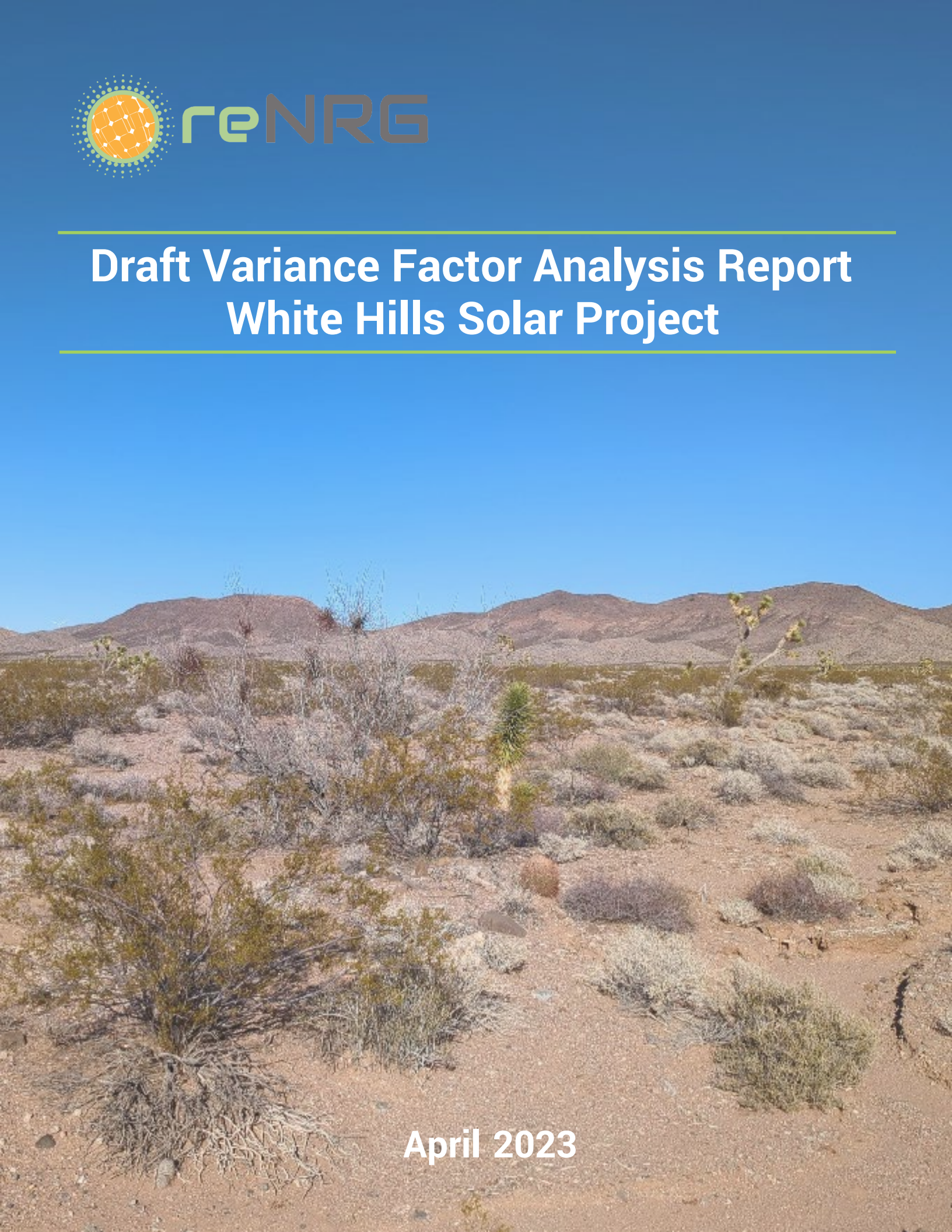
Draft Variance Factor Analysis Report
White Hills Solar Project



April 2023

DRAFT VARIANCE FACTOR ANALYSIS REPORT

WHITE HILLS SOLAR PROJECT

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ACRONYMS AND ABBREVIATIONS

ACC	Arizona Corporation Commission
ACEC	Area of Critical Environmental Concern
ADEQ	Arizona Department of Environmental Quality
ADOT	Arizona Department of Transportation
ADWR	Arizona Department of Water Resources
AF	acre-feet
AGFD	Arizona Game and Fish Department
APE	area of potential effects
Applicant	reNRG Partners
ARO	Archaeological Records Office
ASM	Arizona State Museum
AUMs	animal unit months
AZOGCC	Arizona Oil and Gas Conservation Commission
AZPDES	Arizona Pollutant Discharge Elimination System
BESS	battery energy storage system
BLM	Bureau of Land Management
BMP	best management practices
CCA	Candidate Conservation Agreement
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CHAT	Crucial Habitat Assessment Tool
CWA	Clean Water Act
DLCC	Desert Landscape Conservation Cooperative
DOE	Department of Energy
DOI	Department of Interior
EJ	environmental justice
EJSCREEN	Environmental Justice Screening and Mapping Tool
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FAA	Federal Aviation Administration

ACRONYMS AND ABBREVIATIONS

FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FPPA	Farmland Protection Policy Act
FTE	full-term-equivalent
gen-tie	generation interconnection
GLO	General Land Office
GMU	Game Management Unit
GW	gigawatts
HA	Herd Area
HMA	Herd Management Area
IPaC	Information for Planning and Consultation
kV	kilovolt
KFO	Kingman Field Office
LCC	Landscape Conservation Cooperative
MW	megawatt
MWac	megawatt alternating current
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NHT	National Historic Trail
NPS	National Park Service
NRHP	National Register of Historic Places
NWP	Nationwide Permit
O&M	operation and maintenance
OHV	off-highway vehicle
OSHA	Occupational Safety and Health Administration
PEIS	Programmatic Environmental Impact Statement
PFYC	potential fossil yield classification
PJD	Preliminary Jurisdictional Delineation
PM_{10}	particulate matter, 10 micrometers and smaller

ACRONYMS AND ABBREVIATIONS

$PM_{2.5}$	particulate matter, 2.5 micrometers and smaller
POD	Plan of Development
PPA	power purchase agreement
PRMP	Proposed Resource Management Plan
Project	White Hills Solar Project
PV	photovoltaic
reNRG	reNRG Partners
REA	Sonoran Desert Rapid Ecoregional Assessment
RDEP	Restoration Design Energy Project
REDA	Renewable Energy Development Area
RMP	Resource Management Plan
ROD	Record of Decision
ROW	right-of-way
SEZ	Solar Energy Zone
SHPO	State Historic Preservation Office
SR	State Route
SWPPP	Stormwater Pollution Prevention Plan
TCP	Traditional Cultural Properties
TMP	Travel Management Plan
Tribes	Native American Tribes
US Highway 93	US 93
USACE	U.S. Army Corps of Engineers
USC	United States Code
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VRI	visual resource inventory
VRM	visual resource management
WAPA	Western Area Power Administration
WOTUS	waters of the U.S.

1 Introduction

1.1 Background

In 2012, the Bureau of Land Management (BLM) and the U.S. Department of Energy (DOE) issued the *Final Programmatic Environmental Impact Statement (PEIS) for Solar Energy Development in Six Southwestern States* (Solar PEIS), which includes Arizona (BLM and DOE 2012). The comprehensive Solar Energy Program facilitates the permitting of solar energy development projects on public land in a more efficient, standardized, and environmentally responsible manner. The Solar Energy Program identified Solar Energy Zones (SEZs) that are well-suited for utility-scale production of solar energy, with three SEZs in southwestern Arizona: Agua Caliente SEZ located west of the town of Hyder in Yuma County, Brenda SEZ located east of the town of Quartzsite in La Paz County, and Gillespie SEZ located southwest of the town of Arlington in Maricopa County.

The Solar Energy Program also identified variance areas on BLM-administered lands that are outside of the SEZs and not otherwise excluded by the Solar Energy Program. Variance areas are potentially available for utility-scale solar energy development per the variance process, to provide flexibility. The BLM considers right-of-way (ROW) applications for utility-scale solar energy development in variance areas on a case-by-case basis based on environmental considerations; coordination with appropriate federal, state, and local agencies and Native American Tribes (Tribes); and public outreach.

As part of the variance process, reNRG Partners (reNRG or Applicant) must demonstrate that the proposed facility would avoid, minimize, and/or mitigate the impacts on sensitive resources, according to standards set out by the Solar PEIS (BLM and DOE 2012). The Applicant must also demonstrate that (1) the Project would be compatible with state and local plans, (2) all required permits and authorities can be acquired to implement the project, and (3) any potential conflicts with sensitive resources have been assessed. This variance factor analysis report provides this information to the BLM Kingman Field Office (KFO) for the Project ROW grant application review.

1.2 Project Description

reNRG proposes to develop the White Hills Solar Project (Project), consisting of up to 450-megawatt (MW) alternating current (MWac) solar photovoltaic (PV) power generating facility and co-located battery energy storage system (BESS). The Project would be located in the BLM KFO approximately 40 miles northwest of Kingman in Mohave County, Arizona (refer to Figure 1-1 and Figure 1-2). The Project would be constructed using PV solar modules mounted on single-axis, horizontal tracker structures along with fire-proof containerized structures housing battery modules, a control system, and a heating ventilation and air conditioning system.

The Project would be located on approximately 4,300 acres of BLM-administered lands. The Project boundary would cover a larger area than required for the solar facility to allow for facility layout adjustments to minimize environmental impacts based on the National Environmental Policy Act (NEPA) analysis.

The power produced by the Project would be conveyed to the Western Area Power Administration (WAPA) transmission system, specifically the Peacock – Mead 345-kilovolt (kV) line. The Applicant submitted an Interconnection Application to WAPA for 450 MWs solar generation and up to 450 MWs storage at the existing 345-kV White Hills Substation. The ROW grant from the BLM would be for the construction, operation and maintenance (O&M), and decommissioning the Project and related interconnection facilities and network upgrades.

The average annual energy production from a 450 MWac Project equates to the annual daytime electricity needs of approximately 245,000 households. Solar electric power is produced during daylight hours when electricity demand is highest and coupled with BESS technology in order to improve the customer's energy product. The Project would generate greenhouse gas-free electricity that would offset carbon dioxide and other emissions that would result from producing an equivalent amount of electricity from fossil fuel-fired electric generators.

1.3 Applicant's Purpose and Need for the Project

1.3.1 Need for Renewable Energy

Arizona's Renewable Portfolio Standard (RPS) requires that 15 percent of all electricity generated in Arizona be derived from renewable sources by 2025. State government agencies were directed to take all appropriate actions to implement this target in all regulatory proceedings, including siting, permitting, and procurement for renewable energy power plants and transmission lines. Arizona utility companies have made further announcements of phasing out their use of coal-fired generation and partially replace that generation with renewable energy. This will create a need of nearly eight gigawatts (GW) of potential renewable energy over the next seven years. The Applicant believes that the Project will be cost competitive with electricity from other types of renewable projects throughout the country.

The federal government has enacted legislation strongly encouraging the development of renewable energy. As part of an overall strategy to develop a diverse portfolio of domestic energy supplies for the future, the Energy Act of 2020 encourages various carbon management and removal programs over five years, including reauthorization of Fossil Energy Research and Development Programs at DOE. Section 3104 of the Energy Act of 2020 requires the Secretary of the Interior to set national goals for wind, solar, and geothermal energy production on Federal land and, further, to seek to permit at least 25 GW of electricity from wind, solar, and geothermal projects by 2025.

In 2021, President Biden signed multiple Executive Orders (EOs) relating to climate change and renewable energy, including EO 13990, "Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis;" EO 14008, "Tackling the Climate Crisis at Home and Abroad;" and EO 14057 which affirmed that it is the policy of the United States that the Federal Government leads by example to achieve a carbon pollution-free electricity sector by 2035 and net-zero emissions economy-wide by no later than 2050. In 2022, the Inflation Reduction Act and EO 14082, "Implementation of the Energy and Infrastructure Provisions of the Inflation Reduction Act of 2022," further progressed these initiatives by setting aside billions of dollars in grants and loans to spur financing and deployment of new clean energy projects that cut greenhouse gas emissions and other pollutants.

1.3.2 Project Purpose and Need

The purpose of the Project is to construct a clean, renewable source of solar electricity that helps meet the region's growing demand for power and helps fulfill national and state renewable energy and greenhouse gas emission goals. Solar energy provides a sustainable, renewable source of power that helps reduce fossil fuel dependence and greenhouse gas emissions. Considering the entire process, from raw material sourcing through end-of-life-cycle collection and recycling, 450 MWac of additional generating capacity would produce a small fraction of the greenhouse gas emissions of a fossil fuel plant of similar generating capacity.

Specific Project objectives are:

- Establish a solar PV power-generating facility with co-located BESS of sufficient size and configuration to produce approximately 450 MWac of electricity to provide Arizona and neighboring states a significant new source of renewable energy and 450 MW storage.
- Produce and transmit electricity at a competitive cost.
- Locate the facility in the rural part of Mohave County in proximity to an available connection to the existing electrical distribution infrastructure.
- Minimize environmental effects by:
    - Avoiding Exclusion Areas identified in the Solar PEIS Record of Decision (ROD)
    - Using existing electrical distribution facilities, ROWs, roads and other existing infrastructure, where practicable
    - Minimizing water use during construction and operation
    - Reducing greenhouse gas emissions
- Using solar technology that is available, proven, efficient, and easily maintained, recyclable, and environmentally sound.

1.3.3 Power Market and Project Benefits

The Project would interconnect to WAPA's existing White Hills Substation (refer to Figure 1-2). The interconnection would allow WAPA and other utilities to purchase renewable energy generated by the Project under one or more Power Purchase Agreements (PPAs) to deliver energy from a (nominal) 450 MWac generating facility.

The Project is well suited to arid environments because of the technology's low water consumption. This is a key consideration in Arizona and the western U.S. as the population grows, and water supplies become more constrained. Solar PV technology converts sunlight directly into electrical energy, entails no thermal process, and therefore does not require process or cooling water to produce electricity. Water consumption during operations would consist of dust control and domestic use for on-site personnel and is between 95 and 99 percent less than concentrating solar technology projects that employ conventional steam turbines to generate electricity. The Project would also create employment for Arizona residents. The Project is anticipated to create an average of 300 construction jobs at any given time and create up to seven long-term full-time-equivalent (FTE) operational jobs. These jobs would in turn support many other jobs in the Arizona economy.

1.4 Final Variance Factor Analysis Report Findings

The Project is located in a solar variance area and, is not in conflict with any of the exclusion criteria identified in the 2012 Solar PEIS (BLM and DOE 2012). In addition, the Project has not been found to be in conflict with the Kingman Resource Area Resource Management Plan (RMP) planning objectives. The BLM considers a variety of factors when evaluating ROW applications and associated data in variance areas. The BLM determines whether it is appropriate to continue to process, or to deny, a ROW application submitted through the variance process based on a thorough evaluation provided by the Applicant. If the variance application is approved, the Project would undergo environmental analysis under NEPA. The BLM will make a determination based on the information contained in this variance factor analysis report as to whether or not the Project will move on to NEPA analysis. Land use and resource analyses would be conducted as part of the NEPA process and proposed alternatives would consider project design to avoid or minimize any potential conflicts and/or adverse resource impacts.

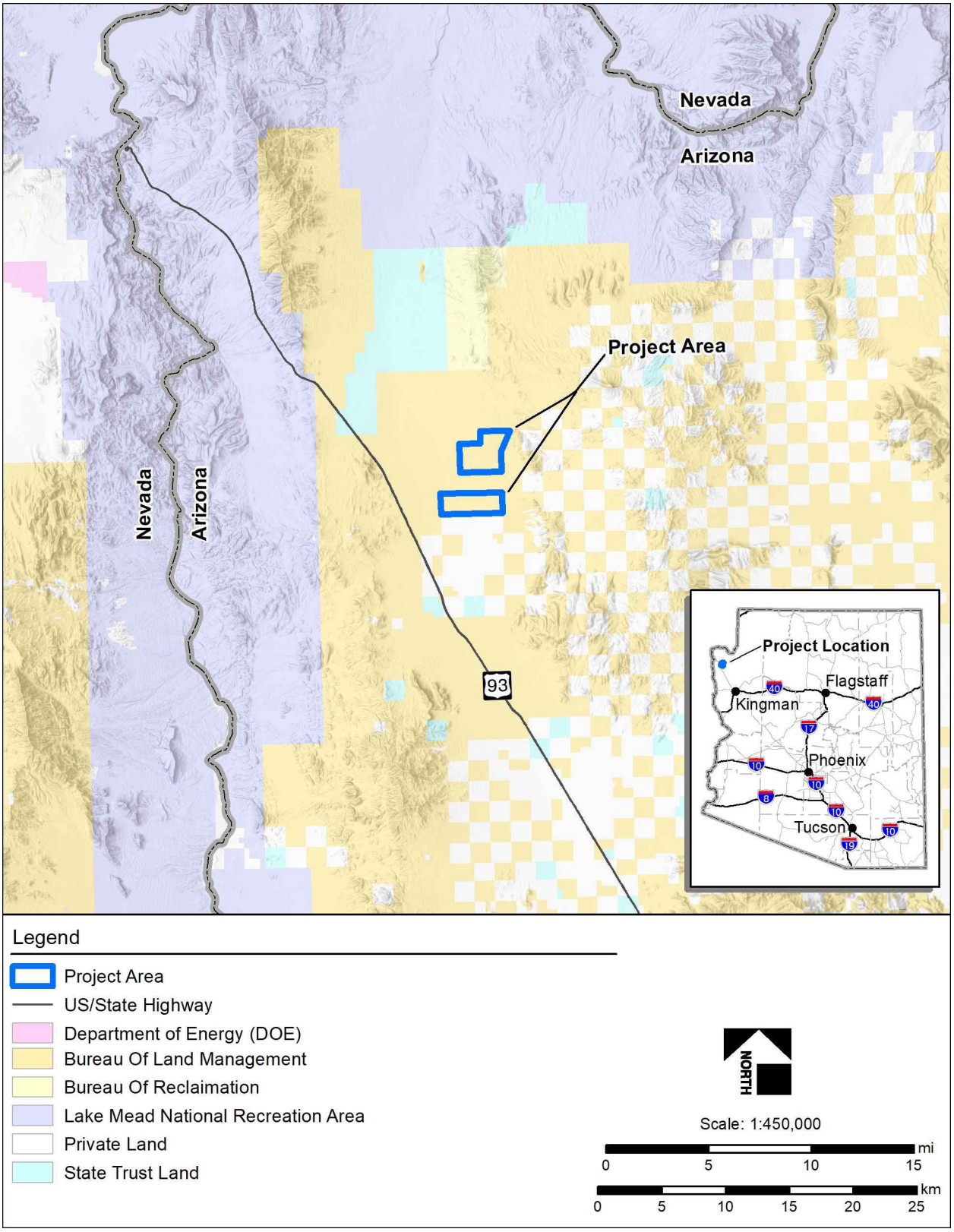


Figure 1-1. White Hills Solar Project Vicinity

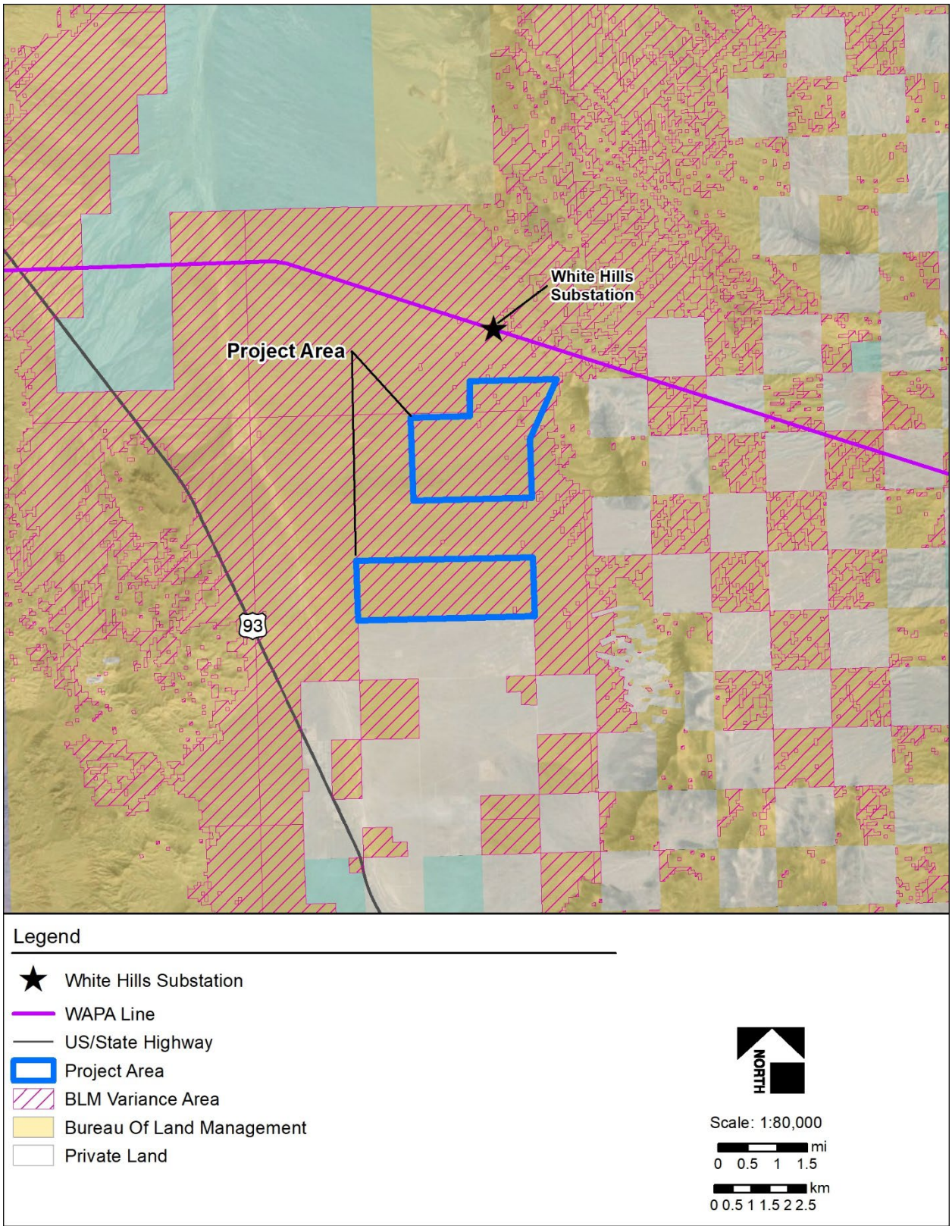


Figure 1-2. White Hills Solar Project Area

2 Factors to be Considered

2.1 Land Availability

The availability of lands in an SEZ that could meet the applicant's needs, including access to transmission.

The BLM manages three SEZs in Arizona – Brenda, Agua Caliente, and Gillespie – however, none of which are located in the BLM KFO. The nearest designated SEZ to the Project area is the Brenda SEZ approximately 145 miles south of the Project. The Project location was chosen for its availability to an existing transmission line corridor (WAPA Peacock-Mead 345-kV) and the existing White Hills Substation. Access to the Project would be from U.S. Highway 93 (US 93) where the Mohave County Wind Farm Project has an existing access road.

There are approximately 663,201 acres of variance areas located within the BLM KFO. The Project location has several advantages:

- Proximity to the existing White Hills Substation
- Cost effective connection to the existing White Hills Substation
- Presence of existing transmission line WAPA corridor

2.2 Current Land Use Plan Conformance

Documentation that the proposed project will be in conformance with decisions in current land use plan(s) (e.g., visual resource management class designations and seasonal restrictions) or, if necessary, represents an acceptable proposal for a land use plan amendment.

The Project area is located within the BLM KFO planning area and is managed under the 1995 Kingman Resource Area RMP ROD (BLM 1995). This approved RMP was described as Alternative 2 in the *Kingman Resource Area Proposed Resource Management Plan and Final Environmental Impact Statement* (PRMP/FEIS) (BLM 1993).

The 1993 Kingman Resource Area RMP identified overarching and resource-specific objectives to guide the management of approximately 2.4 million surface areas of public lands and 2.0 million acres of federal minerals in northwestern Arizona. In addition, specific planning issues were identified and included recreation planning; off-highway vehicles (OHV); special area designations; wildlife habitat/threatened and endangers species; riparian/wetland area management; land tenure; and salable, locatable and leasable minerals. The 1993 RMP did not identify renewable energy (or, in particular, utility-scale solar) as a key issue or concern during its planning process.

The 2012 Solar PEIS ROD amended the 1993 Kingman Resource Area RMP to include the designated variance areas where the Project would be located. Additionally, the Project area located within the variance area was also identified as a Renewable Energy Development Area (REDA) in the *Renewable Arizona: Restoration Design Energy Project ROD and RMP Amendments* (BLM 2013b). The REDAs are areas in Arizona on BLM-administered land with low or no known resource conflicts and may be suitable for renewable energy development.

The initial Project review in this variance factor analysis report show that the location of the solar facility optimizes accessibility to the existing White Hills Substation and transmission line facilities. There are no SEZs or other variance land options that provide similar accessibility in the area. Approximately 98 percent (4,227 acres) of the Project would be located within a REDA as defined in the RDEP ROD (BLM

2013b). The Project area would be in conformance with the designated VRM classifications. Based on an initial review of the 1993 Kingman Resource Area RMP – and the amendments made to it by the 2012 Solar PEIS ROD and 2013 RDEP ROD – the Project would be in conformance with the current plan.

The Project would be partially located within NextEra's Mohave County Wind Farm Project (BLM ROW AZA 232315AA). The Applicant would design the solar facility in coordination with NextEra so that it would not conflict with NextEra's facilities authorized to operate and maintain the wind farm. The Project would coexist with this renewable energy project and would, where feasible, utilize existing access roads. The Applicant has initiated coordination with NextEra on the solar design. NextEra indicated that they are willing to coordinate the project layout and the biggest consideration would be impacts to the buried collection lines from the wind project. Discussions would continue as the project progresses through NEPA.

2.3 Landscape Conservation Objectives Consistency

Documentation that the proposed project will be consistent with priority conservation, restoration, and/or adaptation objectives in the best available landscape-scale information (e.g., landscape conservation cooperatives, rapid ecological assessments, and State and regional-level crucial habitat assessment tools [CHATs]).

The Project area is not located within any National Conservation Lands, which includes National Monument, National Conservation Areas, Wilderness Areas, Wilderness Study Areas, Wild and Scenic Rivers, and National Scenic and Historic Trails (BLM 2016).

In 2013, the BLM completed the Rapid Ecological Assessment (REA) for the Mojave Basin and Range ecoregion (BLM 2013a). The goal of the REA was to identify ecological resource status; potential to change from a landscape viewpoint; and potential priority areas for conservation, restoration, and development. The REA examines broad-scale ecological values, conditions, and trends by synthesizing spatial datasets. It developed a current landscape condition model, which represents the relative effects of land uses on natural ecosystems and habitats. Landscape condition was used as a general indicator of habitat quality, categorized into 10 measures from the least impacted/most intact areas (category 1) to the most impacted/least intact area (category 10). Based on available maps and data for the REA, the Project area generally falls in the middle range (category 6) for landscape condition, indicating that the Project area has mixed habitat quality and leans towards more impacted landscapes.

Landscape Conservation Cooperatives (LCCs) have been established to address landscape and seascape scale conservation issues. LCCs inform resource management decisions to address broad-scale stressors including habitat fragmentation, genetic isolation, spread of invasive species, and water scarcity all of which are magnified by a rapidly changing climate. The Project area is within the Desert Landscape Conservation Cooperative (DLCC) a partnership formed and directed by resource management entities as well as interested public and private entities in the Mojave, Sonoran, and Chihuahuan Desert regions of the southwestern United States and northern Mexico (DLCC 2023). There are no specific conservation planning guidance or conservation priorities identified for the Desert LCC for the Project area.

The Arizona Game and Fish Department (AGFD) Online Environmental Review Tool incorporates data from the Arizona Natural Heritage Program, CHAT, State Wildlife Action Plan, Heritage Data Management System wildlife observations, distribution models, and Arizona Breeding Bird Atlas as well as other relevant natural resource data, such as barriers, vegetation communities, wetland and riparian areas, and vegetation diversity. A review of the data indicates that the Project is not within identified wildlife habitat connectivity features (see Section 2.16). The AGFD report also identified federally listed

threatened and endangered species and BLM sensitive species that might occur within the vicinity of the Project. Refer to Section 2.4.11 for a review of these species and their potential to occur within the Project area. There are no Important Birds Areas, critical habitats, or wildlife refuges in the Project area.

2.4 Programmatic Design Feature Conformance

Documentation that the proposed project can meet applicable programmatic design features adopted in the Solar PEIS ROD (See Solar PEIS ROD, Appendix A, Section A.4.1).

