenery. The Proposed Action would be visible in greater than 2.0 miles of medium sensitivity viewers. The Proposed Action would parallel and be co-dominant with existing transmission line features.

Compliance with BLM VRM objectives was determined by comparison of objectives with visual contrast ratings from 3 KOP, evaluating the 4 proposed build alternatives. The agency management objectives compliance criteria are summarized in the Impacts sections by alternative. The relevant BLM VRM Objective is outlined below in **Table 12**, and BLM compliance criteria is summarized below, by alternative, in **Table 13**.

Table 12 Relevant Benchmark Objective

VRM Class	Objective
Class III Objective	The objective of this class is to partially retain the existing character of the landscape. Changes to the landscape character may begin to attract attention but should not dominate the visual setting.

Table 13 Summary of Benchmark Compliance

Alternative	VRM	Criteria
4	No	The Proposed Action would have a high or moderate contrast with VRM Class II objectives. The Proposed Action would have a high contrast in areas with VRM Class III objectives. The Proposed Action would have a moderate contrast in areas with VRM Class III objectives.
2, 3	Yes	The Proposed Action would have a low contrast in areas with VRM Class III objectives. The Proposed Action would have a moderate contrast in Class C scenery The Proposed Action would be in VRM Class IV

6.0 PROJECT DESIGN FEATURES AND BEST MANAGEMENT PRACTICES

6.1 Renewable Energy Action Team

The following guidelines from Best Management Practices & Guidance Manual: Desert Renewable Energy Projects - Draft Staff Report (CEC-700-2009-016-SD), October 2009.

DREP Chapter 2: Visual Resources

Reduce visual impacts during construction by minimizing areas of surface disturbance, controlling erosion, using non-chemical dust suppression techniques, and restoring exposed soils as closely as possible to their original contour and vegetation. Guidelines specifically applicable to the Proposed Action are the following:

- 3) Color and finish surfaces of all project structures and buildings visible to the public to ensure they minimize visual intrusion and contrast and minimize glare. Paint grouped structures the same color to reduce visual complexity and color contrast.
- 4) Establish a regular litter pick-up procedure within and around the perimeter of the project site.

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7.0 MITIGATION MEASURES

Mitigation measures were developed to reduce the potential for adverse effects to visual resources. Given the nature of the Proposed Action, only mitigation measures determined to be effective in reducing impacts were recommended, and were considered so if they:

- reduce the level of dominance the Proposed Action may have in the landscape
- reduce the degree of deviation from the Landscape Character that may occur
- increase the intactness or level of expression of the Landscape Character that will result from the Proposed Action
- reduce or eliminate visibility of the Proposed Action from sensitive viewpoints

Effective mitigation measures are those that reduce the visibility or weaken the contrast of the Proposed Action. Further, in assessing the impact of the proposed activity, it was determined that all Alternatives would have at least a "low" impact since there would always be some level of identifiable impact to viewers as long as the transmission line is visible. Proposed visual mitigation measures are shown below in **Table 14**.

Mitigation Measures

The following seven mitigations are proposed for the Proposed Action. These mitigations would be applied, as appropriate, to all high and moderate impacts to reduce impact levels for views from stationary and linear KOPs for compliance with benchmark objectives.

Table 14 Proposed Mitigation Measures

VR-1	<i>Use BLM environmental colors (Standard Environmental Colors, Color Chart CC-001, 2008) for surface coatings of permanent buildings, fences, gates, and tanks at terminal sites. Color selection is based on a site-specific assessment. Paint grouped structures the same color to reduce visual complexity and color contrast. Does not apply to photovoltaic surfaces.</i>
Effectiveness	This mitigation would substantially reduce impacts of vertical elements and site boundary fencing.
VR-2	<i>Locate structures, roads, and other project elements as far back from road, trail, and wash crossings (linear KOPs) as possible, and, where feasible, employ terrain and vegetation to screen views from crossings.</i>
Effectiveness	This mitigation would substantially reduce visual contrasts by decreasing the apparent size and extent of structures.
VR-3	<i>In areas with no existing transmission lines, move the transmission line (alignment) away from the immediate foreground of stationary (non-linear) KOPs to a distance of 0.5 miles or more. Where feasible, approach and cross at right angles to linear KOPs such as roads, trails, and washes.</i>
Effectiveness	This mitigation would substantially reduce visual contrasts.
VR-4	<i>Feather hard ROW edges in areas of intact landscapes in the immediate foreground and foreground-middleground views from linear and stationary KOPs.</i>
Effectiveness	This mitigation would substantially reduce visual contrasts in the most visually sensitive landscapes.
VR-5	<i>Materials and surface treatments of structures and land disturbances</i>

	<i>should repeat and/or blend with the existing form, line, color, and texture of the landscape and have little or no reflectivity (non-specular). This measure does not apply to photovoltaic surfaces.</i>
Effectiveness	This mitigation would reduce line and form structure contrasts by blending structures with existing structures.
VR-6	<i>When siting electrical transmission equipment, prioritize locations adjacent to existing transmission lines, where possible.</i>
Effectiveness	This mitigation would reduce visual contrasts from strong to moderate and moderate to weak.
VR-7	<i>Minimize lighting at terminal and construction facilities to the extent permitted by OSHA and down shield lights to reduce night glare and light pollution.</i>
Effectiveness	This mitigation would substantially reduce night-time visual contrasts by diminishing the effects of lighting on the night landscape.

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