The Project would be required to adhere to design feature requirements outlined in the Solar PEIS ROD (BLM and DOE 2012). Additionally, the RDEP ROD includes design features, required plans, and best management practices (BMPs) associated with siting and design, construction, O&M, and decommissioning of renewable energy projects (BLM 2013b). The Applicant would prepare a number of management plans, as appropriate and as outlined in the RDEP ROD Appendix B, to support the environmental analysis and BLM approval and issuance of a ROW grant and ground lease. If the variance application is approved, the Applicant would develop these plans and any additional plans deemed necessary by the BLM KFO to achieve the requirements in the Solar PEIS and RDEP ROD, as determined by the Project-specific NEPA process.

The following list of management plans to address the 2012 Solar PEIS programmatic design features and 2013 RDEP ROD requirements for the Project would be prepared and implemented by the Applicant, as appropriate, as the Project designs progress.

- **Decommissioning and Site Reclamation Plan:** addresses the decommissioning, removal, and proper disposal, as appropriate, of the solar facility and associated infrastructure; followed by the reclamation, revegetation, restoration, and soil stabilization of the site.
- **Dust Abatement Plan:** addresses fugitive dust control measures during construction, O&M, and decommissioning.
- **Spill Prevention Control and Countermeasure Plan:** addresses waste and hazardous materials management related to storage, spill response, transportation, and handling of materials and wastes.
- **Hazardous Materials Management Plan:** addresses storage and disposal of any hazardous fuels, including oil and fuel; prepared in compliance with all applicable state and federal regulations.
- **Health and Safety Plan:** addresses Occupational Safety and Health Administration (OSHA) requirements.
- **Fire Protection Plan:** outlines responsibilities, notification procedures, fire prevention and precaution measures, initial response procedures, and post-fire rehabilitation strategies related to the Project; and identifies fire suppression equipment at the facility.
- **Integrated Weed Management Plan:** addresses weed management for the Project, including herbicide application protocols for control of invasive plant species and noxious weeds.
- **Traffic Management Plan:** addresses Project-related traffic and procedures for minimizing impacts to regional traffic.
- **Stormwater Pollution Prevention Plan (SWPPP):** if applicable, prepared in compliance with Arizona regulations.
- **Worker Environmental Awareness Program:** addresses worker trainer, awareness, compliance monitoring, environmental inspection, and reporting procedures for protection of natural and physical resources during project implementation.
- **Site Rehabilitation and Restoration Plan:** outlines the measures that would be taken to conserve, protect, salvage, restore, and/or mitigate for impacts to natural vegetation and soils from the construction and operation of the Project.

The Applicant would develop additional plans, as appropriate. Alternative designs, design features, and mitigation measures developed during the NEPA process would be incorporated in the final plan of development (POD) as part of the BLM decision package.

2.4.1 Lands and Realty

The Project area would encompass Sections 4, 5, and 6, Township 27N, Range 20W and Sections 20, 21, 22, 28, and 29, Township 28N, Range 20W. The Project area encompasses primarily undeveloped BLM-administered lands including a portion of NextEra's Mohave Wind Farm Project. The BLM will not authorize any use that would conflict with the rights held by NextEra. The Project's design would incorporate shared access roads and other ancillary facilities if at all possible. The 4,300-acre solar facility including the gen-tie lines would be developed entirely on lands administered by the BLM KFO.

Additionally, four authorized ROWs occur within and adjacent to the Project area (BLM 2023). Notifications would be provided to individuals or other parties that may be affected by the Project, including existing BLM ROW authorization holders to inform them that an application that might affect their existing ROW has been filed and request their comments, pursuant to 43 Code of Federal Regulations (CFR) 2807.14.

2.4.2 Specially Designated Areas and Lands with Wilderness Characteristics

Special management areas are those lands that are managed for specific conservation, preservation, or recreational uses, and are typically public lands managed by the BLM or other federal, state, and local governmental entities. Specially designated areas include National Monuments, Lands with Wilderness Characteristics (LWC) Areas, National Conservation Areas, Areas of Critical Environmental Concern (ACECs), Wilderness Areas, and Wilderness Study Areas. There are no known LWC or designated wilderness areas in or adjacent to the Project area. The nearest ACEC is the Black Mountains Ecosystem Management ACEC approximately 6 miles southwest of the Project area.
The nearest wilderness area is Mount Wilson approximately 11 miles north of the Project area.

2.4.3 Rangeland Resource – Grazing

The Project area is located within portions of the Big Ranch Unit A (00007) and Big Ranch Unit B (00081) grazing allotments. The Project area extends across approximately 3,390 acres of the Big Ranch Unit A grazing allotment, which represents 2 percent of the total allotment acreage (173,347.69 acres). The Project area extends across approximately 865 acres of the Big Ranch Unit B grazing allotment, which represents 0.2 percent of the total allotment acreage (442,637.92 acres). Based on the Final Environmental Assessment for Big Ranch Unit A, Big Ranch Unit B, Gold Basin Allotments Grazing Permit Renewals (BLM 2020) Big Ranch Unit A is a perennial allotment that is permitted for year-long use and a total of 2,966 animal unit months (AUMs) and Big Ranch Unit B is an ephemeral allotment where use may be licensed when the potential for sufficient ephemeral forage is present.

Depending upon final facility design and configuration and potential changes to existing and new access roads, there may be some amount of reduction in AUMs and potential for reduced access. During the NEPA process, a detailed analysis of impacts on rangeland resources and grazing use would be conducted and measures to avoid, minimize and/or mitigate adverse impacts would be considered. Measures to be considered would include, but are not limited to, maintenance or relocation of range improvements and fencing, access to water and water rights, and traffic management.

As required by the BLM's grazing regulations, the BLM would notify permittees at least two years in advance of any proposed agency change in the allotment and discuss potential reimbursement of the permittee's interest in any range improvements that may be lost through the Project implementation. However, permittees may waive the two-year notification requirement and come to an alternate

agreement or other terms with the BLM. The Applicant intends to engage with the BLM and the affected grazing permittees early in the variance and/or NEPA process, as applicable, to better understand how the Project may be designed to avoid or minimize impacts and what mitigation, if any, may be acceptable to the permittee.

2.4.4 Wild Horses and Burros

There are no wild horse and burro Herd Areas (HA)/Herd Management Areas (HMA) within the Project area and there are no known populations of wild horses or burros within the Project area. The nearest HMA is the Black Mountain HMA which is 2 miles west of the Project area.

2.4.5 Wildland Fire

If required by the BLM, a Fire Protection Plan would be developed and would outline responsibilities, notification procedures, fire prevention measures and precautions, fire suppression equipment, initial response procedures, and post-fire rehabilitation strategies related to the Project. The goal of the plan would be to minimize the risk of Project-related fires and, in the event of a fire, provide for immediate fire suppression within the construction area. All reported wildfire ignitions on BLM Colorado River District Office lands go through the Prescott Dispatch Center, a service organization that provides interagency support to incident management for fire and non-fire activities. Should a ROW be granted it would be subject to the BLM's standard stipulations for fire prevention. An Integrated Vegetation Management approach uses a variety of methods to discourage or prevent the establishment of incompatible vegetation that may pose increased fire or other safety hazards in the ROW. This approach would be documented in the "Integrated Vegetation Management Plan" that would be prepared for the Project prior to construction.

2.4.6 Public Access and Recreation

The approximately 10.9 miles of existing, publicly accessible roads on BLM lands (BLM 2018) that provide access to the Project area would not be closed to public use under the Project. Based on the Draft Environmental Assessment for the KFO Travel Management Plan (TMP), of these 10.9 miles of roads, approximately 9.8 miles would remain open for public access (BLM 2018). The current state of these existing roads within the Project vicinity are graded dirt roadways. There are no primary public roads located through the Project area. The final Project design would identify any roadways that may be impacted. Coordination would occur between the BLM and impacted parties during the NEPA process to identify alternative routes or means to allow continued use of existing routes during construction and O&M of the Project, if needed.

There are no BLM-designated Recreation Management Areas (Special Recreation Management Area or Extensive Recreation Management Area) or known recreation facilities, such as trails or campgrounds, known to occur within or immediately adjacent to the Project area. The Project area is open to recreational use by the public. There are opportunities for dispersed recreation activities, such as hiking, hunting, mountain biking, and OHV use throughout the KFO area and the lands administered by the BLM are managed to provide a wide range of quality recreation opportunities.

2.4.7 Military and Civilian Aviation

The Kingman Airport is the nearest airport to the Project area, located approximately 42.8 miles to the southeast. The Applicant would coordinate with the BLM, military personnel, Federal Aviation Administration (FAA), and civilian airspace managers early in the project planning process if there may be a potential conflict with overhead airspace uses. None of the proposed structures constructed for the Project would exceed 200 feet in height, which is the limit above which the FAA is required to determine whether the proposed structures would pose a hazard to the airspace, and as such would not pose a safety hazard to military or civilian flights due to height. Additionally, a review of the FAA Notice Criteria

Tool for the Project area indicates that the Project does not meet FAA notification criteria (CFR Title 14 Part 77.9).

2.4.8 Soil Resources and Geologic Hazards

The Farmland Protection Policy Act (FPPA) is intended to minimize the impact of federal programs on the unnecessary and irreversible conversion of farmland to nonagricultural uses. For the purposes of the FPPA, farmland includes prime farmland, unique farmland, and farmland of statewide or local importance. Farmland does not have to be currently used for cropland to be subject to FPPA requirements. It can also be forest land, pastureland, cropland, or other land, but not open water or urban developed land. Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops (United States Department of Agriculture [USDA] 2023).

The Project area consists of seven different soil types including Arizo-Detrital-Nickel complex (approximately 1,927.5 acres), Arizo-Riverwash complex (approximately 229.2 acres), Gotchell-Sunstroke complex (approximately 352.6 acres), Nickel-Skelon family-Detrital complex (approximately 134.6 acres), Skelon-Pinaleno families complex (approximately 16.7acres), Storybook very gravelly loam (1,584.8 acres), and Tumarion-Nickel family complex (10.5 acres). None of the soils within the Project area are designated as prime or unique.

The Project would not cross any geologic hazards, including active fault lines or earth fissures and no earthquakes or landslides have occurred within the Project area (Arizona Geological Survey 2023).

The Applicant would prepare a Site Rehabilitation and Restoration Plan to document the erosion and dust-control measures. This may include soil-stabilization measures to prevent soil from being eroded by stormwater runoff, establishing temporary laydown areas on level ground, avoiding blading in laydown areas, and minimizing and controlling dust generated during construction by applying water and/or BLM-approved palliatives. In addition, part of the SWPPP would include an erosion and sediment control plan and dust abatement plan, if applicable. Prior to construction, geotechnical surveys would be conducted to provide information for foundation designs and gen-tie structures. The geotechnical studies would allow for observations of subsurface conditions and soil samples would be obtained for laboratory testing and soil classification. Results of the analysis would help inform several design-related parameters including cement types and corrosion protection of foundation elements.

2.4.9 Mineral Resources

According to the ADEQ Arizona Oil and Gas Conservation Commission (AZOGCC), there are no gas or oil wells in the Project area (AZOGCC 2023). According to current BLM data, there are no active mining claims in the Project area (BLM 2023). The Project Area is not in a mining district and there are no active mining sites in the Project area. The Applicant would work with the BLM to identify potential impacts on any existing mineral development activities.

2.4.10 Water Resources

Based on data from the National Hydrography Dataset and Arizona Department of Environmental Quality (ADEQ) water quality ratings, the Project area does not cross any perennial waters but crosses a total of 11.6 miles of unnamed intermittent and ephemeral waters. The Project would avoid the intermittent and ephemeral drainages to the extent possible, as depicted in the preliminary conceptual design in Appendix A, but some impacts are anticipated from installing the solar facilities and access roads. The Project area is not located within ¼-mile of any Impaired or Non-Attaining Waters on ADEQ's 2020-2022 Integrated 305(b) Assessment and 303(d) Listing Report or any Outstanding Arizona Waters. The entire Project area is located in the 500-year Federal Emergency Management Agency (FEMA) floodplain (Zone X).

2.4.10.1 Clean Water Act/Section 404 Compliance

The United States Army Corps of Engineers (USACE) is responsible for regulating compliance with Section 404 of the Clean Water Act (CWA) concerning potential impacts to Waters of the United States (WOTUS). The USACE regulates activities that discharge dredged or fill materials into jurisdictional WOTUS and issues permits for these discharges under Section 404 of the CWA. The Applicant would prepare and submit a Preliminary Jurisdictional Delineation (PJD) for the Project area. The results of the PJD would be used to review the level of encroachment into potential WOTUS by the Project and to assess the Section 404 permitting necessary for Project activities. Should a Section 404 permit be needed, it is anticipated that a Nationwide Permit (NWP) No. 12 (Utility Line Activities), NWP No. 14 (Linear Transportation projects), or NWP No. 51 (Land-Based Renewable Energy Generation Facilities) would be used. Under all three permits, a pre-construction notification would be required for impacts greater than 0.1 acres and less than 0.5 acres. If impacts to WOTUS exceed 0.5 acres, an Individual Permit would need to be prepared and submitted to the USACE.

2.4.10.2 Clean Water Act/Section 401 and 402 Compliance

The ADEQ provides Section 401 Water Quality Certification under the CWA for discharges within WOTUS for all nontribal lands in Arizona. Section 401 Water Quality Certification for the Project would be conditionally certified by ADEQ under the Corps NWP; therefore, individual certification would not be required. Construction projects that disturb more than 1 acre of land require an Arizona Pollutant Discharge Elimination System (AZPDES) Construction General Permit (AZG2020-001) and development of a SWPPP. Because the Project would disturb more than 1 acre of land, the Applicant would prepare a Construction General Permit and SWPPP for submittal to ADEQ. The SWPPP would be completed before filing a Notice of Intent with ADEQ, which is required before beginning construction activities.

2.4.10.3 Groundwater

The Project would require up to 200 acre-feet (AF) of water during the approximate 24-month construction period and up to approximately 2 AF per year for O&M activities. It is anticipated that water will be sourced commercially via trucks. Water would be purchased from a commercial source or a user with an existing appropriation. It would then be trucked to the Project site where it would be stored in an on-site water storage tank. Applicable permits would be obtained if commercial water purchase is not available.

2.4.11 Ecological Resources

A preliminary assessment of the ecological resources that could occur in the Project area was conducted, and the results are below. A cursory site visit was conducted on February 7, 2023, to observe plant and wildlife species present within the Project area and obtain information on the habitat characteristics of the site. A list of the species observed can be found in Appendix B. Should the Project progress to NEPA evaluation, relevant resource surveys (e.g., wildlife and plant surveys) and a detailed analysis of impacts on ecological resources would be conducted, applicable design features from the Solar PEIS ROD (BLM and DOE 2012) and Kingman Resource Area RMP (BLM 1993) would be considered, and additional resource- or species-specific BMPs and conservation measures would be incorporated.

2.4.11.1 Wildlife

Wildlife species observed within the Project area during the site visit conducted by Logan Simpson on February 7, 2023, are listed in Appendix B. Other common wildlife species that may occur in the Project area include birds such as the mourning dove (*Zenaida macroura*), Gambel's quail (*Callipepla gambelii*), and red-tailed hawk (*Buteo jamaicensis*); mammals such as Harris' antelope squirrel (*Ammospermophilus harrisii*), javelina (*Pecari tajacu*), mule deer (*Odocoileus hemionus*), and grey fox (*Urocyon cinereoargenteus*); and reptiles such as the western whiptail (*Aspidoscelis tigris*), coachwhip (*Masticophis flagellum*), and long-nosed leopard lizard (*Gambelia wislizenii*).

2.4.11.2 Threatened and Endangered Species

The United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) decision support system was accessed on February 9, 2023 (project Code 2023-0011654). The IPaC system returned a list of federally listed threatened, endangered, proposed, and candidate species protected under the Endangered Species Act (ESA) that have the potential to occur within the Project area based on existing records of the species in the same geographic vicinity. Table 2-1 provides habitat requirements and current distribution information for each of the species on the list along with an evaluation of the potential occurrence of each species in the Project area. There are no designated or proposed critical habitats in the Project area.

Table 2-1. Threatened and Endangered Species and Potential to Occur in the Project Area

Species Name	Status[a]	Habitat Requirements	Potential to Occur
Invertebrates			
Monarch butterfly (*Danaus plexxipus*)	ESA C	In Arizona, frequently occurs near sources of water (rivers, creeks, roadside ditches, irrigated gardens) with an abundance of nectar and milkweed resources at variable elevations.	No suitable (i.e., perennial sources of water or abundant nectar and milkweed resources) habitat present. Species is not likely to occur.
Reptiles			
Northern Mexican gartersnake (*Thamnophis eques megalops*)	ESA LT	Cienegas, stock tanks, large-river riparian woodlands and forests, and streamside gallery forests from 130 to 8,500 feet in elevation.	No suitable (i.e., stream or wetland) habitat present. Species is not likely to occur.
Birds			
California least tern (*Coccyzus americanus*)	ESA LE SGCN	Open, bare, or sparsely vegetated sand, sandbars, gravel pits, or exposed flats along shorelines of inland rivers, lakes, reservoirs, or drainage systems at elevations below 2,000 feet. Breeding occasionally documented in Arizona; migrants may occur more frequently.	No suitable (i.e., sandbars, gravel pits, or shorelines) habitat present. Species is not likely to occur.

Species Name	Status[a]	Habitat Requirements	Potential to Occur
Yellow-billed cuckoo (*Coccyzus americanus*)	ESA LT	Large blocks of riparian woodlands (cottonwood and willow galleries) below 6,500 feet in elevation. Recent surveys conducted in southeastern Arizona (south of the Gila River) have also documented yellow-billed cuckoos breeding in "atypical" habitats such as along ephemeral and intermittent drainages, and in encinal (oak-dominated) habitats in upland areas.	No suitable (i.e., riparian woodlands or xeric forests) habitat present. Species is not likely to occur.

Table Source: USFWS 2023.
Table Notes: [a]Status definitions: C = Candidate for Listing, ESA = Endangered Species Act, LE = Listed Endangered, LT = Listed Threatened, SGCN = Species of Greatest Conservation Need (as identified in AGFD's 2012 State Wildlife Action Plan

2.4.11.3 Special Status Species

The AGFD On-line Environmental Review Tool was queried on February 9, 2023, to obtain a list of special status species that have been documented in the vicinity of the Project area (event code HGIS-17543). Table 2-2 lists the species that have been documented within 2 miles of the Project area by the AGFD and also includes species listed as BLM sensitive species that may occur within the Project area.

Table 2-2. Special Status Species Documented within Five Miles of the Project Area

Common Name	Scientific Name	Status
Golden eagle	*Aquila chrysaetos*	BLM S SGCN
Echinocereus Hedgehog Cactus	*Echinocereus engelmannii*	SR
Sonoran desert tortoise	*Gopherus morafkai*	BLM S SGCN
Gila monster	*Heloderma suspectum*	SGCN
Rosy boa	*Lichanura roseofusca*	SGCN
New Mexico prickly pear	*Opuntia phaeacantha*	SR

Table Source: AGFD 2023
Table Notes: [a] Status definitions: SGCN - Species of Greatest Conservation Need (as identified in the AGFD's 2012 State Wildlife Action Plan); SR - Salvage Restricted (protected under the Arizona Native Plant Law); BLM S – Bureau of Land Management Sensitive species

2.4.11.4 BLM Sensitive Species

The special status species listed in Table 2-2 and the BLM species list for Colorado River District were reviewed to determine whether any species designated as BLM Sensitive Species may occur within the Project area. In addition, coordination with the BLM KFO Wildlife Biologist (Joelle Acton) was conducted to address BLM biological resource concerns for the Project.

The Sonoran desert tortoise may occur in the Project vicinity. The Sonoran desert tortoise is a BLM-designated Sensitive species that is managed under a multi-agency Candidate Conservation Agreement (CCA). Under the CCA, appropriate conservation measures are implemented on a project-by-project basis to help ensure the current and future viability of Sonoran desert tortoise populations.

The Joshua tree (*Yucca brevifolia*) is currently listed as a BLM-designated Sensitive species. Logan Simpson conducted a general site assessment and documented multiple individuals within the Project area (see Appendix B).

The Project would be under the authority of the BLM Colorado River District, and the potential presence of other BLM-designated sensitive species would be evaluated through coordination with the BLM and onsite surveys conducted at optimal times when wildlife would be present during the pre-NEPA resource studies and survey phase.

2.4.11.5 Noxious and Invasive Species

The introduction and spread of noxious weeds and invasive plant species would be by implementing an Integrated Vegetation Management Plan. Initial measures in the plan would include cleaning large vehicles and equipment before mobilizing to the construction site; using weed-free gravel, aggregate, and fill; and employing weed control measures, where applicable, such as herbicide application and manual treatments. Herbicide application would only be conducted following BLM review and approval of a Pesticide Use Proposal.

2.4.12 Air Quality and Climate

National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment are set by the U.S. Environmental Protection Agency (EPA). Sources of particulate matter, 10 micrometers and smaller (PM_{10}) and particulate matter, 2.5 micrometers and smaller ($PM_{2.5}$) include dust suspension through ground-disturbing activities, road dust from vehicles, and emissions from internal combustion engines. The EPA defines attainment areas as geographic areas that meet or exceed the NAAQS. Nonattainment areas refer to areas that do not meet this standard (EPA 2023b). The main pollutant of concern for the Project would be fugitive dust from construction activity (PM_{10} and $PM_{2.5}$). There are currently no nonattainment areas in Mohave County for any criteria pollutants.

2.4.13 Visual Resources

The term “visual resources” refers to the composite of basic terrain, geologic, and hydrologic features; vegetative patterns; and built features that influence the visual appeal of a landscape. Visual impacts are defined as the change to the visual environment resulting from the introduction of modifications to the landscape. The Project area lies within the Basin and Range physiographic province, which is characterized by steep, narrow, isolated mountain ranges—generally on a north-south axis—separated by wide, flat, sediment-filled valleys or basins (EPA 2013).

The Project area is located in the Detrital Valley between the White Hills and the Black Mountains in the Mojave Desert. The ground consists primarily of tan, light brown, and orange sands and rocks incised by several small- to moderate-sized drainages that run off the White Hills landforms from the east. The vegetation is made up predominantly of mid-height, olive-green creosote bush, intermixed with white bursage, cholla cacti, short grasses, and scattered taller trees.

The notable natural features within and surrounding the Project area include the White Hills to the east and the Black Mountains to the west/southwest. The surrounding landforms and mountain ranges are rugged with hard, angular, and predominantly pyramidal shapes consisting of dark greys, blacks, browns, and reds. The built environment consists of scattered residences throughout the Detrital Valley. Other built features include US 93 which runs directly adjacent to the Project area to the west.

The BLM uses the Visual Resource Management (VRM) System to classify and manage visual resources on lands under its jurisdiction. The VRM System involves inventorying scenic values, establishing management objectives for those values through the resource management planning process, and evaluating proposed activities to determine conformance to management objectives (BLM 1984). The BLM's VRM System incorporates scenic quality, viewer sensitivity, and visual distance zones to identify overall visual resource inventory (VRI) classes. These classes (I, II, III, and IV) represent the relative value of the existing visual landscape, as well as the visual resource baseline from which to measure impacts that a project may have on these values.

In its planning process, the BLM weighs visual and competing resource values to allocate the VRM classes with associated management class objectives for a given area's visual setting. There are approximately 4,300 acres of BLM-administered lands within the Project area, the entirety of which are managed as VRM Class IV. The objective of VRM Class IV allows for major modification of the landscape character and includes areas where changes may subordinate the original composition and character. As outlined in the 1995 Kingman Resource Area RMP and ROD, these changes should, however, reflect what could be a natural occurrence on the landscape (BLM, 1995) and therefore design features and best management practices would be incorporated into the Project. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

Potential visual impacts from the Project would depend on an analysis of visual dominance, scale, and contrast to determine the degree of attention the Project would attract and to assess the relative change in character as compared to the existing characteristic landscape and its inherent scenic quality. The amount of visual contrast created is directly related to the amount of attention that is drawn to a feature in the landscape and, consequently, the visual impacts.

The analysis component of the BLM's VRM process involves assessing and disclosing the potential visual impacts from proposed activities (NEPA compliance), followed by determining whether such impacts would meet the management objectives established for the area (plan conformance). The Project-level approach would analyze the potential impacts to visual resources from the construction, O&M, and decommissioning of the Project and alternatives following three primary steps:

1. Establishing existing visual character and inherent scenic quality and identifying locations where people commonly view the landscape,
2. Assessing the change to the landscape and the effects on views from these key observation points, and
3. Determining compliance with resource management objectives.

Design features would be identified and incorporated during the NEPA process and detailed visual analysis, as applicable. Generally, these design features would include siting and designing the solar facility to minimize glint, glare, and night-sky effects; designing the Project to reduce visual dominance in the viewshed and VRM class objectives compliance; maintaining visual resource design elements during O&M; and minimizing visual contrast associated with reclamation and decommissioning of the Project.

2.4.14 Noise

The Project area would be positioned in a location that would predominantly isolate the solar facility from sensitive noise receptors. The preliminary conceptual design has identified design and construction setbacks from all existing structures within the Project area (refer to Appendix A). Outside the Project area, the nearest residences are located approximately 0.1 miles to the south in White Hills.

During construction, noise would be generated by the equipment used for grading, equipment installation, and rehabilitation of temporarily disturbed areas. Noise from these activities would continuously rise and fall based on the specific activity being completed, though most noise impacts would be limited to the construction phase when earthwork is taking place. During O&M, the Project would generate low levels of noise. The Applicant would work with the BLM to assess and minimize the Project's noise impacts if sensitive noise receptors exist in the Project area, which could include siting and design of solar facilities, structures, roads, and other project elements to minimize impacts.

2.4.15 Paleontological Resources

The BLM's Potential Fossil Yield Classification (PFYC) database was examined to determine if geologic units in the Project area have potential to contain fossils of scientific interest. The PFYC system is ranked from Class 1 (very low potential) to Class 5 (very high potential). Approximately 95 percent of the Project area has an unknown PFYC rating. The remaining areas include PFYC Class 1 (very low potential). Thus, the initial desktop analysis of the Project area did not identify any critical paleontological resources. If required by the BLM KFO, a paleontological clearance survey would be completed by a permitted paleontologist.

2.4.16 Cultural Resources

The Project involves federal land and permitting and thus constitutes a federal undertaking pursuant to 36 CFR § 800.16(y). As such, it is subject to compliance with Section 106 (54 United States Code [USC] § 306108) of the National Historic Preservation Act (NHPA) (54 USC § 300301, *et seq*.) and its implementing regulations (36 CFR Part 800). The BLM is the lead federal agency responsible for Section 106 compliance. Consultation with the SHPO would be required in compliance with Section 106 of the NHPA. Cultural resource impacts and mitigation would be determined during the NEPA process.

2.4.16.1 Cultural Resources Literature Review

A cultural resources literature review was conducted in November 2022, which involved a records search for previous archaeological investigations and previously recorded cultural properties within the cultural resource study area. The cultural resource study area encompasses approximately 4,300 acres. Relevant records were examined from the National Register Information System (NRIS), an online database of properties that have been listed on the National Register of Historic Places (NRHP); AZSITE, an online database of cultural resources in Arizona; Arizona State Museum (ASM) Archaeological Records Office (ARO) survey and site records; and records on file at the BLM KFO. Historical documents such as General Land Office (GLO) and United States Geological Survey (USGS) maps were also evaluated for potentially undocumented cultural properties.

The cultural resources literature review found approximately 2,471 acres of the Project area (15 percent) and 512 acres of the cultural resource study area has been previously surveyed for cultural resources. Only one project in the Project area (2011-195.ASM) was conducted using modern survey standards and techniques, per the *SHPO Position on Relying on Old Archaeological Survey Data* (SHPO Guidance Point No. 5). However, this project is more than 10 years old, and the cultural resource study area is situated on an active alluvial fan. There is potential for newly exposed prehistoric-age cultural resources in the study area as well as historic-age sites that that were not 50 years old when the last survey was completed. Effectively, none of the cultural resource study area has been adequately evaluated for cultural resources.

Six cultural resource sites have been documented in the Project area. Of these six sites, four sites intersect the Project area. One in-use historic-age road—AZ F:3:43[ASM]/Stone's Ferry Road—traverses the cultural resource study area and has been recommended eligible for inclusion in the NRHP under Criterion D (Kirvin et al. 2011).

Although it has not been previously recommended as such, it is also likely NRHP-eligible under Criterion

A for its association with historical mining in the area (Keane and Rogge 1992). All other documented cultural resources in the study area, including three in-use historic-age roads within the APE, have been recommended not eligible for the NRHP (Kirvin et al. 2011).

2.4.17 Native American Concerns

There are no Tribal lands or individual Indian allotted lands in the Project area. However, the American Indian Religious Freedom Act of 1978 (42 USC § 1996) requires all federal agencies to consider the effect of their actions on traditional Native American religious and cultural values and practices. Traditional Cultural Properties (TCPs) are a separate class of cultural resources. They are places that have cultural values that transcend, for instance, the values of scientific importance that are normally ascribed to cultural resources such as archaeological sites and may or may not coincide with archaeological sites.

As part of the variance process, the BLM KFO will consult with Tribal authorities regarding the Project to gather comments and concerns that will be used to inform the variance report, Section 106 review, and any subsequent NEPA documentation, should the Project progress to that stage. As part of the Section 106 review and NEPA processes, the BLM KFO would consult and coordinate with Tribal entities to determine if any TCPs occur within or near the Project area and whether these TCPs would be potentially impacted by the Project.

2.4.18 Socioeconomic Impacts

If the Project is approved, the Project would be located on undeveloped BLM-administered lands. The majority of the Project is located within U.S. Census Tract 9504.03 Blocks 2114, 2115, and 2121. Table 2-3 below provides selected demographic and economic data for each of these Census Tracts, based on the American Community Survey 2021 5-Year Estimates.

The Applicant would invest approximately $500 million to construct the Project. The Project would also create employment for Arizona residents. The Project is anticipated to create an average of 300 construction jobs, during approximately 24-month construction period. These jobs would in turn support many other jobs in the Arizona economy. The Applicant would also pay a range of taxes during construction, including sales, property, payroll, and vehicle.

The facility is planned to operate for approximately 30 years. Operating and maintaining the facility would require full time employment of up to seven long-term FTE operational jobs, and spending on replacement parts, repairs, and supplies as well as variety of additional expenses from rents to taxes.

If the variance application is approved, the Applicant would coordinate with the BLM and other federal, state, and local agencies to identify and minimize potential socioeconomic impacts. A detailed analysis of the socioeconomic conditions in the vicinity of the Project and detailed effects of the Project on these conditions would be conducted during the NEPA analysis.

Table 2-3. Selected Demographic and Economic Data of the Project Vicinity

Demographic	Census Tract 9504.03
Total Population	1,831
White	89.2%
Black or African American	0.5%
American Indian or Alaska Native	1.6%
Asian	0.7%

Some Other Race	1.7%
Two or More Races	6.1%
Hispanic or Latino	0.2%
Economic	
Population (16 Years and Over)	1,639
Median Household Income	$50,777
Poverty Rate	24.3%
Unemployment Rate	19.0%

Table Source: ACS 2021a and ACS 2021b.

2.4.19 Environmental Justice Impacts

The Council on Environmental Quality (CEQ) "Guidance for Considering Environmental Justice (EJ) within the NEPA Process" (CEQ 1997) defines minorities as individual(s) who identify as American Indian or Alaska Native; Asian, Native Hawaiian or other Pacific Islander; Black or African American, not of Hispanic origin; or Hispanic or Latino (of any race). The CEQ guidance also makes clear that Indian Tribes in the affected area should also be considered in the environmental justice analysis. Minority populations are defined as occurring where the minority population of the affected area exceeds 50 percent, or the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis. Additionally, the CEQ guidance states that low-income populations should be determined using the annual poverty thresholds as defined by the Census Bureau.

Demographics and economics data used to determine environmental justice population presence was obtained from EPA's Environmental Justice Screening and Mapping Tool (EJSCREEN) (EPA 2023a). Results from the EJSCREEN tool for the Project area are provided below in Table 2-4. These demographics provide general indicators of a community's potential susceptibility and are based on U.S. Census Bureau block groups. Based on this information, the Project area is in the 56th percentile for low-income populations in the state and the 7th percentile for minority populations in the state.

If the variance application is approved, an EJ impact analysis of the Project would occur as part of the NEPA process. The Applicant would coordinate with the BLM and other federal, state, and local agencies to identify and minimize the potential for environmental justice impacts, which could include developing focused public information campaigns targeted towards low-income or minority populations and development of impact minimization measures.

Table 2-4. Demographic Index for the Project Area

Socioeconomic Indicator	USA Percentile	State Percentile
People of color	16	7
Low Income	59	56
Under Age 5	18	23
Over Age 64	86	78
Education – less than high school	63	64
Demographic Index[a]	31	24

Table Source: EPA 2023a.

Table Notes: [a]Demographic index is an EPA calculation based on the average of two socioeconomic indicators; low-income and people of color.

2.4.20 Transportation Impacts

The Project area is located east of US 93 and north of White Hills Road. The major transportation corridor in the vicinity of the Project area is US 93, which begins northwest of Wickenburg, provides access through Kingman, and continues northwest to Las Vegas. US 93 is a major regional corridor and a key element of the Arizona's principal highway freight network delivering commercial, public, and private drivers and cargo from Phoenix to Las Vegas. US 93 also connects to Interstate 40 in Kingman, the main travel route between Las Vegas and the Grand Canyon. A portion of US 93 near the Project area, between Pierce Ferry Road and Hoover Dam, has been identified as a Scenic Route in the Mohave County General Plan (Mohave County 2010). A portion of this route passes west of the Project area.

Construction of the Project is anticipated to take up to 24 months. During construction workers would commute and deliver supplies to the Project area. All Project-related vehicles would be parked onsite during construction. Temporary traffic impacts could occur on US 93 during construction. Traffic during O&M would be much less and would have no impacts on traffic on US 93. The potential for transportation impacts associated with the Project would be assessed in coordination with the BLM and other state and local agencies to identify and minimize impacts on transportation. Prior to the start of construction, the Applicant would prepare a Traffic Management Plan to address Project-related traffic and procedures for minimizing impacts to regional traffic.

The potential for transportation impacts associated with the Project construction to OHV use and other use on BLM lands within the Project area would be assessed in coordination with the BLM during the NEPA process.

2.4.21 Hazardous Materials and Waste

The solar facility would have minimal levels of materials that have been defined as hazardous under 40 CFR Part 261. The Spill Prevention and Emergency Response Plan prepared by the Applicant would address waste and hazardous materials management, including BMPs storage-related, spill response, transportation, and handling of materials and wastes. The Hazardous Materials Management Plan would address storage and disposal of any hazardous fuels including oil and fuel and would be in compliance with all applicable state and federal regulations. Stipulations within the Hazardous Materials Management Plan would be in place to notify BLM and coordinate the clean-up in the event of a release of hazardous substances or petroleum products.

2.4.22 Health and Safety

The solar facility would require all construction and operation subcontractors to operate under a health and safety program that is approved by the BLM and follows the OSHA guidelines. If the Project is authorized following variance application approval and completed NEPA analysis, a Health and Safety Plan would be developed in conjunction with the final POD prior to project implementation.

2.4.23 National Scenic and Historic Trails, Suitable Trails, and Study Trails

There are no National Scenic and Historic trails, suitable trails, or study trails within the Project area. The Old Spanish Trail is approximately 30 miles north of the Project area, in Nevada, and is the nearest designated trail. No BLM's Solar Energy Programmatic design feature implementation related to National Scenic and Historic trails, suitable trails, or study trails is anticipated at this time.

2.5 Coordination with Agencies, Tribes, State, and Local Governments

Documentation that the applicant has coordinated with state and local (county and/or municipal) governments, including consideration of consistency with officially adopted plans and policies (e.g., comprehensive land use plans, open space plans, and conservation plans) and permit requirements (e.g., special use permits).

The primary federal, state, and local government agencies involved in the environmental review and permitting of the Project are discussed below. Coordination with additional agencies and local jurisdictions may be needed as the Project progresses.

The entire Project would be developed on BLM lands. The BLM requires public outreach as part of the solar variance application process. It is required that a minimum of one public meeting be held to allow public participation. The BLM KFO plans to hold virtual public and stakeholder meetings in May 2023, to receive input on the variance application for the Project. If the variance application is approved, the Applicant would commit to regular and consistent communications with state and local authorities throughout the NEPA process.

2.5.1 Applicable Federal Agencies

2.5.1.1 Bureau of Land Management

If the variance application is approved, the BLM would be responsible for approving the lease of approximately 4,300 acres of land for the solar facility, based on preliminary designs. Under NEPA, the BLM would be the lead federal agency for the Project. The BLM would also be responsible for reviewing the application for grant of a ROW for the portion of the gen-tie line located on BLM-administered lands.

As the lead federal agency, the BLM would also be responsible for compliance with Section 106 of the NHPA, government-to-government consultation with Tribes that have an interest in the Project area, compliance with the ESA (16 USC. §§ 1531–1544, as amended), and conformance to the Kingman Resource Area RMP (BLM 1993).

2.5.1.2 U.S. Army Corps of Engineers

If the variance application is approved, the Applicant and BLM would coordinate with the USACE during the NEPA process to ensure compliance with sections 401 and 404 of the CWA.

2.5.1.3 U.S. Fish and Wildlife Service

The USFWS is responsible for the administration of the ESA. If the Project variance application is approved, a Biological Assessment would be prepared to assess the potential effects of the Project on any ESA-listed species and to determine the level of consultation with USFWS that would be required. The BLM would also invite USFWS to be a cooperating agency on the Project.

2.5.1.4 Environmental Protection Agency

The EPA has NEPA review authority for major federal actions significantly affecting the environment under Section 309 of the Clean Air Act. If the variance application is approved and the Project progress to NEPA analysis, the BLM would invite EPA to be a cooperating agency on the Project.

2.5.2 Applicable Native American Tribes

The BLM has a unique government-to-government relationship with Tribes. This relationship is founded on provisions of the U.S. Constitution, federal treaties, federal statutes, and executive orders that require the agency to consult, as part of federal undertakings, with tribes who recognize a historical, spiritual, or religious connection with or interest in a particular place or region. The BLM's government-to-government consultation with tribes is performed in compliance with Secretarial Order No. 3317, which outlines the Department of the Interior's (DOI) policy on Tribal consultation.

According to the Government-to-Government Consultation toolkit (SHPO and Salt River Pima-Maricopa Indian Community 2022), the following Tribes have requested consultation given the geographical location of the project: Colorado River Indian Tribes, Chemehuevi Indian Tribe, Fort Mojave Indian Tribe, Hopi Tribe, Hualapai Tribe, Moapa Band of Paiute Indians, Navajo Nation, Pueblo of Zuni, have requested consultation for all undertakings in this location.

2.5.3 State Government

2.5.3.1 Arizona Corporation Commission

Coordination with the Arizona Corporation Commission (ACC) and the Arizona Power Plant and Transmission Line Siting Committee would be required for the Project. If the variance application is approved, an application to build a transmission line would be filed with the ACC. Committee members would set a hearing date and provide public notice for comments. The Committee members would then vote on whether to grant or deny a "Certificate of Environmental Compatibility," which is necessary before the transmission line can be constructed. If granted, the Certificate is then forwarded to the Commission for review and action.

2.5.3.2 Arizona Department of Environmental Quality

Construction projects that disturb more than 1 acre of land require an AZPDES Construction General Permit (AZG2020-001) and development of a SWPPP. Because the Project would disturb more than 1 acre of land, the Applicant would prepare a Construction General Permit and SWPPP for submittal to ADEQ.

2.5.3.3 Arizona Department of Transportation

Coordination with the Arizona Department of Transportation (ADOT) would be carried out to, as necessary, for an encroachment permit for facilities/activities within State Highway ROWs (US 93).

2.5.3.4 Arizona Department of Water Resources

Coordination with the Arizona Department of Water Resources (ADWR) would be carried out to determine what permits are needed for the construction of a groundwater well, if necessary, to provide water for the Project (see Groundwater in Section 2.19). However, it is anticipated that water will be sourced commercially via trucks.

2.5.3.5 Arizona Game and Fish Department

Information on special status species and their potential to occur in the Project area has been obtained from the AGFD (see Ecological Resources in Section 2.4.11 and Appendix C). Coordination with AGFD would occur during the variance process, and if the variance application is approved, throughout the NEPA process as well. Additionally, the BLM would invite AGFD to be a cooperating agency on the Project.

2.5.3.6 Arizona State Historic Preservation Office

Consultation with the SHPO would be required in compliance with Section 106 of the NHPA. Cultural resource impacts and mitigation would be included in the NEPA analysis and approval process.

2.5.4 Local Government

If the variance application is approved, the Applicant would coordinate with Mohave County on any necessary procedures and/or permits that may be required. Potential permits may include a dust control permit, drainage study approval, a special use permit, a grading and/or building permit, and an encroachment permit (White Hills Road).

2.6 Financial and Technical Capability

Documentation of the financial and technical capability of the applicant, including, but not limited to, the following: 1) international or domestic experience with solar energy projects on either Federal or non-Federal lands; and 2) sufficient capitalization to carry out development, monitoring, and decommissioning, including the preliminary study phase of the project and the environmental review and clearance process.

reNRG is a renewable energy development and investment management firm. We develop high-quality, utility-scale solar energy and battery storage projects that are environmentally responsible, make good neighbors, and meet the unique needs of local communities. reNRG also offers tailored environmental, social, and governance solutions to corporations and institutional investors through renewable energy development.

2.6.1 reNRG Partners Overview

reNRG has an experienced team composed of industry leaders, each with a specific skillset critical to the development of renewable energy. reNRG leaders have successfully developed and funded in excess of 4,000 MW of solar PV projects throughout the world.

Additionally, reNRG has a technology platform that is unique in the industry. It provides detailed project management capabilities, integrated accounting, and human resources management—all customized for renewable development. It is a substantive and durable competitive advantage.

The Solar Success platform is built around Netsuite Solutions software and allows for seamless management of project timelines and budgets along with document management and accounting systems. The software harmonizes all channels of development (environmental and permitting, interconnection, real estate, offtake, etc.) into one centralized platform. This platform allows developers to see a holistic picture of each project and make development decisions appropriate at every milestone. Our experienced team, technological advantages, and flexible structure allows us to capture the most attractive opportunities in solar development and the greater renewable energy space.

2.6.2 Solar Energy Development

reNRG has a repeatable and process-driven approach to originating best-in-class projects. It all starts with our grid analytics capability, having partnered with a premier power engineering firm to have near-in-house electrical and grid engineering resources. We take two approaches to green fielding projects. Through our funneling approach we start by studying all feasible points of interconnection in a region, rigorously screening surrounding land and filtering for over 40 different environmental, build, and boundary impediments. The result is a ranked list of target properties that are ideally suited for solar development. Other times, we begin with specific parcel opportunities, oftentimes coming to us through our extensive network of large landowner partners wanting to scale off of previous successful deals.

Once we have settled on and acquired site control for a location, we oversee all aspects of development, including negotiating real estate agreements, transmission studies, interconnection agreements, regulatory approval, transmission permitting, generator permitting, and PPA approval. Throughout this entire process, we work with industry leading environmental consultants and engineers to ensure that we can construct a project without harming the surrounding area. And we leverage our experienced project managers together with our Solar Success platform to deliver best-in-class solar projects.

2.6.3 Battery Storage Development

Energy storage will play a critical role in supporting an increasingly renewable electric grid. Storage is a perfect complement to solar, charging when energy is abundant, and supplying the grid when

renewable sources go offline. We are actively pursuing opportunities in bundled solar and battery storage, as well as standalone storage using the same repeatable processes that we apply for solar development.

2.6.4 Current Projects

Our founders and partners have developed or assisted in developing over 10 GW of wind and 4 GW of solar and storage projects throughout the world before coming to reNRG. Most of these projects are in operation today. Despite its young age, our reNRG platform has yielded a diverse and robust pipeline of projects throughout the United States, thanks to the in-house experience of our members. Below is a summary of active projects in reNRG's development pipeline which contain land control and a grid interconnection position (refer to Table 2-5, Figure 2-1, and Figure 2-2).

2.6.5 Plan to Obtain an Interconnection and Power Purchase Agreement

The Applicant applied for interconnection at the existing White Hills Substation with WAPA. The Applicant is currently in preliminary discussions with multiple potential utility, corporate, and industrial offtakers. If the variance application is approved, the Applicant would begin actively bidding the Project into requests for proposals from credible potential offtakers following commencement of the NEPA process.

Table 2-5. reNRG Partners' Projects

Project Name	State	PV Capacity (MWdc)	BESS Capacity (MW)	Commercial Operation Date (expected)
Sheridan Solar Project	AR	520.0	200.0	Q2-26
Erimos 1 Solar Project	AZ	97.5	65.0	Q4-24
Erimos 2 Solar Project	AZ	97.5	65.0	Q4-24
Erimos 3 Solar Project	AZ	97.5	65.0	Q4-24
Mineral Park Solar Project	AZ	260.0	100.0	Q4-26
Holley Solar Project	AZ	97.5	65.0	Q4-24
White Hills Solar Project	AZ	585.0	450.0	Q4-25
Peacock Solar Project 1	AZ	292.5	225.0	Q4-25
Peacock Solar Project 2	AZ	292.5	225.0	Q4-25
Copper State Solar Project	AZ	97.5	65.0	Q4-24
San Rafael Solar Project	AZ	243.8	90.0	Q4-24
Golden Valley Storage Project	AZ	0.0	100.0	Q2-24
Ligonier Solar Project	IN	97.5	40.0	Q2-26
Dawson Solar Project	NC	97.4	40.0	Q2-26
Durant Solar Project	NC	390.0	150.0	Q2-26
Peebles Solar Project	OH	64.9	25.0	Q4-26
Belt Line Storage Project	OH	0.0	90.0	Q4-25
Avon Lake Storage Project	OH	0.0	200.0	Q4-25
Cheswick Storage Project	PA	0.0	300.0	Q4-25
Cleveland Solar Project	TX	234.0	90.0	Q2-26
Newton Solar Project	TX	169.0	65.0	Q2-26
Duggar Clary Solar Project	VA	260.0	100.0	Q2-26
Total		**3,994.0**	**2,815.0**	

Table Acronyms: AR – Arkansas, AZ – Arizona, BESS – battery energy storage system, IN – Indiana, MW – megawatt, MWdc – megawatt direct current, NC – North Carolina, OH – Ohio, PA – Pennsylvania, PV – photovoltaic, TX – Texas, VA – Virginia.

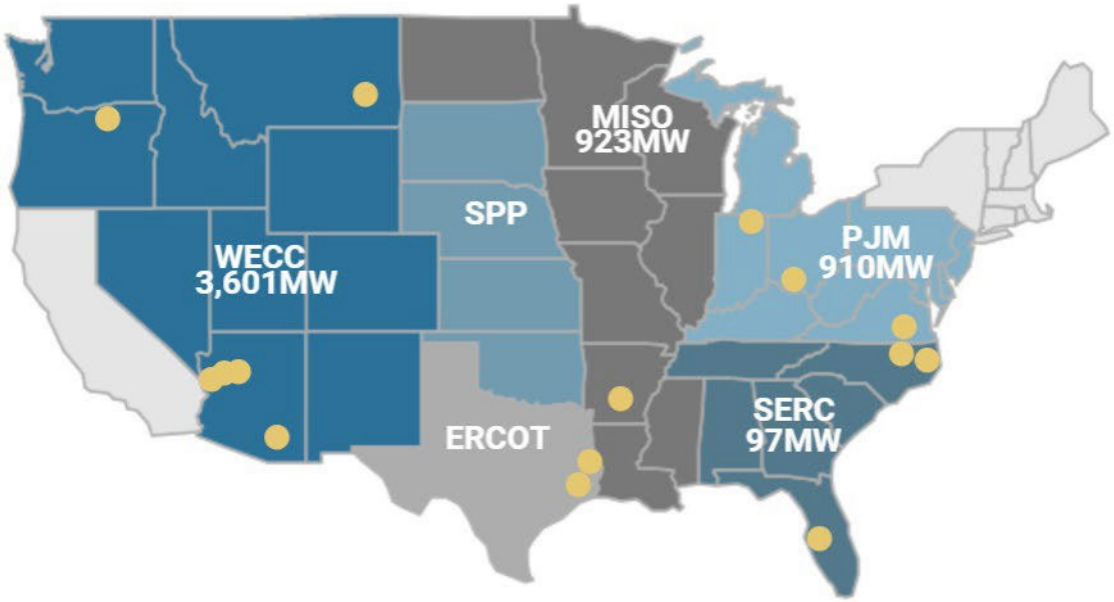


Figure 2-1. reNRG's Solar Development Pipeline

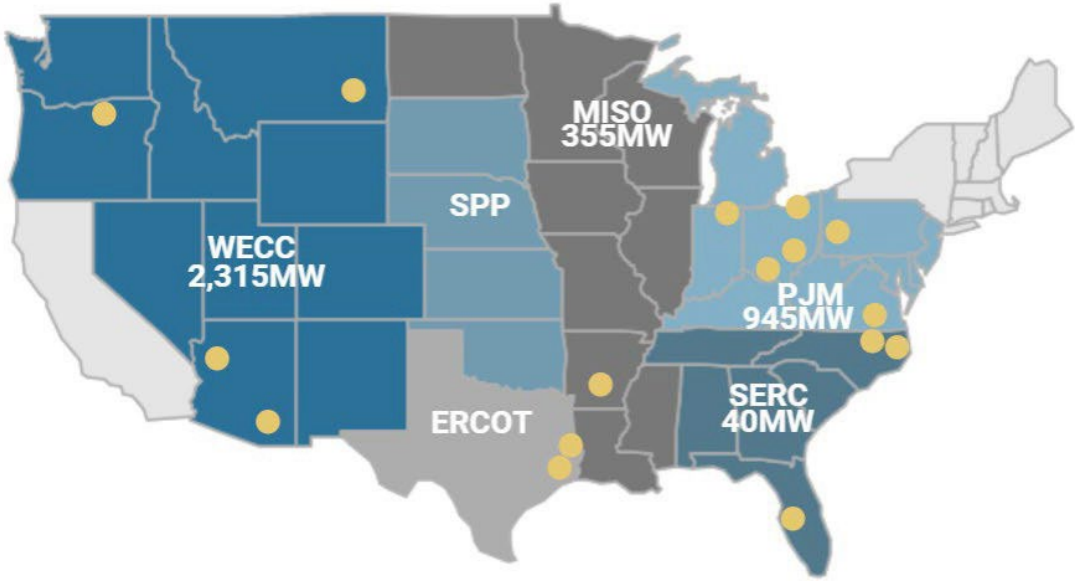


Figure 2-2. reNRG's Battery Storage Development Pipeline

2.7 Potential Resource Conflicts

Documentation that the proposed project is in an area with low or comparatively low resource conflicts and where conflicts can be resolved (as demonstrated through many of the factors that follow).

Preliminary reviews conducted for the development of the Preliminary POD and this variance factor analysis report show conflicts with resources of concern are expected to be low for the Project. Approximately 98 percent (4,227 acres) of the Project would be located within a REDA as defined in the RDEP ROD (BLM 2013b). The purpose of the RDEP was to conduct smart, statewide planning to foster environmentally responsible production of renewable energy in areas where solar and wind energy development is likely to be compatible with resource objectives. Cultural resource sites and special status species locations would be identified and, if found, avoided or mitigated as required. Vegetation management techniques including disk and roll (and to a lesser extent, grading) would be conducted only as necessary and site vegetation would be maintained to the maximum extent possible to minimize soil disturbance. The Applicant would work with the BLM and existing grazing permittees, ROW holders, and mining claimants to identify potential impacts on their respective activities and determine ways to avoid, minimize, and/or mitigate potential impacts on these individuals.

If the variance application is approved, NEPA analysis would identify any impacts that would occur as a result of the construction, O&M, and decommissioning of the Project. Compliance with BLM's Solar Energy Programmatic design features, and identification of avoidance, minimization, and/or mitigation measures proposed as part of the NEPA process would further reduce or avoid any potential resources conflicts associated with the Project.

2.8 Existing Roads

Documentation that the proposed project will optimize the use of existing roads.

The primary access road for the Project during both construction and O&M would be determined during the final design; measures to minimize overall impacts would be identified during the NEPA process t. Existing roads within the Project area would be utilized to the extent practicable to provide access for equipment, suppliers, workers, and contractors. Additional internal access roads may be required within the solar facility area to access the solar panels and associated infrastructure. The Project would be accessible via an existing 1.5-mile access road from US 93, which is also used to access the Mohave Wind Farm Project. Additional potential access to the Project site would be from White Hills Road to the south. Permits are required for any work within the state or county road ROW, such as widening, grading, fence removal or replacement, surveying, and geotechnical investigations. There would be no new roadways outside of the Project area required to access the Project facilities.

As part of the gen-tie line, a permanent 20-foot-wide gen-tie road would be constructed that would run the length of the gen-tie line. The primary access road would be a crowned, all-weather (aggregate, road base, etc.) surfaced road approximately 20 feet wide consistent with BLM road design standards for construction and O&M traffic rated at speeds of no more than 15 miles per hour. The interior maintenance roads are anticipated to be primitive, two-track roads consistent with BLM primitive road standards.

2.9 Existing Transmission Lines, Substations, and Corridors

Documentation that the proposed project will optimize the capacity of existing and new transmission infrastructure and avoid duplication in the use of or need for existing and new transmission and transmission interconnection facilities.

The Project would be located near the existing White Hills Substation. The Project location was selected in large part due to its proximity to existing substation infrastructure and designated REDA. The White Hills Substation is within the WAPA-designated corridor from Mead to Phoenix. The Applicant would be responsible for construction and maintenance of the gen-tie structures that connect to the White Hills Substation. The ROW grant from the BLM for construction, O&M, and decommissioning of the Project would be partially assigned to WAPA for construction, O&M, and decommissioning of the planned infrastructure and network upgrades.

2.10 Project Land Use

Documentation that the proposed project will make efficient use of the land considering the solar resource, the technology to be used, and the proposed project layout.

The preliminary conceptual design of the solar facility is depicted in Appendix A and was designed to maximize use of the available land for solar generation while considering existing natural landforms and manmade infrastructure. The Project has preliminarily been designed to avoid 100-year floodplains, major washes, existing roads, structures, and gas pipelines. As the Project and site designs progress, the layout of the solar arrays and associated facilities would be designed to further to avoid or minimize impacts to sensitive resources identified during field surveys and the NEPA process.

The Project would utilize modern solar PV technology, which is among the least intrusive energy generation technologies and one of the easiest to build. These aspects make it appropriate for a variety of settings, especially when implemented with applicable design features. The proposed PV technology has a high level of reliability, low maintenance, and requires very little water.

The Applicant would coordinate with NextEra on the development of the solar facility with the existing wind farm during the design of the Project. The location of solar panels and ancillary facilities would be developed to avoid any conflicts with the wind facility such as the incorporate of appropriate setbacks from the turbines. The co-location of the two renewable facilities would maximize the use of the land already developed and reduce potential adverse impacts to resources in other undisturbed lands under BLM administration.

2.11 Suitability for Solar Energy Development

If applicable, documentation that the proposed project will be located in an area identified as suitable for solar energy development in an applicable BLM land use plan or by another related process such as the California DRECP (e.g., Development Focus Areas) or Arizona Restoration Design Energy Project (e.g., Renewable Energy Development Areas).

The Solar Energy Environmental Mapper was used to identify whether the Project location is in an area identified as suitable for solar energy development. Approximately 98 percent (4,227 acres) of the Project would be located within a REDA as defined in the RDEP ROD (BLM 2013b). The Project would be located on BLM-identified lands designated as suitable for utility-scale solar through the Solar PEIS ROD (BLM and DOE 2012).

2.12 Special Circumstances

If applicable, special circumstances associated with an application such as an expansion or repowering of an existing project or unique interagency partnership.

There are no special circumstances associated with the proposed variance application.

2.13 Combining Lands

If applicable, opportunities to combine Federal and nonfederal lands for optimum siting (e.g., combining BLM-administered land with adjacent previously disturbed private lands).

The Project is entirely located on BLM-administered lands.

2.14 Contaminated or Disturbed Lands

If applicable, documentation that the proposed project will be located in, or adjacent to, previously contaminated or disturbed lands such as brownfields identified by the EPA's RE-Powering America's Land Initiative or State, local or Tribal authorities; mechanically altered lands such as mine-scarred lands and fallowed agricultural lands; idle or underutilized industrial areas; lands adjacent to urbanized areas or load centers; or areas repeatedly burned and invaded by fire-promoting non-native grasses where the probability of restoration is determined to be limited. Preference will be given to proposed projects that are located in, or adjacent to, previously contaminated or disturbed lands under the variance process, assuming all other factors are adequately considered.

The Project area is partially developed with the Mohave Wind Farm Project. A preliminary desktop review using available online resources was conducted for the Project area and vicinity. According to ADEQ eMaps tool (ADEQ 2023), there are no known hazardous waste or material sites within the vicinity of the Project.

2.15 Recreational Use/Access

Documentation that the proposed project will minimize adverse impacts on access and recreational opportunities on public lands (including hunting, fishing, and other fish- and wildlife-related activities).

The AGFD manages hunting and trapping throughout the state including areas in and around the Project Area. The Project area is located within the Arizona Game Management Unit (GMU) 15B. Wildlife species hunted within this GMU include pronghorn antelope, elk, desert bighorn sheep, mountain lion, mule deer and javelina, and upland game bird species including dove and quail.

There are no designated trail systems that traverse the Project area. There are no fishing opportunities located at the Project site. Project development is not anticipated to adversely impact recreation facilities or access to recreation on public lands. White Hills Road is the primary access route used for recreation and hunting in the Project area. The Applicant would work with the BLM during the NEPA process to assess the access routes and ensure impacts on public access are limited during construction, O&M, and decommissioning.

Based on the Draft Environmental Assessment for the KFO TMP, of these 10.9 miles of roads, approximately 9.8 miles would remain open for public access (BLM 2018). The current network of roads around and through the Project area would allow for continued access to surrounding areas, as the solar facility be designed around, and setback from, existing roads to the extent possible. Development of the Project is not anticipated to adversely impact recreation facilities or access to recreation on BLM lands.

The Project would introduce a new solar facility and associated components, which would remove these areas from use for dispersed recreation and would also be visible to recreationists on nearby lands. Access to recreational areas near the Project would not be restricted but may be temporarily affected during Project construction. These impacts are anticipated to be minor in nature, and only occur during specific phases of the Project construction. Proper signage would be in place for any public roads affected during Project construction. As necessary, alternate access would be established to ensure that the Project does not affect access to designated OHV routes or other recreational opportunities in the surrounding area.

2.16 Wildlife Habitat and Migration Corridors

Documentation that the proposed project will minimize adverse impacts on important fish and wildlife habitats and migration/movement corridors (e.g., utilizing the Western Wildlife CHAT, administered by the Western Governor's Wildlife Council and coordinating with state fish and wildlife agencies).

A discussion of fish and wildlife and potential habitats can be found in Section 2.4.11.

In 2006, the Arizona Wildlife Linkages Assessment was published which provides strategies for coordination among organizations and agencies for maintaining habitat connectivity and paved the way for detailed linkage designs at the county level (Arizona Wildlife Linkages Workgroup 2006). The AGFD's On-line Environmental Review Tool did not identify any wildlife movement areas within the Project area.

The Project is located within priority level 5 and 6 habitats under the Western Association of Fish and Wildlife Agencies CHAT, with priority level 1 representing the most intact wildlife habitat, and 6 representing the least intact wildlife habitat (WAFWA 2023) indicating that the Project area is within an area with low wildlife habitat value.

If the variance application is approved, the NEPA analysis would review potential impacts on wildlife connectivity and movement areas. The Applicant would work with the BLM, USFWS, and AGFD to evaluate options for minimizing impacts on wildlife movement.

2.17 Wilderness Values

Documentation that the proposed project will minimize impacts on lands with wilderness characteristics and the values associated with these lands (e.g., scenic values, recreation, and wildlife habitat).

According to BLM data, the Project area does not contain lands with wilderness characteristics (BLM 2022). The nearest wilderness area is Mount Wilson approximately 11 miles north of the Project area.

2.18 Surface Water Impacts

Documentation that the proposed project will be designed, constructed, and operated to optimize their specific generation technology's efficiencies with respect to water impacts.

Surface water in the Project area is transitory and only present in intermittent and ephemeral drainages after storm events. Coordination with the USACE would occur during the NEPA process to determine whether those drainages are WOTUS and to ensure the Project would comply with sections 401 and 404 of the CWA. Additionally, the Project would be designed to avoid the 100-year FEMA Floodplain to the greatest extent practicable and obtain a SWPPP during Project construction to control runoff. The choice of a PV power generation and BESS facility allows for the protection and minimization of impacts on water resources while achieving the goals of the solar facility.

2.19 Groundwater Impacts

Documentation that any groundwater withdrawal associated with a proposed project will not cause or contribute to withdrawals over the perennial yield of the basin, or cause an adverse effect on ESA-listed or other special status species or their habitats over the long term. However, where groundwater extraction may affect groundwater-dependent ecosystems, and especially within groundwater basins that have been over appropriated by state water resource agencies, an application may be acceptable if commitments are made to provide mitigation measures that will provide a net benefit to that specific groundwater resource over the duration of the project. Determination of impacts on groundwater will likely require applicants to undertake hydrological studies using available data and accepted models.

The Project area would be located within the Colorado River Basin hydrographic area which encompasses the Detrital Valley and Hualapai Valley groundwater basins. The Project area would lie entirely within the Detrital Valley groundwater basin. The Applicant estimates that 200 AF of water would be needed for construction, for uses such as soil compaction, dust control, and sanitary needs for construction workers. During O&M, water would be required for panel washing and maintenance and for workforce facilities. During operation the solar array portion of the Project would require the use of approximately 2 AF annually for panel washing and other uses.

Groundwater wells with measured yields in the Detrital Valley basin are mostly located outside the Project area near Dolan Springs and Temple Bar. Water is anticipated to be purchased from a commercial source or a user with an existing appropriation. It would then be trucked to the Project site where it would be stored in an on-site water storage tank. Should it be determined that the construction of a groundwater well is necessary, early coordination with the Arizona Department of Water Resources would occur to determine the appropriate permit that would need to be obtained by the Applicant. of impacts on groundwater would likely require the Applicant to undertake hydrological studies using available data and accepted models.

2.20 Impacts on Protected Lands (Monuments, Refuges, etc.)

Documentation that the proposed project will not adversely affect lands donated or acquired for conservation purposes, or mitigation lands identified in previously approved projects such as translocation areas for desert tortoise.

The Project would not be located within or adjacent to any designated protected lands (e.g., monuments, refuges, etc.). There are no lands donated or acquired for conservation purposes, or mitigation lands identified from previously approved projects within the vicinity of the Project.

2.21 Cumulative Impacts

Documentation that significant cumulative impacts on resources of concern should not occur as a result of the proposed project (i.e., exceedance of an established threshold such as air quality standards).

If the variance application is approved, as part of the NEPA process, cumulative impacts of the Project would be analyzed for all applicable resources.

2.22 Desert Tortoise Concerns

If applicable, documentation on evaluation of desert tortoise impacts based on the variance process protocol for desert tortoise (BLM 2015).

The variance process for desert tortoise applies to the Mojave desert tortoise (*Gopherus agassiszii*). The Project does not occur within or near suitable or occupied habitat for the Mojave desert tortoise.

2.23 Greater Sage-Grouse Concerns

If applicable, documentation on evaluation of greater sage-grouse impacts based on the variance process protocol for greater sage-grouse (BLM 2013c).

The Project area does not occur within or near any lands known to be occupied by greater sage-grouse (*Centrocercus urophasianus*) and the habitat within the Project area is not suitable for greater sage-grouse.

2.24 Potential Adverse Impacts on National Park System Resources and Values

If applicable, documentation on evaluation of impacts to National Park Service (NPS) units and other special status areas under NPS administration as defined in the variance process protocol for resources and values of units of the NPS (BLM 2019).

The Project area does not occur within or adjacent to any lands under NPS administration. Lake Mead National Recreation Area is approximately 20 miles north of the Project area.

3 BLM Coordination Meetings

3.1 First Preliminary Application Review Meeting (with Applicant/BLM)

The BLM and the Applicant met on January 17, 2023 to review the variance application for the Project. The Applicant presented slides regarding the Project details, location, and solar development considerations. The BLM discussed preliminary resource concerns and explained the proceeding steps in the variance process. The BLM and the Applicant agreed to develop the draft variance factor analysis report by February 2023, prior to the Tribal, agency, and public meetings which the BLM is planning for May 2023.

3.2 Second Preliminary Application Review Meeting (with federal and state agencies and Tribal and local governments)

As part of the variance process, the BLM will meet with federal and state agencies and Tribal and local governments regarding the variance application for the Project. These meetings are planned for May 2023, and this section will be updated following the completion of the meetings.

3.3 Public Outreach

As part of the variance process, the BLM will conduct public outreach to seek input on the Project. The public meeting is planned for May 2023, and this section will be updated following the completion of public outreach.

3.4 Tribal Consultation

As part of the variance process, the BLM will conduct Tribal consultation to seek Tribal input on the Project. Tribal consultation is ongoing, and this section will be updated following the completion of Tribal consultation. Letters were sent to the Tribes on April 7, 2023, notifying them of the proposed Project.

4 Land Use Disclosures

4.1 List of Rights-of-Way

Table 4-1 below includes the existing ROWs within the Project area, as of January 2023 (BLM 2023). If the variance application is approved, coordination with the BLM and applicable ROW holders will be ongoing as part of the NEPA process (refer to Section 2.4.1).

Table 4-1. Rights-of-Way Within Project Area

Serial Number	Case Type	Customer Name	Township, Range, Section
AZA 032315AA	ROW WIND DEV GRANT	MOHAVE COUNTY WIND FARM LLC	T28N, R20W Sections 20, 21, 28, 29
AZA 032315AA	ROW WIND DEV GRANT	NEXTERA ENERGY RENEWABLES HOLDINGS LLC	T28N, R20W Sections 20, 21, 28, 29
AZA 033512	ROW-ROADS	MOHAVE CNTY BD OF SUPVRS	T27N, R20W Section 4, 5, 6
AZA 037945	ROW-TEL & TELEG,FLPMA	CITIZENS UTILITIES RURAL CO INC	T28N, R20W Sections 21, 28, 29
AZA 038317	ROW-POWER TRANS-FLPMA	DOE WTN AREA PWR ADM	T28N, R20W Sections 20, 21, 28, 29

Table Acronyms: ADOT – Arizona Department of Transportation; FHWA – Federal Highway Administration; FLPMA – Federal Land Management and Policy Act; R – Range; ROW – Right-of-way; T - Township
Table Source: BLM 2023

4.2 List of Mining Claims

There are no active mining claims within the Project area.

4.3 List of Grazing Allotments and Permittees

Table 4-2 below includes the existing grazing allotments within the Project area, as of January 2023 (BLM 2023). If the variance application is approved, coordination with the BLM and applicable permittees will be ongoing as part of the NEPA process (refer to Section 2.4.3).

Table 4-2. Grazing Allotments Within Project Area

Allotment Name (#)	Impacted Acreage	Impacted Percentage
Big Ranch Unit A (00007)	3,390	2.0
Big Ranch Unit B (00081)	865	0.2

Table Source: BLM 2023.

4.4 List of Range Improvements

A list of range improvements within the Project area will be provided by the BLM in coordination with the grazing permittee. If the variance application is approved, coordination with the BLM and applicable permittees will be ongoing as part of the NEPA process (refer to Section 2.4.3).

5 Summary of Potential Resource Conflicts

The Project would accomplish many of the BLM and DOI energy priorities, by the development of clean/renewable energy project. Additionally, BLM and DOI priorities related to conservation, environmental justice, recreation, and Tribal coordination would not be undermined from the implementation of the Project. The primary resource conflicts that may occur relate to cultural and grazing resources.

Approximately 15 percent of the Project area has been previously surveyed for cultural resources and six sites have been identified within the Project area. Due to the small percentage of the Project area that has been surveyed for cultural resources, there are unknown numbers and densities of cultural resources present in the Project area. If the variance application is approved and the Project proceeds to the NEPA analysis, a Class III pedestrian survey would be conducted to identify all cultural resources within the Project area. The results of the survey would be used to assess the potential adverse effect of the Project on NRHP-eligible properties and whether additional archaeological investigations or treatments would be necessary in accordance with Section 106. The intent of the Applicant would be to avoid any adverse effects to any NRHP-eligible properties within the Project area.

The Project area would cross the Big Ranch Unit A and Unit B allotments. The impacts to permittees in terms of loss of AUMs is not known at this point, but the Applicant would continue coordination with the BLM to determine what impacts are anticipated and what course of action is necessary to come to a resolution for any conflicts. Additionally, the Applicant intends to engage with the BLM and the affected grazing permittees early in the variance and/or NEPA process, as applicable, to better understand how the Project may be designed to avoid or minimize impacts and what mitigation, if any, may be acceptable to the permittee.

If the variance application is approved, NEPA analysis would identify any impacts that would occur as a result of the construction, O&M, and decommissioning of the Project. Compliance with BLM's Solar Energy Programmatic design features, and identification of avoidance, minimization, and/or mitigation measures proposed as part of the NEPA process would further reduce or avoid any potential resources conflicts associated with the Project.

6 References

Arizona Department of Environmental Quality (ADEQ) eMaps. 2023. Web map. https://www.azdeq.gov/emaps. Accessed on January 24, 2023.

Arizona Game and Fish Department (AGFD). 2023. On-line Environmental Review Tool. https://azhgis2.esri.com/content/home. Accessed on February 9, 2023.

Arizona Geological Survey. 2023. Natural Hazards in Arizona Viewer. The University of Arizona. Accessed from https://uagis.maps.arcgis.com/apps/webappviewer/index.html?id=98729f76e4644f1093d1c2cd6dabb584. Accessed on February 9, 2023.

Arizona Oil and Gas Conservation Commission (AZOGCC). 2023. https://www.arcgis.com/apps/webappviewer/index.html?id=4d53e4cd05b6404f9b1ee5f067f55c04. Accessed on January 23, 2023.

Bureau of Land Management (BLM). 1993. Kingman Resource Area Proposed Resource Management Plan and Final Environmental Impact Statement. https://eplanning.blm.gov/eplanning-ui/project/95447/570. Accessed on January 11, 2023.

_____. 1995. Kingman Resource Area Resource Management Plan Record of Decision. https://eplanning.blm.gov/eplanning-ui/project/95447/570 Accessed on January 11, 2023.

_____. 2013a. Mohave Basin and Range Rapid Ecological Assessment Final Report. https://www.nrc.gov/docs/ML1521/ML15211A622.pdf. Accessed on January 24, 2023.

_____. 2013b. Renewable Arizona: Restoration Design Energy Project. Record of Decision and Approved Resource Management Plan Amendments. https://eplanning.blm.gov/public_projects/nepa/79922/107093/131007/RDEP-ROD-ARMP.pdf. Accessed on January 11, 2023.

_____. 2016. Bureau of Land Management's National Landscape Conservation System Fact Sheet. https://gis.blm.gov/EGISDownload/Docs/NLCS_Facts_6_7_16.pdf. Accessed on January 23, 2023.

_____. 2018. Kingman Field Office Travel Management Plan. Map Data. https://eplanning.blm.gov/eplanning-ui/project/89275/590. Accessed on February 11, 2023.

_____. 2019. Variance Process Protocol for Resources and Values of Units of the National Park Service. BLM Solar Energy Program. https://blmsolar.anl.gov/variance/process/factors/nps-units/. Accessed on February 6, 2023.

_____. 2022. BLM AZ Wilderness Characteristics (Polygon) GIS Data. https://gbp-blm-egis.hub.arcgis.com/datasets/BLM-EGIS::blm-az-wilderness-characteristics-polygon/about. Accessed on January 11, 2023.

_____. 2023. Email from Maria Nicoletti (BLM Lead Realty Specialist) to reNRG Partners with LR2000 report for White Hills Solar Project area. January 9, 2023.

BLM and U.S. Department of Energy (DOE). 2012. Final Programmatic Environmental Impact Statement (PEIS) for Solar Energy Development in Six Southwestern States. Report No: FES 12-14; DOE/EIS-0403. U.S. Department of the Interior, Washington, DC.

Council on Environmental Quality (CEQ). 1997. Environmental Justice Guidance Under the National Environmental Policy Act. https://ceq.doe.gov/docs/ceq-regulations-and-guidance/regs/ej/justice.pdf. Accessed on February 6, 2023.

Desert Landscape Conservation Cooperative (DLCC). 2023. Maps of Desert LCC Boundary. https://dlcc.databasin.org/maps/d670fc78a2ea494aaa3a3a540af1e906/. Accessed on January 24, 2023.

Environmental Protection Agency (EPA). (2013). Level III Ecoregions of the Continental United States (map), Revised April 2013. National Health and Environmental Effects Research Laboratory, Corvallis, Oregon, U.S. EPA. https://pubs.usgs.gov/tm/04/c03/virtual_CD/useco.pdf. Accessed on January 11, 2023.

_____. (2023a). EJSCREEN – EPA's Environmental Justice Screening and Mapping Tool (Version 2020) [Web map]. https://www.epa.gov/ejscreen/mapper Accessed January 2023.

_____. (2023b). NEPAssist [Web map]. https://nepassisttool.epa.gov/nepassist/nepamap.aspx Accessed January 2023.

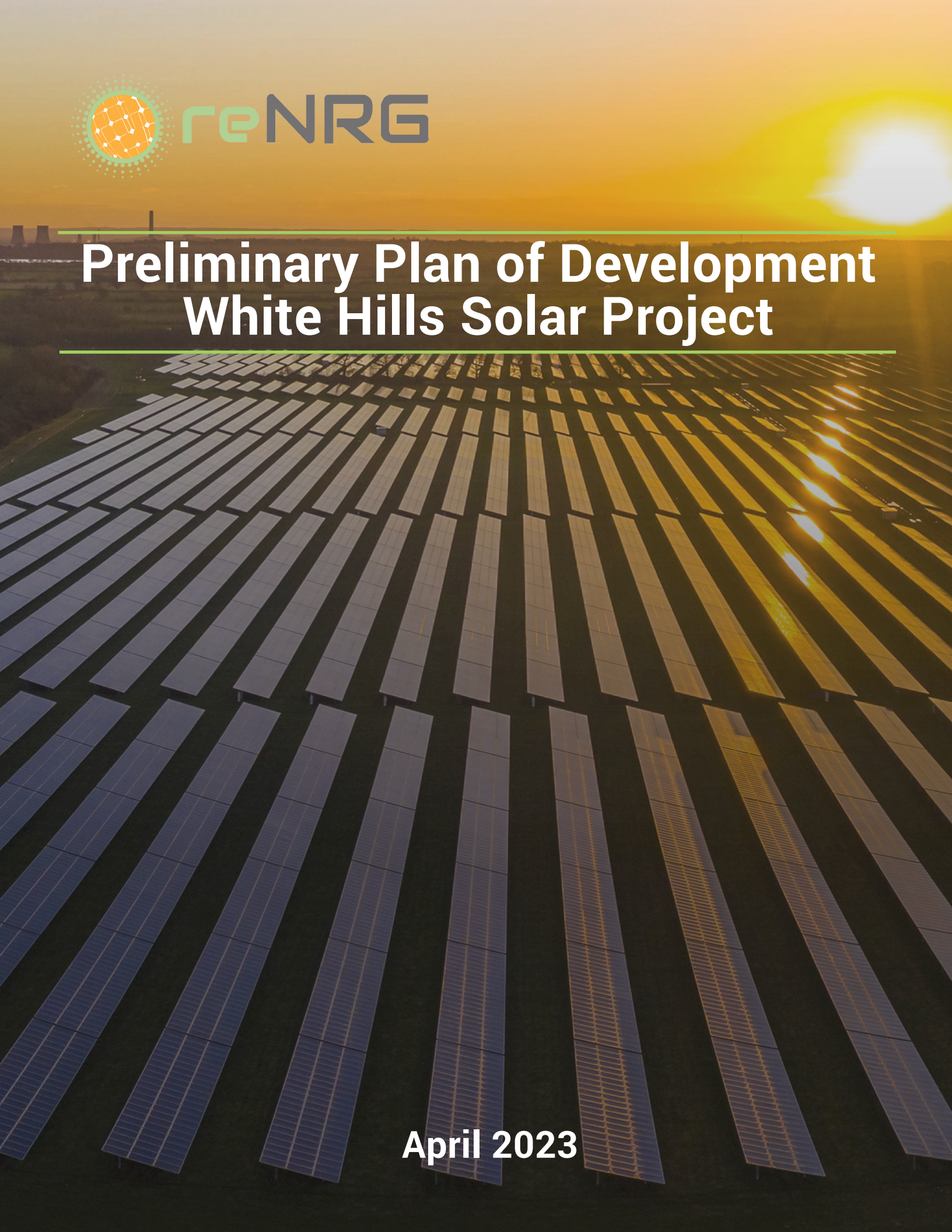
State Historic Preservation Office (SHPO) and Salt River Pima-Maricopa Indian Community. (2022). Government-to-Government Consultation Toolkit. https://sites.google.com/view/az-consultation-toolkit/home. Accessed on February 3, 2023.

U.S. Department of Agriculture (USDA) Natural Resources Conservation Service. 2023. Web Soil Survey. https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. Accessed on February 12, 2023.

United States Fish and Wildlife Service (USFWS). 2023. IPaC decision support system. http://ecos.fws.gov/ipac/. Accessed on February 9, 2023.

APPENDIX A

Preliminary Plan of Development



Preliminary Plan of Development
White Hills Solar Project

April 2023

PRELIMINARY PLAN OF DEVELOPMENT

WHITE HILLS SOLAR PROJECT

Prepared for:
Bureau of Land Management
Kingman Field Office
2755 Mission Blvd.
Kingman, AZ 86401

Prepared by:
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852 Franklin Ave Ste 212
Franklin Lakes, NJ 07417

April 2023

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ACRONYMS AND ABBREVIATIONS

AC	Alternating current
ACEC	Area of Critical Environmental Concern
ADEQ	Arizona Department of Environmental Quality
AF	Acre-feet
AGFD	Arizona Game and Fish Department
APE	Area of Potential Effect
APLIC	Avian Power Line Interaction Committee
Applicant	reNRG Partners LLC
AZPDES	Arizona Pollutant Discharge Elimination System
BE	Biological Evaluation
BESS	Battery Energy Storage System
BLM	Bureau of Land Management
BMPs	Best Management Practices
CCA	Candidate Conservation Agreement
CdTe	cadmium telluride
CFR	Code of Federal Regulations
CO	Carbon monoxide
CWA	Clean Water Act
DC	Direct current
DOE	Department of Energy
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FLPMA	Federal Land Policy and Management
FPPA	Farmland Protection Policy Act
Gal	Gallons
Gen-tie	Generation tie-line
HASP	Health and Safety Program
IPaC	Information for Planning and Consultation
KFO	Kingman Field Office
kV	Kilovolt
kVA	kilovolt-ampere
MBTA	Migratory Bird Treaty Act
MW	Megawatt
MWac	Megawatt alternating current
NAAQS	National Ambient Air Quality Standards
NCA	National Conservation Areas
NEMA	National Electric Manufacturers Association
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO_2	Nitrogen dioxide
NRHP	National Register of Historic Places
NWP	Nationwide Permit

O&M	Operations and maintenance
O_3	Ozone
OHV	Off-highway vehicle
PCSs	Power Conversion Stations
PEIS	Programmatic Environmental Impact Statement
PJD	Preliminary Jurisdictional Delineation
PM_{10}, $PM_{2.5}$	Particulate matter
PPAs	Power Purchase Agreements
Project	White Hills Solar Project
PV	photovoltaic
PVCS	Photovoltaic Combining Switchgear
RMP	Resource Management Plan
ROD	Record of Decision
ROW	Right-of-way
RPS	Renewable Portfolio Standard
S	Sensitive Species
SCADA	Supervisory Control and Data Acquisition
SDSs	Safety Data Sheets
SGCN	Species of Greatest Conservation Need
SHPO	State Historic Preservation Office
SMA	Special Management Areas
SO_2	Sulfur Dioxide
Solar PEIS	Solar Energy Development in Six Southwestern States
SPCC	Spill prevention, control, and countermeasure
SWPPP	Stormwater Pollution Prevent Plan
TCPs	Traditional cultural properties
TSDF	Treatment, storage, and disposal facility
U.S.C.	United States Code
UL	Underwriters Laboratory
UPS	Uninterruptable power supply
US	United States
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VRI	Visual Resource Inventory
VRM	Visual Resource Management
WAPA	Western Area Power Administration
WEAP	Worker Environmental Awareness Program
WMA	Wilderness Management Area
WOTUS	Water of the US
WSA	Wilderness Study Area

1.0 PROJECT DESCRIPTION

1.1 Introduction

1.1.1 Type of Facility, Planned Uses, Generation Output

reNRG Partners, LLC (Applicant) proposes to develop the White Hills Solar Project (Project), consisting of up to a nominal 450-megawatt (MW) alternating current (MWac) solar photovoltaic (PV) power generating facility and up to 450 MW co-located battery energy storage system (BESS) approximately 40 miles northwest of Kingman in Mohave County, Arizona (refer to Figure 1-1 and Figure 1-2). The Project would be constructed using photovoltaic solar modules mounted on single-axis, horizontal tracker structures along with fire-proof containerized structures housing battery modules, a control system, and a heating ventilation, and air conditioning system (HVAC).

The Project would be located on approximately 4,300 acres of lands administered by the Bureau of Land Management (BLM). The Project boundary covers a larger area than required for the solar facility to allow for adjustments in the facility layout to minimize environmental impacts based on the National Environmental Policy Act (NEPA) analysis.

The power produced by the Project would be conveyed to the Western Area Power Administration (WAPA) transmission system, specifically the Peacock – Mead 345-kilovolt (kV) line. The Applicant submitted an Interconnection Application to WAPA for 450 MWs at the existing 345-kV White Hills Substation. The right-of-way (ROW) grant from the BLM would be to construct, operate and maintain, and decommission the Project and related interconnection facilities and network upgrades.

The average annual energy production from a 450 MWac Project equates to the annual daytime electricity needs of approximately 245,000 households. Solar electric power is produced during daylight hours when electricity demand is highest which and coupled with BESS technology in order to improve the customer's energy product. The Project would generate greenhouse gas-free electricity that would offset approximately 500,000 metric tons of carbon dioxide and other emissions that would result from producing an equivalent amount of electricity from fossil fuel-fired electric generators.

1.1.2 Applicant's Schedule for the Project

Completion of the appropriate level of NEPA process is anticipated to occur in 2025. Prior to any activity on the site, required management plans would be developed and approved, and regulatory and permit conditions would be integrated into the final construction compliance documents. Project construction would begin once all applicable approvals and permits have been obtained. Construction is expected to take up to 24 months and would include the major phases of mobilization, construction grading and site preparation, installation of drainage and erosion controls, PV panel/tracker assembly, and solar facility construction. The Applicant is planning to commence construction in 2025 and the Commercial Operation Date is anticipated to occur in 2028. Once construction is completed, productive lifetime for the Project facilities would be at least 30 years, with the possibility of a subsequent repowering for additional years of operation.

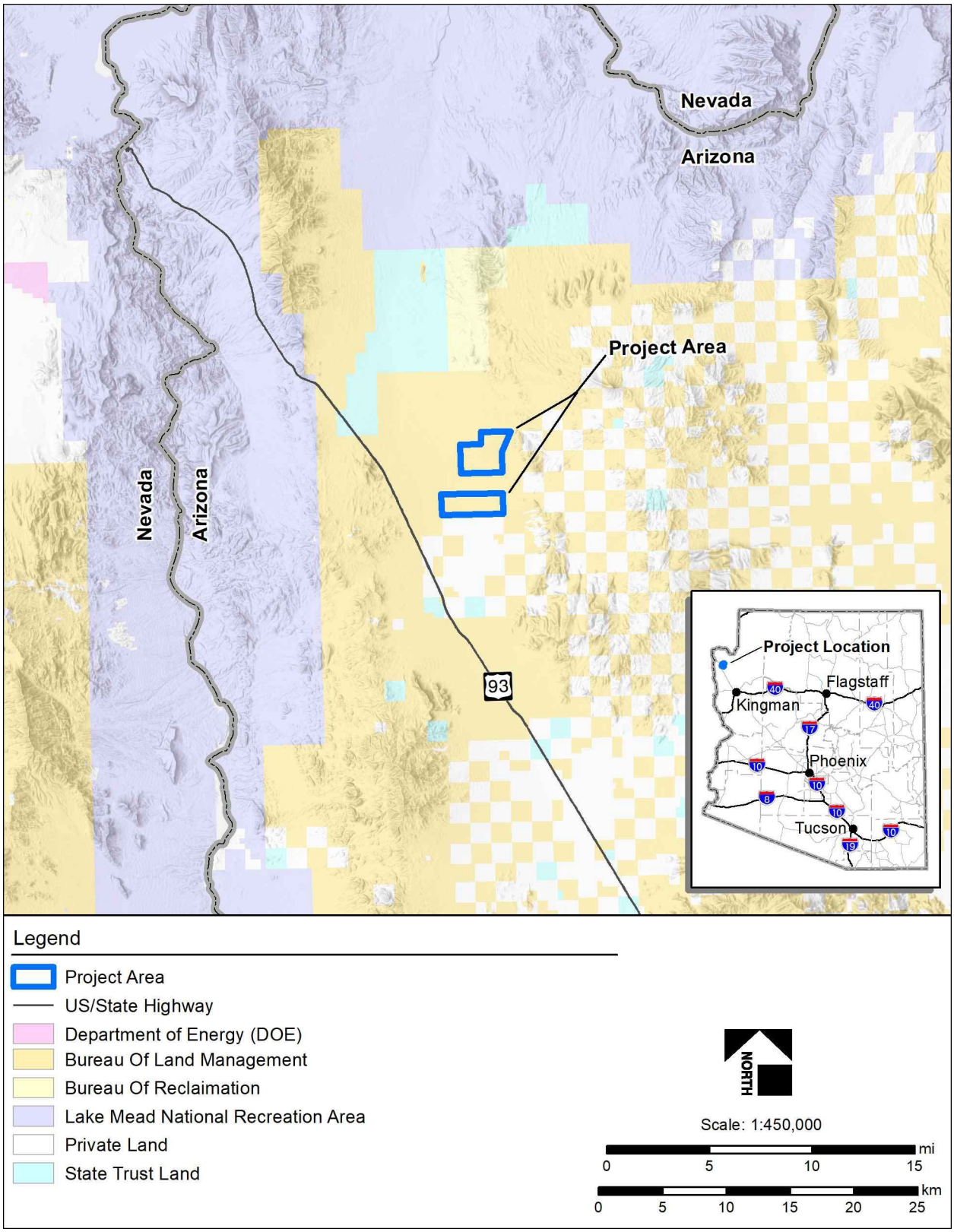


Figure 1-1. White Hills Solar Project Vicinity

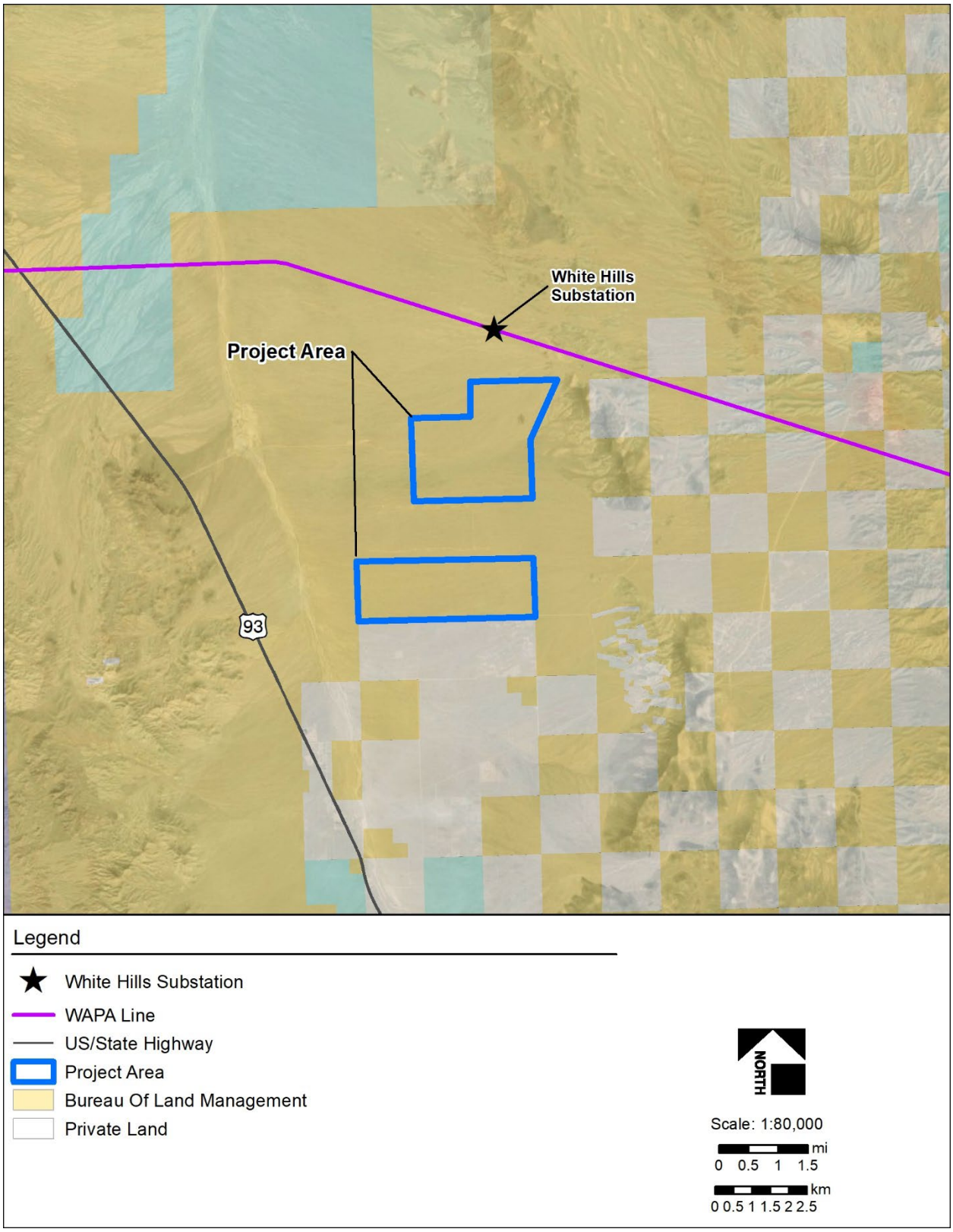


Figure 1-2. White Hills Solar Project Area

1.2 Applicant's Purpose and Need for the Project

1.2.1 Need for Renewable Energy

Arizona's Renewable Portfolio Standard (RPS) requires that 15 percent of all electricity generated in Arizona be derived from renewable sources by 2025. State government agencies were directed to take all appropriate actions to implement this target in all regulatory proceedings, including siting, permitting, and procurement for renewable energy power plants and transmission lines. Other utilities have made further announcements of phasing out their use of coal-fired generation and partially replacing that generation with renewable energy. This will create a need of nearly eight gigawatts of potential renewable energy over the next seven years. The Applicant believes that the Project will be cost competitive with electricity from other types of renewable projects throughout the country.

The federal government has enacted legislation strongly encouraging development of renewable energy. As part of an overall strategy to develop a diverse portfolio of domestic energy supplies for the future, the Energy Act of 2020 encourages various carbon management and removal programs over five years, including reauthorization of Fossil Energy Research and Development Programs at the DOE. Section 3104 of the Energy Act of 2020 requires the Secretary of the Interior to set national goals for wind, solar, and geothermal energy production on federal land and to seek to permit at least 25 GW of electricity from wind, solar, and geothermal projects by 2025.

In 2021, President Biden signed multiple Executive Orders (EOs) relating to climate change and renewable energy including EO 13990, "Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis;" EO 14008, "Tackling the Climate Crisis at Home and Abroad;" and EO 14057 which affirmed that it is the policy of the United States that the Federal Government leads by example to achieve a carbon pollution-free electricity sector by 2035 and net-zero emissions economy-wide by no later than 2050. In 2022, the Inflation Reduction Act and EO 14082, "Implementation of the Energy and Infrastructure Provisions of the Inflation Reduction Act of 2022," further progressed these initiatives by setting aside billions of dollars in grants and loans to spur financing and deployment of new clean energy projects that cut greenhouse gas emissions and other pollutants.

1.2.2 Project Purpose and Need

The purpose of the Project is to construct a clean, renewable source of solar electricity that helps meet the region's growing demand for power and helps fulfill national and state renewable energy and greenhouse gas emission goals. Solar energy provides a sustainable, renewable source of power that helps reduce fossil fuel dependence and greenhouse gas emissions. Considering the entire process, from raw material sourcing through end-of-life-cycle collection and recycling, 450 MWac of additional generating capacity would produce a small fraction of the greenhouse gas emissions of a fossil fuel plant of similar generating capacity.

Specific Project objectives are:

- Establish a solar PV power-generating facility and co-located BESS that is of sufficient size and configuration to produce approximately 450 MWac of electricity in order to provide Arizona and neighboring states a significant new source of renewable energy.
- Produce and transmit electricity at a competitive cost.
- Locate the facility in the rural part of Mohave County in proximity to an available connection to the existing electrical distribution infrastructure.
- Minimize environmental effects by:
    - Avoiding Exclusion Areas identified in the Solar PEIS ROD

    - Using existing electrical distribution facilities, ROWs, roads, and other existing infrastructure, where practicable
    - Minimizing water use during construction and operation
    - Reducing greenhouse gas emissions
- Using solar technology that is available, proven, efficient, and easily maintained, recyclable, and environmentally sound.

1.2.3 Power Market and Project Benefits

The Project would interconnect to WAPA's White Hills Substation (refer to Figure 1-2). The interconnection would allow WAPA and other utilities to purchase renewable energy generated by the Project under one or more Power Purchase Agreements (PPAs) to deliver energy from a (nominal) 450 MWac generating facility.

The Project is well suited to arid environments because of the technology's low water consumption. This is a key consideration in Arizona and the western U.S., as the population grows and water supplies become more constrained. Solar PV technology, which converts sunlight directly into electrical energy, entails no thermal process, and therefore does not require process or cooling water to produce electricity. Water consumption during operations would consist of dust control and domestic use for on-site personnel and is between 95 and 99 percent less than concentrating solar technology projects that employ conventional steam turbines to generate electricity.

The Project would also create employment for Arizona residents. The Project is anticipated to create an average of 300 construction jobs at any given time and create up to seven long-term full-time-equivalent operational jobs. These jobs would in turn support many other jobs in the Arizona economy.

1.3 General Facility Description, Design, and Operation

1.3.1 Project Location, Land Ownership, and Jurisdiction

The Project site is located approximately 40 miles northwest of the Kingman area. United States (US) Route 93 is located approximately 2 miles west of the Project site.

Approximately 4,300 acres of the proposed solar facilities are located on federal lands administered by the BLM under the Kingman Field Office (KFO) Resource Management Plan (RMP). The Project site is located within a variance area for solar power generation. The site is also within a Renewable Energy Development Area. Existing uses of the federal portions of the site are managed by the BLM in accordance with the KFO RMP.

1.3.2 Legal Land Description

The Project boundary is located in Township 27N, Range 20W and in portions of Sections 4, 5, and 6 and in Township 28N, Range 20W and in portions of Sections 20, 21, 22, 28, and 29 (refer to Figure 1-2).

1.3.3 Temporary and Permanent Disturbance

Permanent disturbance areas would include the solar array blocks, switchyard(s), BESS, administrative/ maintenance buildings, generation tie (gen-tie) structures, and roads and access ways between the solar arrays and along the gen-tie line. The Project is currently estimated to result in approximately 1,668 acres of permanent disturbance (refer to Table 1-1), which is the minimal amount of land necessary to achieve nameplate capacity. This current estimate reflects all anticipated disturbances associated with the Project to be permanent and would be further refined into separate temporary and permanent disturbance estimates as the Project design progresses.

Temporary disturbance for the solar facility would include temporary laydown and staging areas as well as the area necessary to construct the solar blocks, inverter stations, tracker posts, site access roads, switchyard(s), collector lines, administrative/ maintenance buildings, parking areas, and perimeter fence. Temporary disturbance for the gen-tie line would include laydown and work areas around each structure and access within the ROW. The final locations and sizing of temporary disturbance areas would be minimized by co-locating temporary staging areas in locations that would subsequently be developed in later construction phases. Due to the early stage of the Project design, the initial layout plan does not go into construction detail at this time. The preliminary conceptual layout is provided in Appendix A.

Table 1-1. Permanent Disturbance Areas on BLM-Administered Lands

Project Component	Permanent Disturbance (Acres)[a]
Solar Panels/Fenced Areas	1,591.7
Access Road	10.6
Internal Roads	33.0
Generation Tie Access Road	2.5
Battery Energy Storage System	25.3
Battery Energy Storage System Staging/Laydown Yard	5.1
Total	**1,668.2**

Table Notes: [a]Estimated acreage plus a 10 percent buffer. Current estimates reflect all disturbances associated with the Project as permanent and would be further refined into temporary and permanent disturbances as the Project design process progresses.

1.3.4 Project Elements

The Project would include the following primary elements (refer to Appendix A):

- Solar array blocks consisting of solar PV modules mounted on single-axis, horizontal tracker mounting systems supported by driven steel posts or other embedded foundation design.
- Direct current (DC) collection system and Power Conversion Stations (PCSs) to collect power from the array blocks.
- Overhead 34.5-kV alternating current (AC) collection system to convey electricity from the PCSs to the substation.
- BESS
- An internal roadway system consisting of spoke, ring, and perimeter roadways.
- Access roads along Project generation tie (gen-tie) lines, with roads required for use by WAPA to be a minimum 20 feet wide with an all-weather surface.
- Access roads along Project generation tie-lines, with roads required for use by WAPA to be a minimum 20 feet wide with an all-weather surface.
- One to three additional on-site switchyards hosting on-site ringbus switchyard(s).
- Generation tie-line extending from the Project switchyard(s) to WAPA's White Hills Substation, consisting of one 345-kV circuit (ROW width to be determined).
- Administrative and maintenance buildings.
- Redundant telecommunication systems and cables installed in tandem with the gen-tie routes as required by WAPA. Microwave and wireless systems also onsite.

- Meteorological towers (steel lattice), approximately 30 feet high, mounted on concrete foundations may be installed around the perimeter of the solar facility.
- Project security using a combination of perimeter security fencing, controlled access gates, onsite security patrols, lighting, electronic security systems and/or remote monitoring.
- A 10-foot-wide firebreak outside the perimeter fence.
- Wildlife-friendly exclusion fencing around the Project perimeter.
- Drainage control structures, final design to be determined upon completion of a hydrologic study.
- A temporary construction mobilization and laydown area, which would contain construction trailers, construction workforce parking, above ground water tanks, materials receiving, and materials storage (graded/compacted earth).
- Improvements to WAPA facilities required to support interconnection for the Project (refer to Section 1.3.7 Interconnection Facilities).

1.3.5 Project Facilities

The Project would be designed in accordance with federal, state, and industrial standards, including American Society of Mechanical Engineers standards, National Electrical Safety Code, International Energy Conservation Code, International Building Code, Uniform Plumbing Code, Uniform Mechanical Code, National Fire Protection Association, and Occupational Safety and Health Administration regulations, as applicable.

Solar Panel Arrays

The Project would utilize high-efficiency commercially available solar PV modules that are Underwriters Laboratory (UL)-listed or approved by another nationally recognized testing laboratory. Materials commonly used for solar PV modules include monocrystalline silicon, polycrystalline silicon, amorphous silicon, cadmium telluride (CdTe), and copper indium selenide/sulfide. The Project would use monocrystalline or polycrystalline silicon solar PV modules mounted on single-axis, horizontal tracker mounting systems. Mounted PV modules, inverters, and transformers would be combined to form array blocks, approximately 3.6 MW in size.

With a horizontal tracker mounting system, the panel arrays are arranged in north-south oriented rows and drive motors would rotate the horizontally mounted solar panels from east to west to follow the sun (on a single axis) throughout the day. The highest point for a horizontal tracker would be achieved during the morning and evening hours when the trackers are tilted at their maximum angle and would be a maximum of 12 feet above the ground surface depending on the grade where the posts are installed. When solar modules are roughly parallel to the ground, the overall height of the tracker unit would be a maximum of 6 feet above the ground surface depending on the grade where the posts are installed.

The vertical support legs for the tracker mounting system consist of foundations that may include concrete piers approximately 18 to 24 inches in diameter and 6 to 8 feet deep, or driven posts (wide flange I-beam) approximately 6 to 8 inches across and 6 to 12 feet deep. The preferred mounting configuration would use directly embedded driven posts; concrete piers would be used only if subsurface conditions do not support driven posts.

In this type of system, each tracker panel array is approximately 325 feet long and powered by a low-voltage solar-powered drive motor. The motors and actuator are mounted to one of the driven posts and do not require separate foundations for mounting. Hydraulic drive systems would not be used. The motors only would be operated for a few seconds every 5 to 10 minutes during daylight conditions to move the panels in approximately 1-degree increments. The sound from the tracker motors would be less than 70 decibels at a distance of 3 feet. This would equate to less than 30 decibels at 50 feet.

Meteorological stations located at the site would monitor wind speed and communicate with the tracker units. This would allow for the trackers to rotate to a flat position during high wind activity. The meteorological station towers would be located at multiple locations around the perimeter of the solar array. Meteorological station towers would be monopole or lattice design and would not exceed 30 feet in height. Each tower would require a small concrete foundation approximately 3 feet by 3 feet that would extend approximately 4 feet into the ground, depending on soil conditions.

Emergency Backup Power

If horizontal trackers are used, the PCSs would be equipped with emergency backup power required to rotate the tracker units to their stow position in the unlikely event of high winds and a loss of the primary electrical connection from the Project to WAPA's transmission system. The emergency back-up power system would consist of a 15 kilovolt-ampere (kVA) battery-based uninterruptible power supply (UPS) at each PCS.

Electrical Collection System

PV modules convert sunlight into DC electricity. One or more combiner boxes would be located in the array block to collect the DC electricity from PV modules. The electricity would be delivered through underground cables to an inverter that changes the DC electricity to AC electricity and a medium-voltage transformer that steps up the voltage to 34.5-kV. This converted electricity then would be delivered to an onsite collector substation, where the electricity again would be stepped up to 69-kV for delivery to WAPA's transmission grid.

Inverters, Transformers, and Medium Voltage Switchgear

Each array block would have a Power Conversion Station (PCS) containing inverters and medium voltage transformers, as well as other electrical equipment. Each PCS also would contain communication equipment to wirelessly communicate with the tracker units to control operation and detect anomalous conditions. Photovoltaic Combining Switchgear (PVCS) will be located along the 34.5-kV collector line. All electrical equipment would be housed in protective enclosures on concrete pads.

34.5-kV Collection System

The 34.5-kV collection system could comprise of both underground and overhead cabling. From the medium-voltage transformers to the PVCSs, the 34.5-kV system would be installed underground using 35-kV-rated medium voltage cables listed for direct buried applications except that overhead cabling would be installed where necessary to avoid existing underground facilities. Underground 34.5-kV cables would be installed to comply with the minimum burial depth in accordance with the National Electrical Code.

From the PVCSs to the onsite substation, the 34.5-kV system would be installed overhead. Overhead 34.5-kV collector lines would be installed as double circuit lines on wood poles with post insulators (typical of medium voltage installations in electric distribution systems). Pole height would be up to 75 feet above grade.

Substations

An existing 8-acre 345-kV substation and switchyard is currently adjacent to the Project site. Individual 35-kV "Circuits" will feed from approximately 142 blocks each. The substation is separately fenced to provide increased security around the medium and high voltage electrical equipment. The substation includes a transformer containment area, a microwave tower, a control house, and one or more transformers. Containment measures for all substation equipment shall be provided in accordance with Environmental Protection Agency 40 Code of Federal Regulations (CFR) Part 112 and all applicable codes required by the local, state, and federal governing authorities. The transformer containment area would be lined with an impermeable

membrane covered with gravel and would include a drain with a normally closed drain valve. Transformers would be provided with secondary oil containment equal to 110 percent of the volume of oil present in the transformer in addition to the volume of rainwater for a 25-year, 24-hour rainfall event.

Battery Energy Storage System

The BESS would be composed of inverters spaced over 25 acres which convert the battery power rated at 450 MW at 4 hours. A 2-acre laydown and operation and maintenance (O&M) yard for the BESS facility would also be included within the Project site. The BESS would consist of modular and scalable battery packs and battery control systems that conform to national safety standards. The BESS would be located in pad- or post-mounted, stackable metal structures or a separate building in compliance with applicable regulations. The dimensions would vary depending on the application, supplier, chosen configuration, and applicable building standards. The BESS would be located in the area of disturbance within the solar facility.

Site Security and Fencing

Security at the Project site would be achieved by fencing, lighting (to be developed in coordination with the BLM), security patrols, and electronic security systems. The Project site would be monitored 24 hours per day, seven days per week during all phases.

Internal Project-Related Roads

The primary access road for the Project during both construction and O&M would be determined during the design and NEPA process to minimize overall impacts. A primary access option to be considered will be from US 93 to the west/southwest of the Project area. The Kalamazoo Gravel Pit Road is an existing 1.5-mile road that is used to access the Mohave Wind Farm Project from US 93. The interior maintenance roads are anticipated to be primitive, two-track roads consistent with BLM primitive road standards.

Project-related roads within the solar plant site would include solar facility access ways as described below. Similar to the disturbance that would occur from other Project components (based on the assumption that all acreage within the fenced perimeter would be disturbed), the acreage identified for roads also is considered to be permanent disturbance.

Solar Facility Access Ways

Within the solar facility, new access ways would be built to provide vehicle access to the solar equipment (PV modules, inverters, transformers) for O&M activities. These access ways would be approximately 14 feet wide and approximately every 500 to 1,300 feet across the solar facility. The existing surface area would be graded and compacted using onsite materials to facilitate use by two-wheel-drive vehicles.

1.3.6 Linear Facilities

345-kV Gen-Tie Transmission Line

The Project would require the construction of two gen-tie lines, estimated to be between 1.0 to 1.5 miles and 4.0 to 5.0 miles, respectively, in a 345-kV circuit in addition to a telecommunications system (fiber optic system data) for interconnection to the utility transmission grid system at the White Hills Substation. The final gen-tie routes would be determined after conducting resource surveys to identify any potential constraints or setback requirements, as well as coordination with NextEra, the owner of the adjacent wind facility and ROW, to ensure no impacts on the existing wind infrastructure. A 20-foot-wide gen-tie road would run the length of the gen-tie line. The overhead line and telecommunications system (fiber optic system data) would be installed per local and national electrical code requirements. Structures would be galvanized steel with a dull gray appearance

similar to existing steel poles installed adjacent to the site and would be used to support interconnection to the WAPA transmission system.

All overhead electrical lines would be designed and installed in accordance with the Avian Power Line Interaction Committee's (APLIC) Suggested Practices for Avian Protection on Power Lines (APLIC 2006). The Applicant also would prepare a Wildlife Conservation Strategy to address potential impacts to wildlife during the construction and O&M phases of the Project.

1.3.7 Interconnection Facilities

The following improvements to WAPA facilities are expected to be required to support interconnection for the Project:

- Interconnection with WAPA for delivery of 450 MW to WAPA Balancing Authority via a 345-kV gen-tie line to WAPA's White Hills Substation.
    - To be determined.
    - Metering/ and telecommunications system (fiber optic system data).
- Network Upgrades
    - To be determined.
- Access roads to service the above-referenced interconnection routes and facilities.

1.3.8 Water and Wastewater

Water

An estimated 200 acre-feet (AF) of water would be required over the Project construction period for construction-related activities, including dust control. After construction is complete, the Project's water consumption during operation would require up to two AF per year. Water would not be used for panel washing but would be used in conjunction with dust palliatives during operation (refer to Section 4.0 Operations and Maintenance). The Project would not require process water. Water is anticipated to be purchased from a commercial source or a user with an existing appropriation. It would then be trucked to the Project site where it would be stored in an on-site water storage tank.

If dust palliatives are used in place of water for the Project, the total amount of water needed during construction would be reduced. The Applicant may opt to use such palliatives, as authorized by the BLM for the Project.

Wastewater

Wastewater generated during construction would include sanitary waste from portable toilets. This waste would be collected by a contracted sanitary disposal service and transported to a licensed disposal facility. If the facility is manned by a small number of full-time employees, no permanent wastewater facilities would be installed and the same portable toilets in use during construction would be utilized for ongoing operations.

1.3.9 Lighting

Permanent lighting would be provided within the substation and at the Project entry gate. Small domestic fixtures would also be placed at other electrical equipment as required by applicable codes. Lighting for facilities and associated infrastructure would be down-shielded to keep light within the boundaries of the Project site and the minimum amount and intensity necessary for the intended use. Nighttime construction activities, if required, would be performed with temporary lighting. Night lighting used during construction and O&M of the Project would be controlled or reduced using directed lighting, shielding, and/or reduced lumen intensity. The

Applicant would prepare a Lighting Management Plan for construction and operation of the Project, if required by the BLM.

1.3.10 Waste and Hazardous Materials Management

The primary wastes generated at the Project during construction and O&M would be nonhazardous solid and liquid wastes. The types of wastes and their estimated quantities are discussed below and summarized in Table 1-2. The Applicant would prepare a Hazardous Materials and Waste Management Plan, as well as a Spill Prevention and Emergency Response Plan, which would address waste and hazardous materials management, including Best Management Practices (BMPs) related to storage, spill response, transportation, and handling of materials and wastes.

Table 1-2. Waste Potentially Generated by the Project

Waste	Origin	Composition	Estimated Quantity	Classification	Disposal
Scrap wood, steel, glass, plastic, paper	Construction activities	Normal refuse	200 tons	Nonhazardous	Recycle and/or dispose of in industrial or municipal landfill.
Scrap metals	Construction activities	Parts, containers	<2 tons	Nonhazardous	Recycle and/or dispose of in industrial or municipal landfill.
Empty hazardous material containers	Operation and maintenance of plant	Drums, containers, totes[a]	<1 tons	Hazardous and nonhazardous solids	Containers <5 gallons (gal) would be disposed as normal refuse. Containers >5 gal would be returned to vendors for recycling or reconditioning.
Waste oil filters	Construction equipment and vehicles	Solids	500 lbs.	Used Oil	Recycle at a permitted Treatment, Storage, and Disposal Facility (TSDF).
Oily rags, oil sorbent excluding lube oil flushes	Cleanup of small spills	Hydrocarbons	100 cubic ft	Used Oil	Recycle or dispose at a permitted TSDF.
Spent lead acid batteries	Construction machinery	Heavy metals	10	Hazardous	Store no more than 10 batteries (up to 1 year) and recycle off site.
Spent alkaline batteries	Equipment	Metals	50 lbs.	Universal waste solids	Recycle or dispose offsite at a Universal Waste Destination Facility.

Waste oil	Equipment, vehicles	Hydrocarbons	500 gallons	Used Oil	Dispose at a permitted TSDF.
Sanitary waste	Portable toilet holding tanks	Solids and liquids	50,000 gallons	Nonhazardous liquid	Remove by contracted sanitary service.

Table Notes: [a]Containers include <5-gallon containers and 55-gallon drums or totes

Nonhazardous Wastes

The Project would produce wastes typically associated with O&M activities. These would include defective or broken electrical materials, empty containers, the typical refuse generated by workers and small office operations, and other miscellaneous solid wastes. Locally generated waste during construction and O&M would be hauled off-site for disposal.

Hazardous Materials and Hazardous Waste

Limited quantities of hazardous materials would be used and stored on site for O&M activities. Table 1-3 lists the hazardous materials anticipated that would be stored and used on site. Safety Data Sheets (SDSs) for each of these materials would be provided in the Spill Prevention and Emergency Response Plan.

Table 1-3. Hazardous Materials that may be Used During Operation

Hazardous Material	Storage Description; Capacity	Storage Practices and Special Handling Precautions
Mineral Insulating Oil	Carbon steel transformers; total onsite inventory of 60,000 gal.	Used only in transformers, secondary containment for each transformer would be managed in accordance with the Spill Response and Emergency Response Plan.
Batteries, lead acid based and/or lithium ion	Battery-based emergency back-up power at each of the PCSs.	Sufficient cooling capacity to maintain ambient temperatures appropriate for the selected battery would be provided.
Herbicide Roundup (glyphosate) or equivalent; Pesticide	Brought on site by licensed contractor, used immediately.	No mixing will occur onsite, and no herbicides will be stored onsite.

1.3.11 Fire Protection

The Project's fire protection water system would be supplied from a water storage tank. During construction, one electric and one diesel-fueled backup firewater pump would deliver water to the fire protection water-piping network. The electrical equipment enclosures that house the inverters and transformers would be either metal or concrete structures. Any fire that could occur would be contained within the structures, which would be designed to meet National Electric Manufacturers Association (NEMA) 1 or NEMA 3R IP44 standards for electrical enclosures (heavy duty sealed design to withstand harsh outdoor environmental conditions). Multiple fire prevention measures would be integrated into each BESS container or module to prevent a thermal runaway. The BESS monitoring system would monitor voltage, current, and temperature to catch early indications of safety issues. Containers may be equipped with heating, ventilation, and air conditioning systems to keep internal batteries in an optimal controlled environment. Containers may also include gas, temperature, humidity, and smoke detectors for monitoring, and extinguishing systems to put out incipient fires. The BESS fire suppression, detection, and ventilation systems would be designed according to National Fire Protection

Association Standard 855: Standard for the Installation of Stationary Energy Storage Systems. The Applicant would prepare and implement a Fire Management Plan.

1.3.12 Health and Safety Program

The Applicant would require that all employees and contractors adhere to appropriate health and safety plans and emergency response plans. All construction and operations contractors would be required to operate under a Health and Safety Program (HASP) that meets industry standards. All site personnel would be required to go through a new hire orientation and follow a Worker Environmental Awareness Program (WEAP), which would address Project-specific safety, health, and environmental concerns.

1.3.13 Stormwater Management

Existing Federal Emergency Management Agency (FEMA)-designated floodplains on the Project site would be avoided where feasible, with the exception of roadway crossings, and the Project would be designed and engineered to maintain the existing hydrology. Generally, offsite flows to the Project site come from the east, with some significant slopes (greater than 15 percent) situated immediately to the east. Runoff generated onsite would be conveyed as sheet flow across the site, maintaining as much of the natural grade of the terrain as possible. The soil is very permeable so following the natural terrain would allow for maximum infiltration thereby reducing runoff. Drainage channels or detention basins may be installed per the results of a hydrology study. Construction projects that disturb more than 1 acre of land require an Arizona Pollutant Discharge Elimination System (AZPDES) Construction General Permit (AZG2020-001) and development of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP would be completed before filing a Notice of Intent with ADEQ, which is required before beginning construction activities.

1.3.14 Vegetation Management

Within the solar facility areas, existing vegetation would be worked into the underlying surface soils using the technique of “disk and roll” and where necessary, conventional grading, would be used to prepare the site for post and PV panel installation. The disk and roll approach uses conventional farming techniques and equipment to prepare the site for construction. In areas where the terrain is not suitable for disk and roll, grading would be used to prepare the site surface.

In developed areas where disk and roll or conventional grading techniques are not implemented, vegetation would be cut to a height of less than 12 inches. Vegetation would be permanently cleared from roadways, access ways, and where concrete foundations are used for inverter equipment, substation, and the O&M facilities. Where possible, plant root systems would be left in place. Exceptions include where grading and trenching is required for placement of solar module foundations, underground electric lines, inverter and transformer pads, roads and access ways, and other facilities. The height of the vegetation would be maintained as needed for site maintenance and fire-risk management using mechanical and chemical controls. The Applicant would address post-construction vegetation management including invasive and noxious weed control as part of a BLM-approved Integrated Weed Management Plan for the Project. For temporary construction areas that would be revegetated, topsoil would be placed into stockpiles at designated locations. Stockpiles would be treated with temporary soil stabilization and erosion control measures as per SWPPP.

Noxious Weed and Pest Control

The Applicant would prepare a Noxious Weed Management and Control Plan for the Project that would follow an approved BLM format. BLM-approved herbicides would be used to control noxious weeds, if required. Pest control may also be required, including control of rodents and insects inside of the buildings and electrical equipment enclosures.

1.4 Alternatives Considered by Applicant

Other site options were considered for the Project in Mohave County, in the vicinity of the White Hills Substation. After evaluating other site options, the Project site was selected as the optimal location in Mohave County on lands administered by the BLM. As part of the NEPA process, other alternatives may be considered for the Project.

1.5 Other Permits and Authorizations

Table 1-4 provides a list of federal, state, and local permits, authorizations, or inter-agency consultations that may be required for the Project.

Table 1-4. Federal, State, and Local Permits and Authorizations

I. Federal Permits, Authorizations or Inter-Agency Consultations
Bureau of Land Management (BLM) ▪ ROW grant under Title V of the Federal Land Policy and Management Act (FLPMA) ▪ NEPA Documentation and Decision to support issuance of ROW grant
BLM and Advisory Council on Historic Preservation (ACHP) ▪ BLM, National Historic Preservation Act (NHPA) Section 106 Consultation
Federal Aviation Association (FAA) ▪ Determination of No Hazard
Department of Defense Clearinghouse ▪ Consultation for potential conflicts with military uses
U.S. Army Corps of Engineers (USACE) ▪ Potential 404 Permit under Section 404 of Clean Water Act (CWA)
U.S. Fish and Wildlife Service (USFWS) ▪ Endangered Species Act (ESA) Section 7 Consultation and Biological Opinion/Incidental Take Statement
II. State of Arizona Permits or Authorizations
Arizona Game and Fish Department (AGFD) ▪ Scientific Collection Permit (for subcontractor)
Arizona Department of Environmental Quality (ADEQ) ▪ Arizona Pollutant Discharge Elimination System Construction General Permit
Arizona Corporation Commission (ACC) ▪ Certificate of Environmental Compatibility
Arizona Department of Transportation (ADOT) ▪ Encroachment Permit for facilities/activities within State Highway ROWs (US 93)
III. Mohave County Permits
Mohave County Department of Air Quality ▪ Dust Control Permit
Mohave County Regional Flood Control District ▪ Drainage Study Approval
Mohave County Building Department ▪ Grading Permit ▪ Building Permit
Mohave County Road Department ▪ Encroachment Permit

Table Notes: FAA = Federal Aviation Association; FLPMA = Federal Land Policy and Management Act; NHPA = National Historic Preservation Act

2.0 CONSTRUCTION OF THE FACILITIES

2.1 Overview

Construction is expected to take up to 24 months and would include the major phases of mobilization, construction grading and site preparation, installation of drainage and erosion controls, PV panel/tracker

assembly, and solar facility construction. The Applicant is planning to commence construction in 2025. Some aspects of construction will need to be coordinated with WAPA, including but not limited to interconnection to the White Hills Substation and construction power.

2.2 Temporary Construction Workspace, Laydown and Mobilization Areas

The Project construction contractor would develop a temporary construction mobilization and laydown area within the Project site that would include temporary construction trailers with administrative offices, construction worker parking, temporary water service and fire water supply holding tanks, temporary construction power services, tool sheds and containers, as well as a laydown area for construction equipment and material delivery and storage.

In addition, temporary construction areas would be located at each gen-tie tower location and at locations required for conductor stringing and pulling operations to accommodate construction of the gen-tie. These areas would be required for staging equipment and materials for foundation construction and tower installation.

2.3 Site Preparation

A geotechnical investigation and environmental clearance surveys would be performed at the Project site prior to commencement of construction activities. During the environmental clearance phase, the boundaries of the construction area would be delineated and marked. The site then would be prepared for use; existing vegetation removal and grading would be minimized to the extent reasonably practicable. Site preparation techniques are described below.

2.3.1 Land Surveying and Staking

Prior to construction, the limits of construction disturbance areas would be determined by surveying and staking. Where necessary, the limits of the ROW would also be flagged. All construction activities would be confined to these areas to prevent unnecessary impacts affecting sensitive areas. These areas, which would include buffers established to protect biological resources, also would be staked and flagged. The locations of underground utilities would be located and staked and flagged in order to guide construction activities.

2.3.2 Clearance Surveys

Authorized biologists would be retained to survey before and during construction for birds and sensitive species in accordance with the WEAP.

2.3.3 Vegetation Removal and Treatment

Within the solar facility areas that would be graded, existing vegetation would be worked into the underlying surface soils. Vegetation would be permanently cleared from roadways, BESS facilities, access ways, and where concrete foundations are used for the inverter equipment, substations, and O&M facilities. A 10-foot-wide fire break would be established around the outside of the perimeter fence and maintained clear of vegetation (refer to Section 1.3.14 Vegetation Management).

2.3.4 Site Clearing, Grading, and Excavation

All earthwork required to install drainage control detention basins, access roads, and foundations for Project-related buildings would be balanced on site. Trenching would be required for placement of collector lines. The solar facility would require a positive natural terrain slope of less than 5 percent. The disk and roll technique would be used generally to prepare the surface of the solar facility for post and PV panel installation. The disk and roll technique use conventional farming equipment to prepare the site for construction. Typical farming

equipment includes rubber-tired tractors with disking equipment and drum rollers with limited use of scrapers to perform micrograding. In areas where the terrain is not suitable for disk and roll, conventional cut and fill grading would be used.

Solar Facility and Internal Roads

Within the solar facility, some grading would be required for roads and access ways between the solar arrays, and for electrical equipment pads. In general, the design standard for the roads and access ways within the solar facility would be consistent with the amount and type of use they would receive.

Substation

Within the solar facility, some grading would be required for the Project substation, O&M area, BESS facilities, perimeter roads around the solar arrays, and electrical equipment pads. The substation would require a graded site to create a relatively flat surface for proper operation, with approximately 1 percent maximum slope in either direction. The substation interior would be covered with aggregate surfacing for safe operation.

2.3.5 Gravel, Aggregate, and Concrete Needs and Sources

Concrete would be poured in place for equipment and building foundations, fence footing and miscellaneous small pads. Aggregate material would be used for the trench backfill, parking lot and substation area (and if determined necessary, for the perimeter road and access roads). Riprap material may be required for erosion control. The Applicant would determine a source for these materials that would be presented for BLM review and approval, as necessary.

2.4 PV Solar Array Assembly and Construction

Prior to any construction in PV equipment areas, the clearance and site preparation steps for those areas would be completed. Within each area designated for PV equipment, the construction sequence would follow a generally consecutive order.

1. The construction of the solar facility would proceed by arrays. Each array would contain solar panels, a PCS, and a step-up transformer. Within each array, materials for each row of PV modules would be staged next to that row.
2. Prepare trenches for underground cable.
3. Install underground cable.
4. Backfill trenches.
5. Install steel posts and table frames.
6. Install PV modules.
7. Install concrete footings for inverters, transformers, and substation equipment.
8. Install inverter and transformer equipment.
9. Perform electrical terminations.
10. Inspect, test, and commission equipment.

Cable trenches would be used to provide underground connection of Project equipment. Trenches would contain electrical conductors for power generation and fiber optic cables for equipment communication.

Trenches would vary between 2 to 3 feet wide and 2 to 3 feet deep depending on the number of conductors and voltage of equipment to comply with applicable electrical codes.

The assembled solar equipment would be installed on steel posts to which steel table frames would be attached. Trucks would be used to transport the PV modules to the solar facility. A small mobile crane may be used to assist construction workers in setting the solar modules on the driven steel posts. Final solar facility assembly would require small cranes, tractors, and forklifts.

2.5 Electrical Collection and Transmission System Construction

Electrical construction would consist primarily of the following elements:

1. Equipment—Installation of all electrical equipment including DC combiner boxes, PCS Shelters (including inverters), transformers, circuit breakers, disconnect switches, switchgear and distribution panels, lighting, communication, control, and Supervisory Control and Data Acquisition (SCADA) equipment.
2. Cables—Installation of all cables necessary to energize the Project equipment including instrument control wiring. High, medium, and low voltage cables would be routed via cable trays, above-grade conduits, below-grade conduit in duct bank, and overhead structures.
3. Grounding—All equipment and structures would be grounded, as necessary. Within the solar facility, an appropriate grounding system would be engineered and constructed in order to maintain personnel safety and equipment protection.
4. Telecommunications—Multiple communication systems would be required for the Project to properly operate, including T-1 internet cables, fiber optic, microwave, and telephone. All communications would be installed during electrical construction.

2.5.1 Standard Transmission Line Construction Techniques

The Project would include an overhead 34.5-kV collection system and overhead 345-kV gen-ties. Standard transmission line construction techniques would be used to construct the collector and gen-tie lines. Primary stages in transmission line construction are foundation installation, tower installation, and conductor stringing. Up to a 100-foot by 700-foot temporary laydown or staging area would be required at each 345-kV tower location for equipment, towers, and hardware. In general, little to no grading is expected to be required for these areas. Typical equipment expected to be used for transmission line construction includes backhoe, truck-mounted tower hole auger, forklift, crane, line truck with air compressor, various pickup and flatbed trucks, conductor reel and tower trailers, bucket trucks, and truck-mounted tensioner and puller.

Foundation Installation

The steel towers used for the gen-tie would be supported by steel-reinforced poured pier concrete foundations suitable for the site. These foundations are constructed by auguring a cylindrical hole using a truck-mounted drilling rig. Reinforcing steel and anchor bolt cages would be installed in the hole and then the hole would be backfilled with concrete. Steel tower foundations would range in size from approximately 4 to 7 feet in diameter, and in depth from 12 to 30 feet. Wood poles used for the overhead 34.5-kV collector line would be embedded into the ground to a depth of at least 10 percent of the pole height plus 2 feet. Installation of wood poles is anticipated to require drilling holes approximately 2 feet in diameter and 8 feet deep. Aggregate or high-

strength backfill would be used to stabilize the installed poles. Angle structures on the 34.5-kV collection line would require steel poles supported by steel-reinforced poured pier concrete foundations.

Tower/Pole Installation

Poles would be placed onto their foundations (for wood, placed into their holes) using backhoes or heavy lifter vehicles for the smaller, lighter poles, or a crane for longer poles. The poles would be supported, as necessary, during backfilling or bolting to the foundation to ensure correct pole seating.

Conductor Stringing

Conductor stringing would likely be conducted one phase at a time, with all equipment in the same operational place until all phases of that operation are strung.

Grounding

Ground rods would be hammered into the earth with a jackhammer device attached to a small excavator (such as a Bobcat). Typically, the rods are 8 to 12 feet long and can be longer if needed by joining multiple rods. For the 34.5-kV wood poles, a 3-foot square by 2-foot-deep area would be excavated to expose the ground rod for connection to the plant's grounding grid.

2.6 Road System Construction

The construction entrance and exit gates would then be established. The Project's main access point would be graded and constructed in order to facilitate entry to the Project site. Within the solar facility, some grading would be required for roads and access ways between the solar arrays. As part of the gen-tie line, a permanent 20-foot-wide gen-tie road would be constructed that would run the length of the gen-tie line. All Project-related roads are proposed to be native graded/compacted dirt; however, roads may alternatively use an aggregate base in some or all areas to meet Project dust and flood control requirements.

Any temporary or permanent crossings under or over existing transmission lines will be coordinated and approved with WAPA or line owner. In addition, the use of all existing permitted roads will be coordinated with WAPA or other line owner.

Roadways with the designated FEMA floodplains would be constructed per the guidelines outlined in Chapter 9 of Low Volume Roads Engineering, Best Management Practices Field Guide (USFS 2003), as approved by the BLM.

2.7 Site Stabilization, Protection, and Reclamation

Appropriate water erosion and dust-control measures would be implemented to prevent an increased dust and sediment load to ephemeral washes around the construction site and to comply with any state or local dust control requirements. Dust during construction would be controlled and minimized by applying water and/or BLM-approved palliatives (refer to Section 1.3.8 Water and Wastewater).

The Applicant would employ BMPs to protect the soil surface by covering or binding soil particles. The Project would incorporate erosion-control measures required by regulatory agency permits and contract documents as well as other measures selected by the contractor. Project-specific BMPs would be designed by the contractor and included in the Project SWPPP.

The Applicant would prepare a Site Rehabilitation and Restoration Plan. This plan would be implemented immediately after construction for the areas that are temporarily disturbed, such as portions of the transmission line route that involve disturbance.

2.8 Workforce, Schedule, Equipment, and Materials

The onsite construction workforce would consist of laborers, craftsmen, supervisory personnel, support personnel, and construction management personnel. The onsite construction workforce is anticipated to be an average of 100 to 300 construction workers with a peak of up to 500 workers at any given time. Most construction staff and workers would commute daily to the jobsite from within Mohave County.

Construction generally would occur between 5:00 a.m. and 5:00 p.m. and may occur seven days a week. Additional hours may be necessary to make up schedule deficiencies, or to complete critical construction activities. For instance, during hot weather, it may be necessary to start work earlier (e.g., at 3:00 am) to avoid work during high ambient temperatures. Further, construction requirements would require some night-time activity for installation, service or electrical connection, inspection and testing activities.

Construction activities would follow a generally consecutive order, however, most construction activities associated with each construction component would overlap to some degree and would include the following:

1. Installation of security fencing;
2. Construction of the access road, laydown areas, substation concrete pad and distribution line;
3. Site preparation activities, and construction of drainage control detention basins;
4. Erection of collection system and substation; and
5. PV solar array assembly, construction, and commissioning.

2.9 Construction Traffic

Typical construction traffic would consist of trucks transporting construction equipment and materials to and from the site and vehicles of management and construction employees during the construction period. Most construction staff and workers would commute daily to the jobsite from within Mohave County. All traffic would use US 93 to access the site. Prior to the start of construction, the Applicant would prepare a Traffic Management Plan to address Project-related traffic.

2.10 Construction Power

A new distribution line interconnecting to existing WAPA distribution service would be installed to provide electricity to the substation to serve both the Project during construction and operations. Distribution line poles would be approximately 55 feet high and spaced an average of 300 feet from one another. In addition, a temporary overhead line would be installed during construction to provide power to the laydown areas. Alternatively, generators may be used to provide temporary construction and operation power.

3.0 RELATED FACILITIES AND SYSTEMS

3.1 Transmission System Interconnect

3.1.1 Proposed Transmission System

The overhead 345-kV gen-tie lines would be constructed as described in Section 2.5.1 and would transmit power generated by the Project from the project substation to the existing WAPA White Hills Substation.

3.1.2 Status of Power Purchase Agreements

The power produced by the Project would be conveyed to the WAPA transmission system. The project sponsor plan to submit one or more interconnection applications at the White Hills Substation.

3.1.3 General Design and Construction Standards

The Project would be designed in accordance with federal and industrial standards including American Society of Mechanical Engineers standards, National Electrical Safety Code, International Energy Conservation Code, International Building Code, Uniform Plumbing Code, Uniform Mechanical Code, and National Fire Protection Association and Occupational Safety and Health Administration standards.

Construction would be in accordance with the federal codes listed above and all applicable state and local codes.

3.2 Other Related Systems

3.2.1 Communication System Requirements

Multiple communication systems would be used for construction and operation. These items would include telephone, fiber optics, and T1 internet. The Applicant expects to utilize existing wired or wireless telecommunications facilities. In the event that these facilities are not available in the Project vicinity, the Applicant would install hard-wired (land-line) systems as part of the electrical construction activities or would supplement with small aperture (less than 1 meter) satellite communications gear.

4.0 OPERATIONS AND MAINTENANCE

The facility will operate 7 days a week. It is expected operations staff would be located off-site, with site visits occurring daily for security, maintenance, and repairs. To maintain generation performance, PV array washing may occur up to 24 hours per day (including nighttime panel washing), with approximately two panel washes anticipated per year. A solar PV project uses no process water, gas, or fuels for the power generation process.

An O&M program, typical of a project this size, will be implemented to control the quality of O&M. The frequency and type of maintenance is described in Table 4-1. During the first year of operation, the frequency of inspections would be increased to address settling and electrical termination torque (e.g., for year 1, inspections shown as semi-annually are performed quarterly, inspections shown as annual are performed semi-annually). At designated intervals, approximately every 10 to 15 years, major equipment maintenance would be performed. O&M procedures would be consistent with industry standards practices for maintaining the useful life of plant components.

Table 4-1. Routine Maintenance Protocol

Equipment	Maintenance Interval	Task
PV Modules	Quarterly	Visually inspect panels for breakage and secure mounting Visually inspect modules for discoloration Visually inspect wiring for connections and secure mounting Visually inspect mounting structure for rust and erosion around foundations Manually clean localized debris from bird droppings, etc.
	Semi-Annually	Clean modules if determined necessary
Inverter	Semi-Annually	Perform temperature checks on breakers and electrical terminations Visual inspection of all major components and wiring harnesses for discoloration or damage Measure all low voltage power supply levels Inspect/remove any dust/debris inside cabinet Inspect door seals Check proper fan operation Inspect and clean (replace if necessary) filters Check electrical termination torque Check the operation of all safety devices (e-stop, door switches, ground fault detection)
	Annually	Check all nuts, bolts and connections for torque and heat discoloration Calibrate control board and sensors Inspect air conditioning units for proper operation
Medium voltage transformers	Semi-annually	Perform temperature check Inspect door seals Record all gauge readings Clean any dirt/debris from low voltage compartment

Substation transformers Substation transformers	Semi-annually	Inspect access doors/seals Inspect electronics enclosure and sensor wiring Record all gauge readings
	Annually	Inspect fans for proper operation Calibrate temperature and pressure sensors Pull oil sample for oil screening and dissolved gas analysis.
Breakers and switchgear	Semi-annually	Inspect for discoloration of equipment and terminations Inspect door seals
	Annually	Check open/close operation
Overhead transmission lines	Annually (and after heavy rains)	Inspect guy wires and tower angle Visual inspection of supports/insulators Visual inspection for discoloration at terminations
Roadways	Annually (and after heavy rain)	Inspect access ways and roads that cross drainage paths for erosion
Vegetation	Semi-annually	Noxious weed inspections would be conducted in accordance with the BLM approved Integrated Weed Management Inspect for localized vegetation control to restrict height to less than 12 inches to address faster growth vegetation Apply herbicides as necessary to control noxious weeds
	Every 3 years	Mowing as required to reduce vegetation height to 9 inches
O&M Building	Semi-annually	Check smoke detectors Apply pesticides as necessary to control rodents and insects
	Annually	Check weather stripping and door/window operation Check emergency lighting Inspect electrical service panel
Backup Power	Annually	Visually inspect backup power system Perform functional test of backup power system
Fencing	Quarterly (and after heavy rain)	Inspect fence or vandalism and erosion at base Desert tortoise fence inspections would be conducted in accordance with the terms and conditions of the Project-specific Biological Opinion

O&M would require the use of vehicles and equipment including crane trucks for minor equipment maintenance. Additional maintenance equipment would include forklifts, manlifts, and chemical application equipment for weed abatement and soil stabilizer treatment in the bioremediation area. The site will be accessible by vehicle. No heavy equipment would be used during normal plant operation.

White Hills Solar is expected to have an annual equivalent plant availability of 92 to 98 percent. It would be possible for plant availability to exceed 98 percent for a given 12-month period.

The facility would be operated in one of the following modes:

1. The facility will be operated at its maximum continuous output for as many hours per year as sunlight is available.
2. Small portions of the facility may be temporarily shut down for repairs.
3. Only in the case of a transmission system disconnect would the facility encounter a full shutdown.

Dust during O&M would be controlled and minimized by applying water and/or BLM-approved palliatives (refer to Section 2.8 Site Stabilization, Protection, and Reclamation).

5.0 DECOMMISSIONING

Decommissioning of the system will occur within 120 days following the end of the ROW grant or discontinuance of operation. At the time of decommissioning, the Applicant or its successor will be responsible for the removal, recycling, and disposal of the solar panels, panel racks, inverters, and fencing, as documented in the Decommissioning and Reclamation Plan as appropriate.

6.0 DESIGN FEATURES

The Project would include a number of design features to reduce or avoid adverse impacts on any sensitive resources evaluated in the NEPA document that would be prepared for the Project. As discussed in the BLM NEPA Handbook (BLM 2008), design features are typically developed as the impact analysis is being conducted and often include standard operating procedures, stipulations, and BMPs.

The Final Solar PEIS established requisite design features that would be incorporated as needed into the Project, according to current BLM regulations and policies. All appropriate design features outlined in Volume 4, Section 11.3.10.3 and in Section A.2.2 of Appendix A in the PEIS would be implemented (BLM and Department of Energy [DOE] 2012). Additionally, The Restoration Design Energy Project (RDEP) ROD includes design features, required plans, and BMPs associated with siting and design, construction, O&M, and decommissioning of renewable energy projects (BLM 2013b).

The Applicant would also prepare a number of management plans, as appropriate, and as outlined in the RDEP ROD Appendix B, to support the environmental analysis and BLM approval and issuance of a ROW grant and ground lease. These plans would be developed, in coordination with the BLM, as the Project progresses and the POD is updated.

7.0 RESOURCE VALUES AND ENVIRONMENTAL CONCERNS

An environmental analysis and NEPA-compliant document would be prepared for this Project to evaluate the potential impacts of the Project and related activities. The NEPA document would identify the primary resource values that may be impacted by the Project, including air quality, biological resources, cultural resources, lands and realty, noise, recreation resources, special area designations, transportation and travel management, visual resources, water resources, and wilderness areas/lands with wilderness characteristics. As the NEPA process progresses, this section would be revised to summarize the potential environmental consequences action

alternatives evaluated in the NEPA document. In consultation with BLM, design features would be incorporated into the Proposed Action to reduce and/or avoid resource impacts (refer to Section 6.0 Design Features) in addition to relevant Best Management Practices and Standard Operating Procedures.

7.1 Biological Resources

Protected biological resources would be identified during the Project planning phase and addressed in a Biological Evaluation prepared according to BLM standards. An initial assessment of the biological resources that are known to be present or could potentially be present in the Project area is provided below.

7.1.1 Biotic Communities

The Project is located within the Mojave Basin and Range Ecoregion, which, due to its location in the rain shadow of major mountain ranges, is very arid with high temperatures and limited rainfall occurring predominantly in the winter (BLM 2013). The only vegetation community that occurs within the Project area is the Sonoran-Mojave Creosotebush-White Bursage Desert Scrub (USGS 2016); the project area would occur with approximately 4,262 acres of the vegetation community.

7.1.2 Wildlife

Wildlife species that are likely to occur in the Project area include birds such as the white-winged dove(*Zenaida asiatica*), common raven (*Corvus corax*), and red-tailed hawk (*Buteo jamaicensis*); mammals such as Harris' antelope squirrel (*Ammospermophilus harrisii*), javelina (*Pecari tajacu*), mule deer (*Odocoileus hemionus*), and coyote (*Canis latrans*); and reptiles such as the common side-blotched lizard (*Uta stansburiana*), coachwhip (*Masticophis flagellum*), and long-nosed leopard lizard (*Gambelia wislizenii*).

7.1.3 Threatened and Endangered Species

The US Fish and Wildlife Service Information for Planning and Consultation (IPaC) decision support system was accessed on February 9, 2023 (project Code 2023-0011654). The IPaC system returned a list of federally listed threatened, endangered, proposed, and candidate species protected under the Endangered Species Act (ESA) that have the potential to occur within the Project area based on existing records of the species in the same geographic vicinity. The habitat requirements and current distribution information for each of the species on the list were reviewed by a qualified biologist (Jack Kauphusman, Logan Simpson) to identify those that may occur within the Project area or have suitable or critical habitat within the Project area. Table 7-1 provides habitat requirements and current distribution information for each of the species on the list along with an evaluation of the potential occurrence of each species in the Project area.

Table 7-1. Threatened and Endangered Species and Potential to Occur in the Project Area

Species Name	Status[a]	Habitat Requirements	Potential to Occur
Invertebrates			
Monarch butterfly (*Danaus plexipus*)	ESA C	In Arizona, frequently occurs near sources of water (rivers, creeks, roadside ditches, irrigated gardens) with an abundance of nectar and milkweed resources at variable elevations.	No suitable (i.e., abundant nectar and milkweed resources) habitat present. Species is not likely to occur.
Reptiles			
Northern Mexican gartersnake (*Thamnophis eques megalops*)	ESA LT	Cienegas, stock tanks, large-river riparian woodlands and forests, and streamside gallery forests from 130 to 8,500 feet in elevation.	No suitable (i.e., stream or wetland) habitat present. Species is not likely to occur.
Birds			
California least tern (*Sterna antillarum browni*)	ESA LE	Open, bare, or sparsely vegetated sand, sandbars, gravel pits, or exposed flats along shorelines of inland rivers, lakes, reservoirs, or drainage systems at elevations below 2,000 feet. Breeding occasionally documented in Arizona; migrants may occur more frequently.	No suitable (i.e., sandbars, gravel pits, or shorelines) habitat present. Species is not likely to occur.
Yellow-billed cuckoo (*Coccyzus americanus*)	ESA LT	Large blocks of riparian woodlands (cottonwood and willow galleries) below 6,500 feet in elevation. Also utilizes ephemeral and intermittent drainages and encinal (oak-dominated) habitats in upland areas within southern Arizona.	No suitable (i.e., riparian woodlands or xeric forests) habitat present. Species is not likely to occur.

Source: USFWS IPaC decision support system, <http://ecos.fws.gov/ipac/>, accessed February 9, 2023.
Table Notes: [a]Status definitions: C = Candidate for Listing, ESA = Endangered Species Act, LE = Listed Endangered, LT = Listed Threatened, EXPN = Experimental Population/Non-Essential

7.1.4 Critical Habitats

There are no critical habitats that have been designated or proposed under the ESA in the Project area.

7.1.5 Special Status Species

The Arizona Game and Fish Department (AGFD) On-line Environmental Review Tool was queried on February 9, 2023, to obtain a list of special status species that have been documented in the vicinity of the Project area. Table 7-2 lists the species that have been documented within 2 miles of the Project area by the AGFD.

Table 7-2. Special Status Species Documented within Two Miles of the Project Area

Common Name	Scientific Name	Status	Potential to Occur
Golden eagle	*Aquila chrysaetos*	BLM S SGCN BGEPA	Likely to occur – there is suitable foraging habitat present within the Project area and potential suitable nesting habitat in the project vicinity along the White Hills.
Sonoran desert tortoise	*Gopherus morafkai*	BLM S SGCN	Likely to occur – there is suitable habitat (i.e., steep hillsides) present along the Project Area near the White Hills.

Source: AGFD On-line Environmental Review Tool, <https://azhgis2.esri.com/content/home>, accessed February 9, 2023.
Table Notes: [a] Status definitions: SGCN - Species of Greatest Conservation Need (as identified in the AGFD's 2012 State Wildlife Action Plan), BLM S – Bureau of Land Management Sensitive species.

7.1.6 BLM Sensitive Species

The special status species listed in Table 7-2 and the BLM species list for the Colorado River District were reviewed to determine whether any species designated as BLM Sensitive may occur within the Project area. In addition, coordination with the BLM Kingman Field Office Wildlife Biologist (Joelle Acton) was conducted to address BLM biological resource concerns for the Project. The Sonoran desert tortoise, golden eagle, Gila monster *(Heloderma suspectum*), western burrowing owl (*Athene cunicularia hypugaea*), and Joshua tree (*Yucca brevifolia*) all have the potential to occur within or near the Project area.

The Sonoran desert tortoise may occur in the Project vicinity. The Sonoran desert tortoise is a BLM-designated Sensitive species that is managed under a multi-agency Candidate Conservation Agreement (CCA). Under the CCA, appropriate conservation measures are implemented on a project-by-project basis to help ensure the current and future viability of Sonoran desert tortoise populations.

The BLM has assessed the habitat potential for desert tortoises on BLM lands statewide and has categorized tortoise habitat areas according to: (1) importance of the habitat to maintaining viable populations; (2) resolvability of conflicts; (3) tortoise population density; and (4) population status (stable, increasing, or decreasing). Based on these criteria, the BLM developed three habitat categories—from Category I (the most valuable and protected habitat) to Category III (the least valuable and protected habitat)—and has designated BLM lands with tortoise habitat potential to one of these three categories. There is no BLM-designated Category I, II, or III desert tortoise habitat in the Project area, however, no tortoise habitat studies have yet to be conducted by the BLM within the Project vicinity. The nearest ranked desert tortoise habitat is located approximately 25 miles south of the Project area along the Black Mountains and is rated as Category III. There is suitable habitat (i.e., steep, rocky hillsides and in alluvial fans) near the Project along the White Hills.

The golden eagle is currently listed as a BLM-designated Sensitive species and is protected under the Bald and Golden Eagle Protection Act. The Project area contains no suitable breeding habitat (i.e., cliffs, mesa, and pinnacles). This species may incidentally fly over or forage within the Project area.

The Gila monster is currently listed as a BLM-designated Sensitive species and an SGCN for the State of Arizona. There is suitable habitat (i.e., steep, rocky hillsides and in alluvial fans) near the Project along the White Hills, and individuals have been documented in the geographic area (iNaturalist 2022).

The western burrowing owl is currently listed as a BLM-designated Sensitive species and is protected under the Migratory Bird Treaty Act. There is suitable habitat (i.e., open desertscrub) for the species within the Project area, although, the species has not been recently documented in the geographic area (eBird 2022; iNaturalist 2022).

The Joshua tree is currently listed as a BLM-designated Sensitive species. The Project area contains suitable habitat (i.e., flats, gentle slopes, and bajadas within the Mojave Desert) for the species, and a general site assessment was conducted on February 7th, 2023 by Logan Simpson for the Variance Factor Analysis Report for the Project; the survey documented multiple individuals within the Project area.

The Project would be under the authority of the BLM Colorado River District Office, and the potential presence of other BLM-designated Sensitive species would be evaluated through additional coordination with the BLM and onsite surveys conducted during the pre-NEPA resource studies.

7.1.7 Species of Economic and Recreation Importance

The AGFD On-line Environmental Review Tool was queried to obtain a list of species of economic and recreation importance predicted to occur within the Project area, which includes mountain lion (*Puma concolor*), white-winged dove, and mourning dove (*Zenaida macroura*). In addition, there is suitable habitat (i.e., upland desert and mountains) for mule deer and bighorn sheep (*Ovis canadensis*) within the Project vicinity along White Hills. Both the mule deer and bighorn sheep may occur within the Project area.

7.1.8 Migratory Birds

Most bird species in the United States, with the exception of nonnative species such as the house sparrow (*Passer domesticus*) and European starling (*Sturnus vulgaris*), are protected under the Federal Migratory Bird Treaty Act of 1918 (MBTA), which prohibits injury or death to migratory birds and their active nests, eggs, and young. The Project area contains suitable habitat for year-round resident birds and migrating individuals that may pass through the area during the spring and fall. There may be suitable nesting habitat for raptor species such as the western burrowing owl, red-tailed hawk, prairie falcon (*Falco mexicanus*), and American kestrel (*Falco sparverius*) in the Project area or immediate Project vicinity.

7.2 Vegetation and Protected Native Plants

Some of Arizona's plant species are protected under the Arizona Native Plant Law (Arizona Revised Statutes, Chapter 7, Article 1:3-915A); this protection does not apply on federal (i.e., BLM) lands. Therefore, the Project, as currently proposed, would not be required to follow the Arizona Native Plant Law. However, BLM-designated Sensitive plant species may occur in the Project area, and the Project would be authorized to coordinate with the BLM to incorporate a species-specific mitigation measure. In addition, the Project would adhere to the KFO RMP for Vegetative Products Management on salvage requirements for listed cacti and yucca species, and the BLM Kingman Field Office Wildlife Biologist (Joelle Acton) request for rare cacti and yucca pre-project surveys for where project disturbance would occur.

7.3 Noxious and Invasive Species

Construction activities are known to contribute to the introduction and spread of noxious weeds and invasive plant species. Construction vehicles and equipment can transport seeds from outside the Project area, and disturbed soils are prone to colonization by invasive annuals that may outcompete native species. Standard BMPs that would be implemented by the Applicant to prevent the introduction and spread of noxious and invasive plant species during construction would include treating noxious and invasive species infestations prior to construction and ensuring that vehicles and construction equipment that enter the site are free of soil and plant material.

Surface disturbance during construction of the Project would permanently remove native vegetation; the Project area would be managed under an *Integrated Weed Management Plan* to ensure that disturbed soils are not colonized by noxious and invasive species. Once construction activities are completed, temporarily disturbed areas would be re-contoured and re-vegetated with a BLM-approved native seed mix.

7.4 Cultural Resources

The Project is situated on federal land managed by the BLM. It requires federal permitting and thus constitutes an undertaking pursuant to 36 CFR § 800.16(y). As such, it is subject to compliance with Section 106 (54 U.S.C. § 306108) of the NHPA (54 U.S.C. § 300301, et seq.) and its implementing regulations (36 CFR Part 800). The BLM is identified as the lead federal agency responsible for Section 106 compliance.

7.4.1 Class I Cultural Resources Inventory

A Class I (records search) cultural resources inventory of the Project area and a surrounding 1-mile study area was completed in November 2022. The records search identified eight previous investigations within the study area. The previous projects have investigated approximately 2,471 acres of the Project area (15 percent) and 512 acres of the area of potential effect (APE) (12 percent). Only one project in the Project area (2011-195.ASM) was conducted using modern survey standards and techniques, per the *SHPO Position on Relying on Old Archaeological Survey Data* (SHPO Guidance Point No. 5). However, this project is more than 10 years old, and the APE is situated on an active alluvial fan. There is potential for newly exposed prehistoric-age cultural resources in the APE as well as historic-age sites that that were not 50 years old when the last survey was completed. Effectively, none of the APE has been adequately evaluated for cultural resources.

Six cultural resources sites have been documented in the Project area. Of these six sites, four sites intersect the APE. One in-use historic-age road—AZ F:3:43[ASM]/Stone's Ferry Road—traverses the APE and has been recommended eligible for inclusion in the NRHP under Criterion D (Kirvin et al. 2011). Although it has not been previously recommended as such, it is also likely NRHP-eligible under Criterion A for its association with historical mining in the area (Keane and Rogge 1992). All other documented cultural resources in the study area, including three in-use historic-age roads within the APE, have been recommended not eligible for the NRHP (Kirvin et al. 2011).

Prior to ground-disturbing construction activities, a Class III pedestrian survey of the entire APE would be conducted to identify and evaluate the NRHP-eligibility of any cultural resources present within the APE. The surveyed area would encompass the selected APE for the proposed solar facility and gen-tie route when their exact locations are determined. Systematic, pedestrian survey is warranted because the APE has not been surveyed in the past ten years and there is potential for the undertaking to adversely affect NRHP-eligible properties.

The results of a Class III survey would be used to assess the potential adverse effect of the proposed undertaking on NRHP-eligible properties. Consultation with Native American tribes that claim traditional cultural affiliation with the APE would also be conducted to help identify any sacred places or traditional cultural properties (TCPs), if present, that may also be potentially affected by the proposed undertaking.

7.5 Lands and Realty

Existing ROW authorizations within the Project area include county roads, wind energy generation, and electrical transmission facilities. The Project area is located within approximately 3,390 acres of the Big Ranch Unit A (00007) grazing allotment, and approximately 865 acres of the Big Ranch Unit B (00081) grazing allotment. The Project area would account for approximately 0.7 percent of the total acreage for the two grazing allotments (approximately 615,986 acres).

7.6 Air Quality/Climate Change/Greenhouse Gases

National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment are set by U.S. Environmental Protection Agency (EPA). The six criteria pollutants are carbon monoxide (CO), lead, nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), and sulfur dioxide (SO_2). Sources of PM_{10} and $PM_{2.5}$ include the suspension of dust through ground-disturbing activities, road dust from vehicles, and emissions from internal combustion engines. The EPA defines attainment areas as geographic areas that meet or exceed the NAAQS. Nonattainment areas refer to areas that do not meet this standard (EPA 2022). Maintenance areas are those that were once in nonattainment, but now meet the current standards. The Project is not located in any nonattainment or maintenance areas for any of the criteria pollutants.

Renewable energy projects under Arizona Department of Environmental Quality's (ADEQ) jurisdiction may be subject to air permitting requirements depending on the type of equipment used and the associated level of air emissions. Solar projects may be subject to air permitting because of the use of process-support boilers and emergency-use engines. It is possible such activities can be covered by the ADEQ's general air quality permits, which are typically pre-written for a source category.

7.7 Noise

The Project area is positioned in a location that would predominantly isolate the solar facility from sensitive noise receptors. Outside the Project area, the nearest residences are located approximately 0.2 miles to the south in White Hills and includes multiple residences.

7.8 Visual Resources

The term "visual resources" refers to the composite of basic terrain, geologic, and hydrologic features; vegetative patterns; and built features that influence the visual appeal of a landscape. Visual impacts are defined as the change to the visual environment resulting from the introduction of modifications to the landscape. The Project area lies within the Basin and Range physiographic province, which is characterized by steep, narrow, isolated mountain ranges—generally on a north-south axis—separated by wide, flat, sediment-filled valleys or basins (EPA 2013).

The Project area is located in the Detrital Valley, an elongate north-south alluvial basin in the Mexican Highland section of the Basin and Range physiographic province where the ground consists primarily of tan, light brown, and orange sands and rocks incised by several small- to moderate-sized drainages that run off the White Hills landforms from the east. The local vegetation is made up predominantly of mid-height olive green creosote, white bursage, ironwood, forbs, yuccas, and grasses.

The notable natural features within and surrounding the Project area include the White Hills to the east, and the Black Mountains to the west/southwest. The surrounding landforms and mountain ranges are rugged with hard, angular, and predominantly pyramidal shapes consisting of dark greys, blacks, browns, and reds. The built environment consists of scattered residences throughout the White Hills as well as the Mohave County Wind Farm surrounding the Project area. Other built features include US 93, which runs directly adjacent to the Project area to the west.

The BLM uses the Visual Resource Management (VRM) System to classify and manage visual resources on lands under its jurisdiction. The VRM System involves inventorying scenic values, establishing management objectives for those values through the resource management planning process, and then evaluating proposed activities to determine whether they conform to the management objectives (BLM 1984). The BLM's VRM System incorporates scenic quality, viewer sensitivity, and visual distance zones to identify overall visual resource inventory (VRI) classes. These classes (I, II, III, and IV) represent the relative value of the existing visual landscape, as well as the visual resource baseline from which to measure impacts that a proposed project may have on these values.

In its planning process, the BLM weighs visual and competing resource values to allocate the VRM classes with associated management class objectives for a given area's visual setting. The entirety of Project area is classified as VRM Class IV. The objective of VRM Class IV is to provide for management activities that require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

7.9 Water Resources

Based on data from the National Hydrography Dataset and ADEQ water quality ratings, the Project area does not cross any perennial waters but crosses a total of 11.6 miles of unnamed intermittent and ephemeral waters. The Project area is not located within ¼-mile of any Impaired or Non-Attaining Waters on ADEQ's 2020-2022 Integrated 305(b) Assessment and 303(d) Listing Report or any Outstanding Arizona Waters. The entire Project area is located in the 500-year floodplain (Zone X; 4,255 acres).

7.9.1 Clean Water Act/Section 404 Compliance

The United States Army Corps of Engineers (USACE) is responsible for regulating compliance with Section 404 of the Clean Water Act (CWA) concerning potential impacts to Waters of the United States (WOTUS). The USACE regulates activities that discharge dredged or fill materials into jurisdictional WOTUS and issues permits for these discharges under Section 404 of the CWA. The Applicant would prepare and submit a Preliminary Jurisdictional Delineation (PJD) for the Project area. The results of the PJD would be used to review the level of encroachment into potential WOTUS by the Project and to assess the Section 404 permitting necessary for Project activities. Should a Section 404 permit be needed, it is anticipated that a Nationwide Permit (NWP) No. 12 (Utility Line Activities), NWP No. 14 (Linear Transportation projects), or NWP No. 51 (Land-Based Renewable Energy Generation Facilities) would be used. Under all three permits, a pre-construction notification would be required for impacts greater than 0.1 acres and less than 0.5 acres. If impacts to WOTUS exceed 0.5 acres, an Individual Permit would need to be prepared and submitted to the USACE.

7.9.2 Clean Water Act/Section 402 Compliance

ADEQ provides Section 401 Water Quality Certification under the CWA for discharges within WOTUS for all nontribal lands in Arizona. Section 401 Water Quality Certification for the Project would be conditionally certified by ADEQ under the USACE NWP; therefore, individual certification would not be required. Construction

projects that disturb more than one acre of land require an AZPDES Construction General Permit (AZG2020-001) and development of a SWPPP. Because the Project would disturb more than 1 acre of land, the Applicant would prepare a Construction General Permit and SWPPP for submittal to ADEQ. The SWPPP would be completed before filing a Notice of Intent with ADEQ, which is required before beginning construction activities.

7.9.3 Ground Water

The Project would require up to 200 acre-feet (AF) of water during the approximate 24-month construction period and up to approximately two AF per year for O&M activities. Water is anticipated to be purchased from a commercial source or a user with an existing appropriation. It would then be trucked to the Project site where it would be stored in an on-site water storage tank.

7.10 Recreation

There are no known recreation facilities, such as trails or campgrounds, known to occur within or adjacent to the Project area. The Black Mountains Recreation Area is located approximately six miles to the southwest of the Project area and includes several trails for hiking, biking, and equestrian use. There are opportunities for dispersed recreation activities, such as hiking, rock collecting, sightseeing, hunting, camping, climbing, mountain biking, wildlife viewing, and off-highway vehicle (OHV) use throughout the KFO area and the lands administered by the BLM are managed to provide a wide range of quality recreation opportunities.

7.11 Special Management Areas

Special management areas (SMAs) are those lands that are managed for specific conservation, preservation, or recreational uses, and are typically public lands managed by the BLM or other federal, state, and local governmental entities. SMAs include National Monuments, Wilderness Management Area (WMAs), National Conservation Areas (NCAs), Areas of Critical Environmental Concern (ACECs), Wilderness Areas, and Wilderness Study Areas (WSAs). No SMAs are located within or adjacent to the Project area. The Project area is located approximately 6 miles northeast of the Black Mountains ACEC and approximately 11 miles to the south of the Mount Wilson Wilderness Area. No lands with wilderness characteristics are located within or adjacent to the Project area. The Project area is located approximately 5 miles northeast of Mount Perkins and approximately 10 miles southwest of Trail Rapid Hills.

7.12 Hazardous Materials

A preliminary desktop review using available online resources was conducted for the Project area and vicinity. According to the EPA's NEPAssist tool (EPA 2022) and the ADEQ eMaps tool (ADEQ 2022), there are no known hazardous waste/material sites within the vicinity of the Project (ADEQ 2022 and EPA 2022).

7.13 Farmlands (Prime or Unique) and Soil Resources

The Farmland Protection Policy Act (FPPA) is intended to minimize the impact of federal programs on the unnecessary and irreversible conversion of farmland to nonagricultural uses. For the purposes of the FPPA, farmland includes prime farmland, unique farmland, and farmland of statewide or local importance. Farmland does not have to be currently used for cropland to be subject to FPPA requirements. It can also be forest land, pastureland, cropland, or other land, but not open water or urban developed land. Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops (USDA 2022).

The Project area consists of seven different soil types including Arizo-Detrital-Nickel complex (approximately 1,927.5 acres), Arizo-Riverwash complex (approximately 229.2 acres), Gotchell-Sunstroke complex

(approximately 352.6 acres), Nickel-Skelon family-Detrital complex (approximately 134.6 acres), Skelon-Pinaleno families complex (approximately 16.7 acres), Storybrook very gravelly loam (approximately 1,584.8 acres), and Tumarion-Nickel family complex loam (approximately 10.5 acres). None of the soils within the Project area are designated as prime or unique.

8.0 REFERENCES

Arizona Game and Fish Department (AGFD). 2023. On-line Environmental Review Tool. Accessed February 2023 at: https://azhgis2.esri.com/content/home.

Arizona Department of Environmental Quality (ADEQ) eMaps. 2022. Web map. Accessed October 2022 at: https://www.azdeq.gov/emaps.

Avian Power Line Interaction Committee (APLIC). 2006. *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006.* Edison Electric Institute, APLIC, and the California Energy Commission. Washington, D.C and Sacramento, CA. Accessed September 2022 at: https://www.nrc.gov/docs/ML1224/ML12243A391.pdf.

Bureau of Land Management (BLM). 1984. *Visual Resource Management*. Manual 8400. U.S. Department of the Interior, BLM, Washington, D.C.

BLM. 2008. National Environmental Policy Act Handbook. H-1790-1. U.S. Department of the Interior, Bureau of Land Management, Washington, D.C. January.

BLM. 2013a. Mojave Basin and Range Rapid Ecoregional Assessment Final Report. Accessed August 2022 at: https://www.nrc.gov/docs/ML1521/ML15211A622.pdf.

BLM. 2013b. Renewable Arizona: Restoration Design Energy Project. Record of Decision and Approved Resource Management Plan Amendments. Accessed January 10, 2023 at: https://eplanning.blm.gov/public_projects/nepa/79922/107093/131007/RDEP-ROD-ARMP.pdf.

BLM and Department of Energy (DOE) 2012. Final Programmatic Environmental Impact Statement (PEIS) for Solar Energy Development in Six Southwestern States. Accessed October 2022 at: https://solareis.anl.gov/documents/fpeis/index.cfm.

eBird. 2022. eBird: An online database of bird distribution and abundance [web application]. eBird, Cornell Lab of Ornithology, Ithaca, New York. Accessed November 2022 at: http://www.ebird.org.

Environmental Protection Agency (EPA). 2013. Level III Ecoregions of the Continental United States (map), Revised April 2013. National Health and Environmental Effects Research Laboratory, Corvallis, Oregon. Accessed October 2022 at: https://pubs.usgs.gov/tm/04/c03/virtual_CD/useco.pdf.

EPA. 2022. NEPAssist. Web map. Accessed October 2022 at: https://nepassisttool.epa.gov/nepassist/nepamap.aspx.

iNaturalist. 2022. iNaturalist: A community for naturalists [web application]. California Academy of Science, San Francisco, California. Accessed November 2022 at: https://www.inaturalist.org.

Kirvan, Chad V., A. E. (Gene) Rogge, Kirsten Johnson, and Cassandra J. Albush. 2011. *Cultural Resource Survey for the Mohave County Wind Farm Project, Arizona*. Cultural Resource Report 2011-6(AZ). URS, Phoenix, Arizona.

U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). 2022. Web Soil Survey. Accessed October 2022 at: https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.

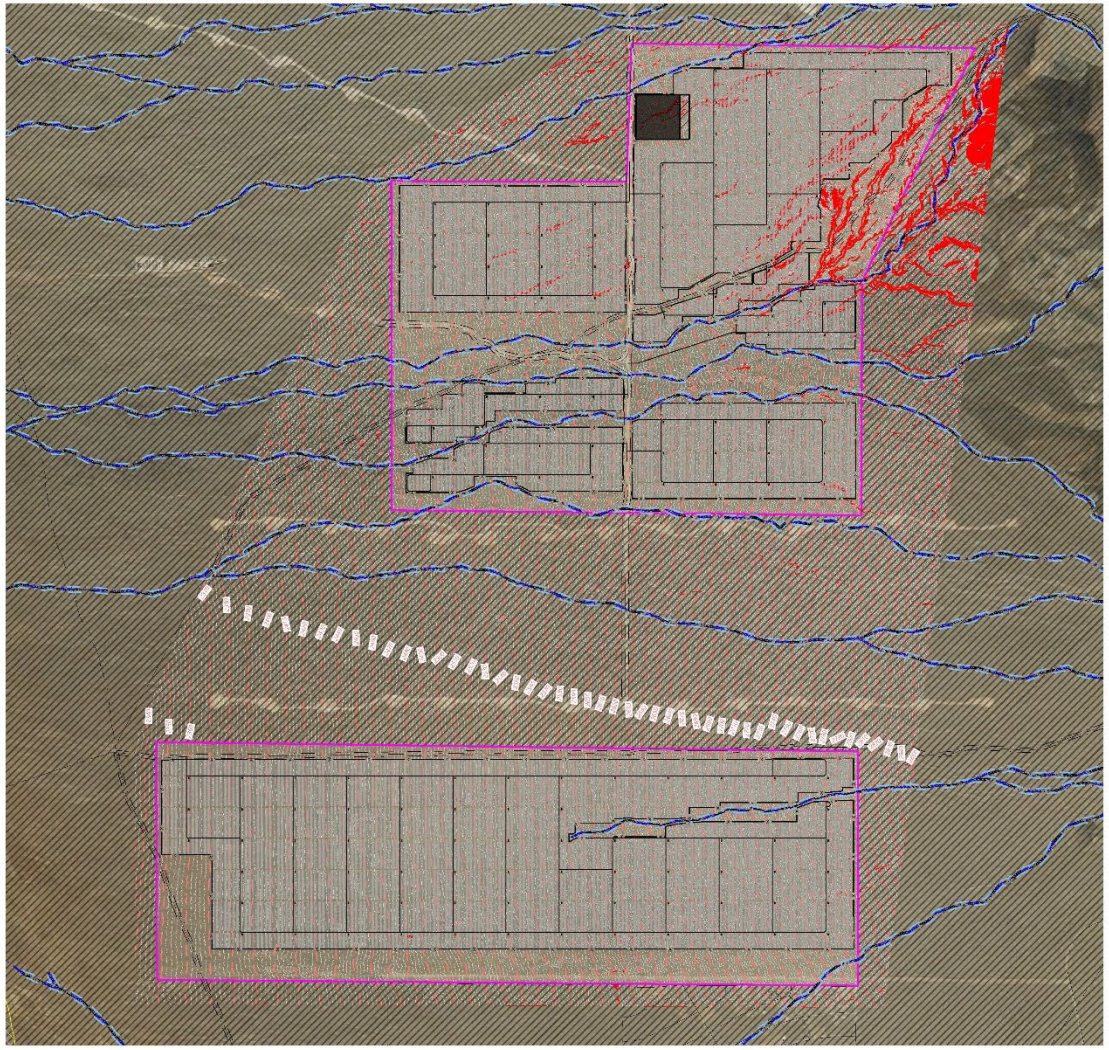
U.S. Fish and Wildlife Service (USFWS). 2023. List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project. USFWS' Information for Planning and Consultation (IPAC) System Receipts. Accessed February 2023 at: http://ecos.fws.gov/ipac/.

U.S. Forest Service (USFS). 2003. Low-Volume Roads Engineering, Best Management Practices Field Guide. Accessed November 2022 at: https://usaidgems.org/Documents/EGSSAALAC/English_Resources/Ref_and_Res/Ch%203%20ref%20-%20Low%20Volume%20Road%20Engineering%20BMP%20Field%20Guide,%20complete,%20Keller-Sherar.pdf.

U.S. Geological Survey (USGS). 2016. Southwest Regional Gap Analysis Project. Accessed November 2022 at: http://swregap.org/.

APPENDIX A

Preliminary Conceptual Design



LEGEND:

- PROJECT BOUNDARY
- NON-PAR. ROW'S INCL. PARCELS
- EX. STREAM CHANNEL
- EX. NWI WETLAND
- EX. 10' INDEX CONTOUR
- EX. 2' INTERVAL CONTOUR
- SLOPES > 5%
- ROADWAY CENTERLINES
- WIND ACCESS ROAD CENTERLINES
- ASSUMED ROAD SETBACK LINES
- WETLAND SETBACK LINES
- ASSUMED PROPERTY LINE SETBACK
- FEMA FLOOD ZONE
- PROPOSED BATTERY STORAGE AREA
- PROPOSED LAYDOWN YARD
- PROPOSED SOLAR ARRAY
- PROPOSED FENCE
- PROPOSED ROAD
- PROPOSED INVERTER SKID

ARRAY SETBACKS	
ROAD CENTERLINE	50
WIND ACCESS ROAD CENTERLINE	75
PROJECT BOUNDARY	100
WETLANDS	50

SYSTEM SPECIFICATIONS	
DC SYSTEM SIZE (kW)	585,023
AC SYSTEM SIZE (kW) @ INVERTER	517,200
AC SYSTEM SIZE (kW) @POI	450,000
MODULE MODEL	BIFACIAL MONO PERC
MODULE RATING (W)	540
MODULES PER STRING	27
STRING QUANTITY	40,729
- 3-STRING RACK QUANTITY	12,773
- 2-STRING RACK QUANTITY	909
MODULE QUNATITY	1,083,375
INVERTER MANUFACTURER	SUNGROW
INVERTER RATING (kVA)	3600
INVERTER QUANTITY	142
GCR	30%
PITCH (ft)	24.96'
DC/AC RATIO @ INVERTER	1.14
DC/AC RATIO @ POI	1.30
RACKING TYPE	SINGLE-AXIS TRACKER
RACKING CONFIGURATION	1P

NOTE: DC AND AC SYSTEM SIZE AND INVERTER QUANTITY ARE SPLIT EVENLY BETWEEN THE NORTH AND SOUTH PHASES.

Westwood

reNRG

PREPARED FOR:

852 Franklin Ave, Ste 212
Franklin Lakes, New Jersey 07417

REVISIONS:

#	DATE	COMMENT
A	10/21/2022	CONCEPTUAL LAYOUT AND CONSTRAINTS MAP

0 1500 3000 6000

White Hills Solar
Mohave County, Arizona

Preliminary Conceptual Layout and Constraints Map

NOT FOR CONSTRUCTION

DATE: 10/21/2022

SHEET: 1 REV: A

APPENDIX B

Plant and Wildlife Species Observed in Project Area

Plant and Wildlife Species Observed within the Project Area on February 7, 2023

Table 1. Plant species observed during the biological survey

Common Name	Scientific Name
White bursage	*Ambrosia dumosa*
Desert marigold	*Baileya multiradiata*
Buckhorn cholla	*Cylindropuntia acanthocarpa*
Silver cholla	*Cylindropuntia echinocarpa*
Branched pencil cholla	*Cylindropuntia ramosissima*
Cottontop cactus	*Echinocactus polycephalus*
Engelmann's hedgehog cactus	*Echinocereus decumbens*
Brittlebush	*Encelia farinosa*
Nevada jointfir	*Ephedra nevadensis*
Desert trumpet	*Eriogonum inflatum*
California barrel cactus	*Ferocactus acanthodes*
Creosotebush	*Larrea tridentata*
Beavertail pricklypear	*Opuntia basilaris*
Puncturevine	*Tribulus terrestris*
Joshua tree	*Yucca brevifolia*

Table 2. Wildlife species (or sign) observed during the biological survey

Common Name	Scientific Name
Coyote (sign)	*Canis latrans*
Common raven	*Corvus corax*
Black-tailed jackrabbit	*Lepus californicus*
Curve-billed thrasher	*Toxostoma curvirostre*
common side-blotched lizard	*Uta stansburiana*

APPENDIX C

U.S. Fish and Wildlife Service and Arizona Game and Fish Online Review Reports

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arizona Ecological Services Field Office
9828 North 31st Ave
#c3
Phoenix, AZ 85051-2517
Phone: (602) 242-0210 Fax: (602) 242-2513

In Reply Refer To:
Project Code: 2023-0011654
Project Name: White Hills Solar

February 09, 2023

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The Fish and Wildlife Service (Service) is providing this list under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). The list you have generated identifies threatened, endangered, proposed, and candidate species, and designated and proposed critical habitat, that *may* occur within the One-Range that has been delineated for the species (candidate, proposed, or listed) and it's critical habitat (designated or proposed) with which your project polygon intersects. These range delineations are based on biological metrics, and do not necessarily represent exactly where the species is located. Please refer to the species information found on ECOS to determine if suitable habitat for the species on your list occurs in your project area.

The purpose of the Act is to provide a means whereby threatened and endangered species and the habitats upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of Federal trust resources and to determine whether projects may affect federally listed species and/or designated critical habitat. A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.
If the Federal action agency determines that listed species or critical habitat *may be affected* by a federally funded, permitted or authorized activity, the agency must consult with us pursuant to 50 CFR 402. Note that a "may affect" determination includes effects that may not be adverse and that may be beneficial, insignificant, or discountable. An effect exists even if only one individual

or habitat segment may be affected. The effects analysis should include the entire action area, which often extends well outside the project boundary or "footprint." For example, projects that involve streams and river systems should consider downstream affects. If the Federal action agency determines that the action may jeopardize a *proposed* species or may adversely modify *proposed* critical habitat, the agency must enter into a section 7 conference. The agency may choose to confer with us on an action that may affect proposed species or critical habitat.

Candidate species are those for which there is sufficient information to support a proposal for listing. Although candidate species have no legal protection under the Act, we recommend that they be considered in the planning process in the event they become proposed or listed prior to project completion. More information on the regulations (50 CFR 402) and procedures for section 7 consultation, including the role of permit or license applicants, can be found in our Endangered Species Consultation Handbook at: https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf.

We also advise you to consider species protected under the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-712) and the Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. 668 *et seq.*). The MBTA prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when authorized by the Service. The Eagle Act prohibits anyone, without a permit, from taking (including disturbing) eagles, and their parts, nests, or eggs. Currently 1,026 species of birds are protected by the MBTA, including the western burrowing owl (*Athene cunicularia hypugaea*). Protected western burrowing owls can be found in urban areas and may use their nest/burrows year-round; destruction of the burrow may result in the unpermitted take of the owl or their eggs.

If a bald eagle or golden eagle nest occurs in or near the proposed project area, our office should be contacted for Technical Assistance. An evaluation must be performed to determine whether the project is likely to disturb or harm eagles. The National Bald Eagle Management Guidelines provide recommendations to minimize potential project impacts to bald eagles (see https://www.fws.gov/law/bald-and-golden-eagle-protection-act and https://www.fws.gov/program/eagle-management).

The Division of Migratory Birds (505/248-7882) administers and issues permits under the MBTA and Eagle Act, while our office can provide guidance and Technical Assistance. For more information regarding the MBTA, BGEPA, and permitting processes, please visit the following web site: https://www.fws.gov/program/migratory-bird-permit. Guidance for minimizing impacts to migratory birds for communication tower projects (e.g. cellular, digital television, radio, and emergency broadcast) can be found at https://www.fws.gov/media/recommended-best-practices-communication-tower-design-siting-construction-operation.

The U.S. Army Corps of Engineers (Corps) may regulate activities that involve streams (including some intermittent streams) and/or wetlands. We recommend that you contact the Corps to determine their interest in proposed projects in these areas. For activities within a National Wildlife Refuge, we recommend that you contact refuge staff for specific information about refuge resources, please visit this link or visit https://www.fws.gov/program/national-

wildlife-refuge-system to locate the refuge you would be working in or around.

If your action is on tribal land or has implications for off-reservation tribal interests, we encourage you to contact the tribe(s) and the Bureau of Indian Affairs (BIA) to discuss potential tribal concerns, and to invite any affected tribe and the BIA to participate in the section 7 consultation. In keeping with our tribal trust responsibility, we will notify tribes that may be affected by proposed actions when section 7 consultation is initiated. For more information, please contact our Tribal Coordinator, John Nystedt, at 928/556-2160 or John_Nystedt@fws.gov.

We also recommend you seek additional information and coordinate your project with the Arizona Game and Fish Department. Information on known species detections, special status species, and Arizona species of greatest conservation need, such as the western burrowing owl and the Sonoran desert tortoise (*Gopherus morafkai*) can be found by using their Online Environmental Review Tool, administered through the Heritage Data Management System and Project Evaluation Program (https://www.azgfd.com/wildlife/planning/projevalprogram/).

We appreciate your concern for threatened and endangered species. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office. If we may be of further assistance, please contact our Flagstaff office at 928/556-2157 for projects in northern Arizona, our general Phoenix number 602/242-0210 for central Arizona, or 520/670-6144 for projects in southern Arizona.

Sincerely,
/s/

Heather Whitlaw
Field Supervisor
Attachment

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Arizona Ecological Services Field Office
9828 North 31st Ave
#c3
Phoenix, AZ 85051-2517
(602) 242-0210

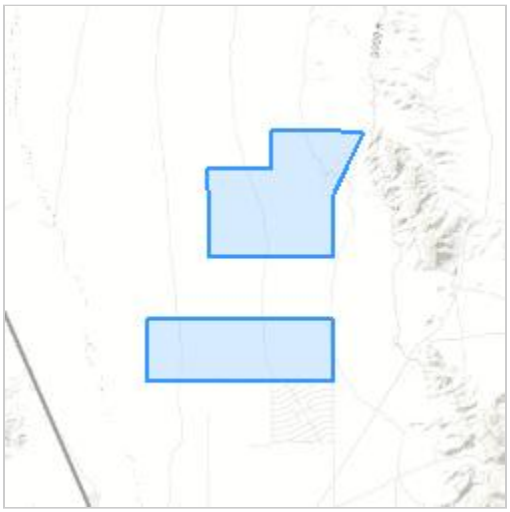
Project Summary

Project Code: 2023-0011654
Project Name: White Hills Solar
Project Type: Power Gen - Solar
Project Description: reNRG Partners (Applicant) proposes to construct, own, operate, and decommission the White Hills #1 and #2 Solar Project (Project), consisting of up to a nominal 275-megawatt (MW) alternating current (MWac) solar photovoltaic (PV) power generating facility approximately 40 miles northwest of Kingman in Mohave County, Arizona.

The Project would be located on approximately 4,300 acres of lands administered by the Bureau of Land Management (BLM). The Project boundary covers a larger area than required for the solar field to allow for adjustments in the facility layout to minimize environmental impacts based on the National Environmental Policy Act (NEPA) analysis.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@35.75690505,-114.44251931806718,14z



Counties: Mohave County, Arizona

Endangered Species Act Species

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
California Least Tern *Sterna antillarum browni* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8104	Endangered
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Northern Mexican Gartersnake *Thamnophis eques megalops* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7655	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Long-eared Owl *asio otus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3631	Breeds Mar 1 to Jul 15

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

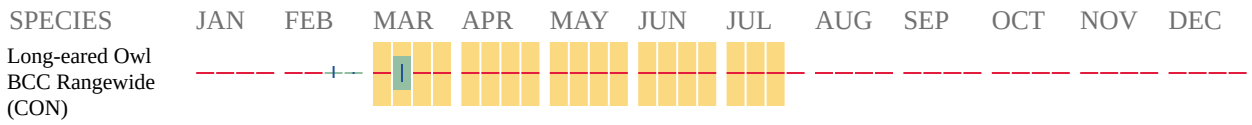
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

■ probability of presence ■ breeding season | survey effort – no data



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

RIVERINE

- R4SBC

IPaC User Contact Information

Agency:	Bureau of Land Management
Name:	John Kauphusman
Address:	51 West 3rd Street
Address Line 2:	Suite 450
City:	Tempe
State:	AZ
Zip:	85281
Email	jkauphusman@logansimpson.com
Phone:	5074599145

Arizona Environmental Online Review Tool Report

Arizona Game and Fish Department Mission
To conserve Arizona's diverse wildlife resources and manage for safe, compatible outdoor recreation opportunities for current and future generations.

Project Name:
White Hills Prelim

Project Description:
Prelim Review only

Project Type:
Education/Information

Contact Person:
Laura Stewart

Organization:
Logan Simpson

On Behalf Of:
CONSULTING

Project ID:
HGIS-17543

Please review the entire report for project type and/or species recommendations for the location information entered. Please retain a copy for future reference.

Disclaimer:

1. This Environmental Review is based on the project study area that was entered. The report must be updated if the project study area, location, or the type of project changes.
2. This is a preliminary environmental screening tool. It is not a substitute for the potential knowledge gained by having a biologist conduct a field survey of the project area. This review is also not intended to replace environmental consultation (including federal consultation under the Endangered Species Act), land use permitting, or the Departments review of site-specific projects.
3. The Departments Heritage Data Management System (HDMS) data is not intended to include potential distribution of special status species. Arizona is large and diverse with plants, animals, and environmental conditions that are ever changing. Consequently, many areas may contain species that biologists do not know about or species previously noted in a particular area may no longer occur there. HDMS data contains information about species occurrences that have actually been reported to the Department. Not all of Arizona has been surveyed for special status species, and surveys that have been conducted have varied greatly in scope and intensity. Such surveys may reveal previously undocumented population of species of special concern.
4. Arizona Wildlife Conservation Strategy (AWCS), specifically Species of Greatest Conservation Need (SGCN), represent potential species distribution models for the State of Arizona which are subject to ongoing change, modification and refinement. The status of a wildlife resource can change quickly, and the availability of new data will necessitate a refined assessment.

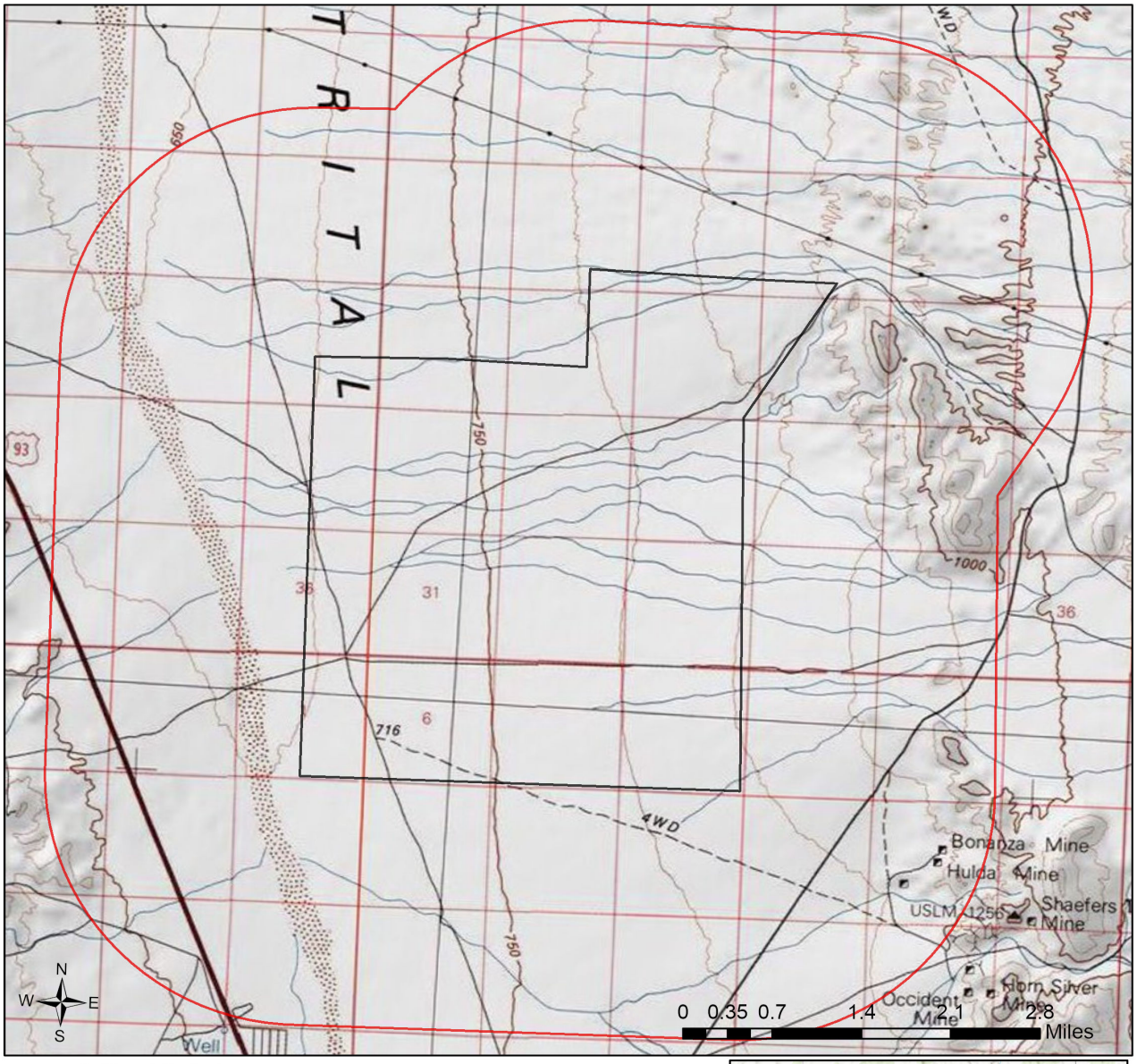
Locations Accuracy Disclaimer:
Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Report is solely responsible for the project location and thus the correctness of the Project Review Report content.

Recommendations Disclaimer:

1. The Department is interested in the conservation of all fish and wildlife resources, including those species listed in this report and those that may have not been documented within the project vicinity as well as other game and nongame wildlife.
2. Recommendations have been made by the Department, under authority of Arizona Revised Statutes Title 5 (Amusements and Sports), 17 (Game and Fish), and 28 (Transportation).
3. Potential impacts to fish and wildlife resources may be minimized or avoided by the recommendations generated from information submitted for your proposed project. These recommendations are preliminary in scope, designed to provide early considerations on all species of wildlife.
4. Making this information directly available does not substitute for the Department's review of project proposals, and should not decrease our opportunity to review and evaluate additional project information and/or new project proposals.
5. Further coordination with the Department requires the submittal of this Environmental Review Report with a cover letter and project plans or documentation that includes project narrative, acreage to be impacted, how construction or project activity(s) are to be accomplished, and project locality information (including site map). Once AGFD had received the information, please allow 30 days for completion of project reviews. Send requests to:
   Project Evaluation Program, Habitat Branch
   Arizona Game and Fish Department
   5000 West Carefree Highway
   Phoenix, Arizona 85086-5000
   Phone Number: (623) 236-7600
   Fax Number: (623) 236-7366
   Or
   PEP@azgfd.gov
6. Coordination may also be necessary under the National Environmental Policy Act (NEPA) and/or Endangered Species Act (ESA). Site specific recommendations may be proposed during further NEPA/ESA analysis or through coordination with affected agencies

White Hills Prelim

USA Topo Basemap With Locator Map



Buffered Project Boundary

Project Boundary

Project Size (acres): 8,229.84

Lat/Long (DD): 35.7771 / -114.4446

County(s): Mohave

AGFD Region(s): Kingman

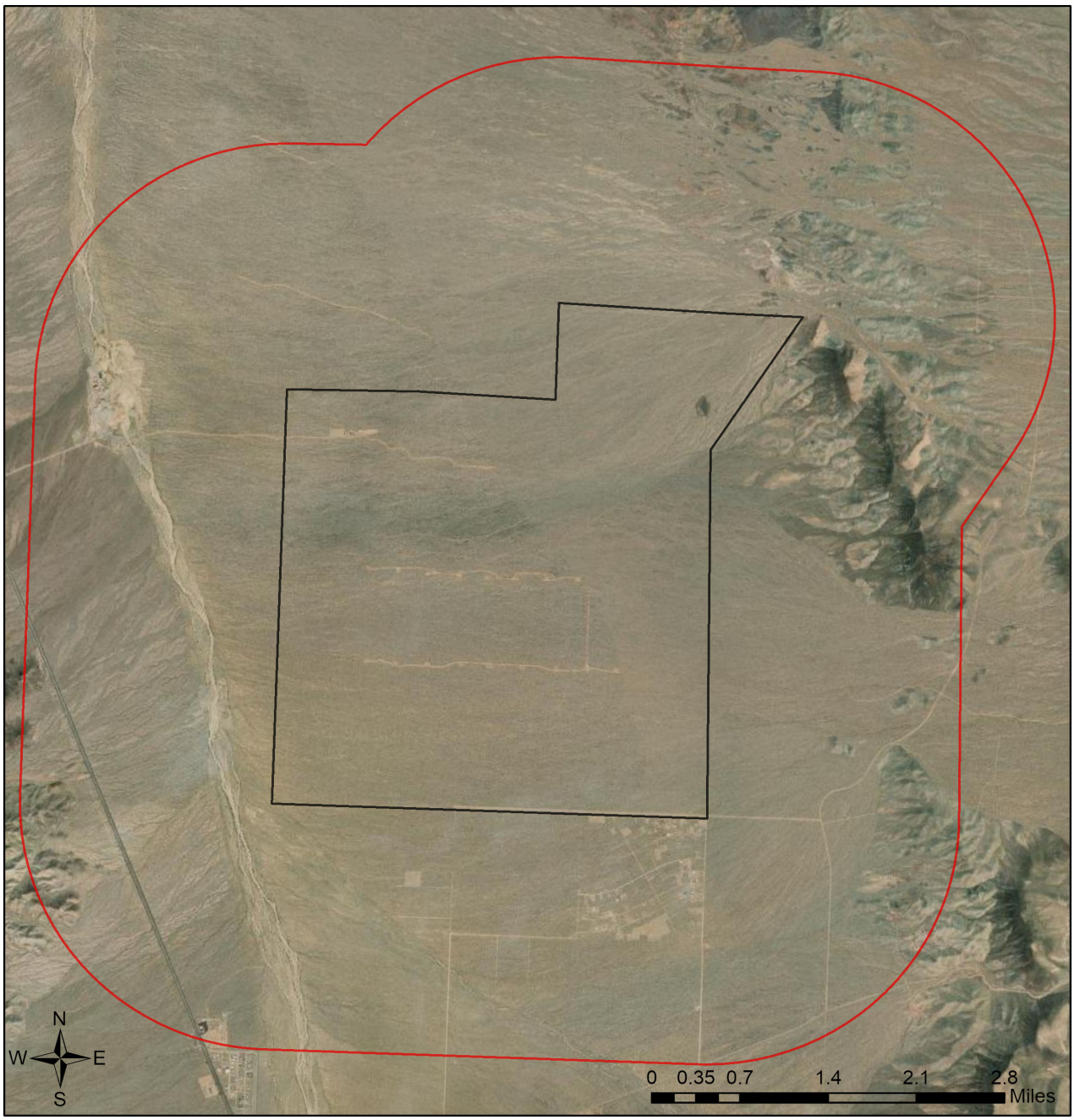
Township/Range(s): T27N, R20W; T27N, R21W; T28N, R20W +

USGS Quad(s): SENATOR MOUNTAIN SW; WHITE HILLS WEST

Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

White Hills Prelim

Web Map As Submitted By User



Buffered Project Boundary
Project Boundary

Project Size (acres): 8,229.84
Lat/Long (DD): 35.7771 / -114.4446
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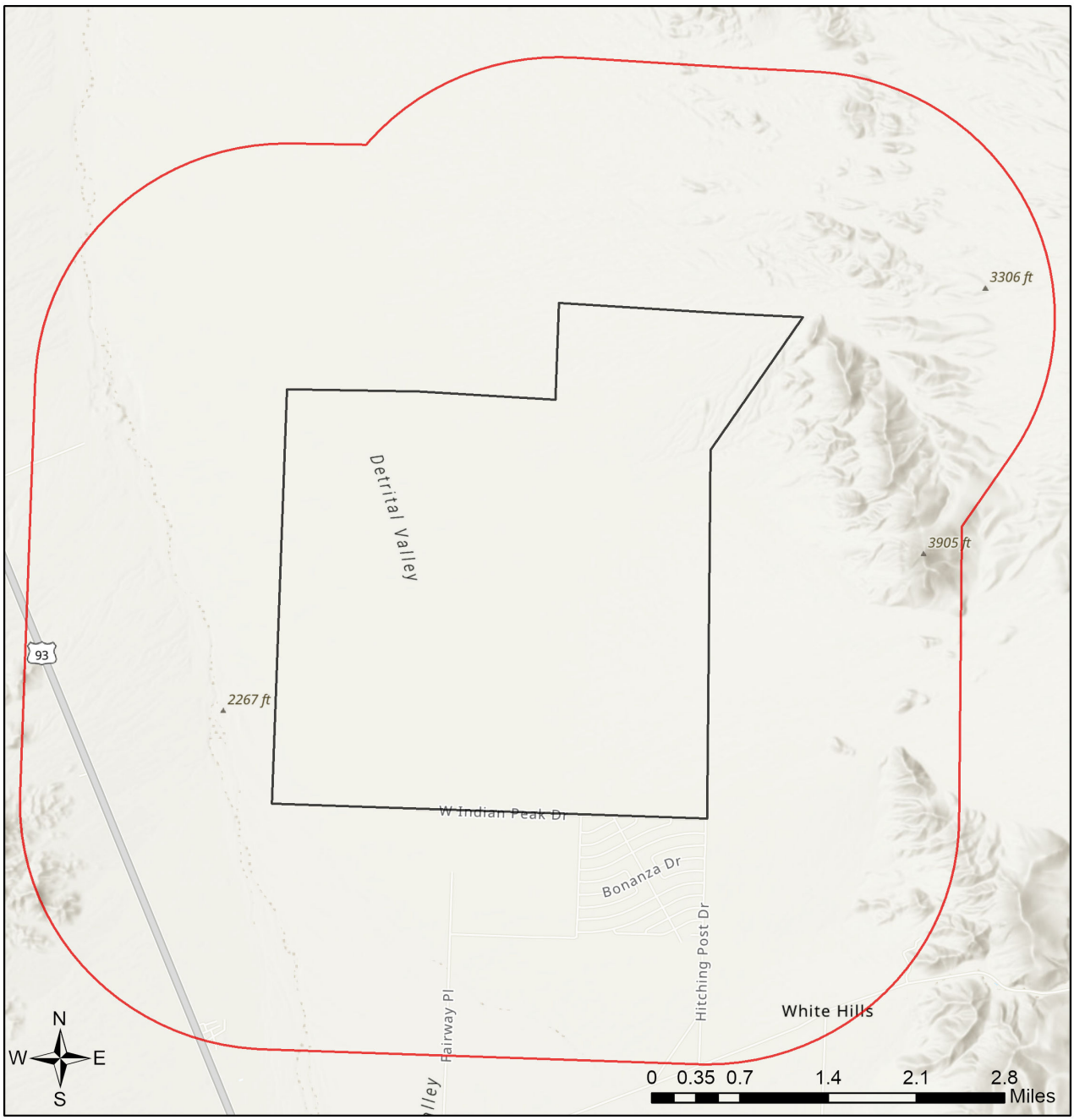
USGS Quad(s): SENATOR MOUNTAIN SW; WHITE HILLS WEST

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

White Hills Prelim

Important Areas



- Buffered Project Boundary
- Project Boundary
- Important Bird Areas
- Critical Habitat
- Pinal County Riparian
- Important Connectivity Zones
- Wildlife Connectivity

Project Size (acres): 8,229.84

Lat/Long (DD): 35.7771 / -114.4446

County(s): Mohave

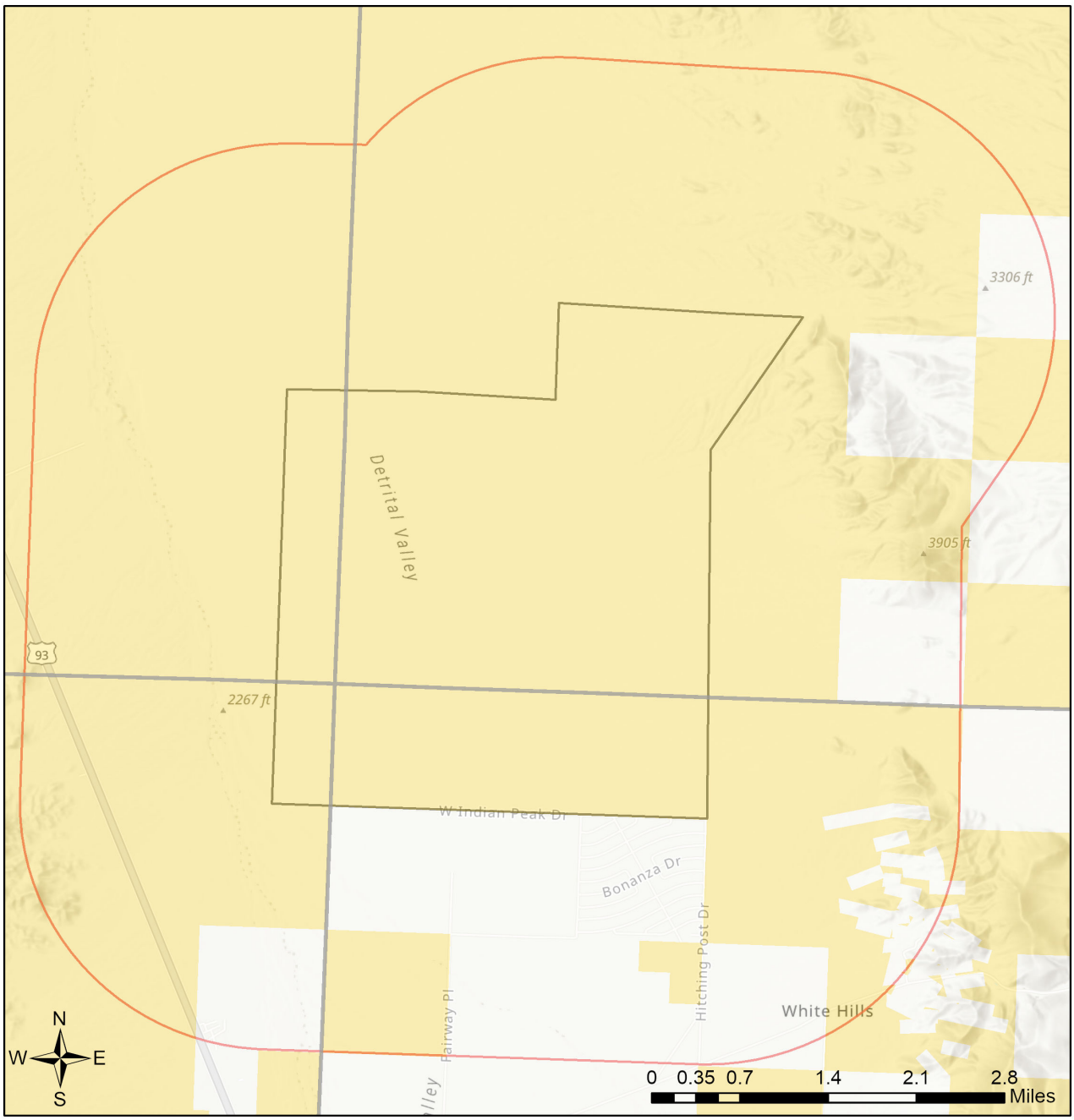
AGFD Region(s): Kingman

Township/Range(s): T27N, R20W; T27N, R21W; T28N, R20W +

USGS Quad(s): SENATOR MOUNTAIN SW; WHITE HILLS WEST

White Hills Prelim

Township/Ranges and Land Ownership



- Buffered Project Boundary
- Project Boundary
- AZ Game & Fish Dept.
- BLM
- BOR
- Indian Res.
- Military
- Mixed/Other
- National Park/Mon.
- Private
- State & Regional Parks
- State Trust
- US Forest Service
- Wildlife Area/Refuge
- Township/Ranges

Project Size (acres): 8,229.84

Lat/Long (DD): 35.7771 / -114.4446

County(s): Mohave

AGFD Region(s): Kingman

Township/Range(s): T27N, R20W; T27N, R21W; T28N, R20W +

USGS Quad(s): SENATOR MOUNTAIN SW; WHITE HILLS WEST

Special Status Species Documented within 2 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Aquila chrysaetos	Golden Eagle	BGA		S		2
Gopherus morafkai	Sonoran Desert Tortoise	CCA	S	S		1

Note: Status code definitions can be found at https://www.azgfd.com/wildlife/planning/wildlifeguidelines/statusdefinitions/
.

No Special Areas Detected
No special areas were detected within the project vicinity.

Species of Greatest Conservation Need Predicted that Intersect with Project Footprint as Drawn, based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Ammospermophilus leucurus cinnamomeus	White-tailed Antelope Squirrel					2
Antilocapra americana americana	American Pronghorn					2
Aquila chrysaetos	Golden Eagle			S		2
Artemisiospiza nevadensis	Sagebrush Sparrow					
Asio otus	Long-eared Owl					2
Athene cunicularia hypugaea	Western Burrowing Owl	SC	S	S		2
Auriparus flaviceps	Verdin					2
Buteo regalis	Ferruginous Hawk	SC		S		2
Calypte costae	Costa's Hummingbird					2
Campylorhynchus brunneicapillus	Cactus Wren					2
Coccyzus americanus	Yellow-billed Cuckoo (Western DPS)					
Colaptes chrysoides	Gilded Flicker			S		2
Corynorhinus townsendii pallescens	Pale Townsend's Big-eared Bat	SC	S	S		1
Empidonax wrightii	Gray Flycatcher					2
Eumops perotis californicus	Greater Western Bonneted Bat					
Falco mexicanus	Prairie Falcon					2
Falco peregrinus anatum	American Peregrine Falcon					
Falco sparverius	American Kestrel					2
Gopherus agassizii	Mohave Desert Tortoise					
Gymnorhinus cyanocephalus	Pinyon Jay			S		2
Idionycteris phyllotis	Allen's Lappet-browed Bat	SC	S	S		2
Lanius ludovicianus	Loggerhead Shrike	SC				2
Lithobates onca	Relict Leopard Frog	CCA		S		1
Lithobates yavapaiensis	Lowland Leopard Frog	SC	S	S		1
Megascops kennicottii	Western Screech-owl					
Melanerpes uropygialis	Gila Woodpecker					2
Melospiza lincolnii	Lincoln's Sparrow					2
Myotis yumanensis	Yuma Myotis	SC				2

Species of Greatest Conservation Need Predicted that Intersect with Project Footprint as Drawn, based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Perognathus amplus	Arizona Pocket Mouse					2
Spizella breweri	Brewer's Sparrow					2
Tadarida brasiliensis	Brazilian Free-tailed Bat					
Toxostoma bendirei	Bendire's Thrasher					2
Toxostoma lecontei	LeConte's Thrasher			S		2

Species of Economic and Recreation Importance Predicted that Intersect with Project Footprint as Drawn

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Callipepla gambelii	Gambel's Quail					
Odocoileus hemionus	Mule Deer					
Puma concolor	Mountain Lion					
Zenaida asiatica	White-winged Dove					
Zenaida macroura	Mourning Dove					

Project Type: Education/Information

Project Type Recommendations:
Based on the project type entered (information/education), no impacts to land or water resources are anticipated and therefore no project type recommendations or mitigation measures are provided. If you entered this project type by mistake, please contact the PEP program to change the project type for you.

Project Location and/or Species Recommendations:
HDMS records indicate that one or more **Listed, Proposed, or Candidate** species or **Critical Habitat** (Designated or Proposed) have been documented in the vicinity of your project. The Endangered Species Act (ESA) gives the US Fish and Wildlife Service (USFWS) regulatory authority over all federally listed species. Please contact USFWS Ecological Services Offices at https://www.fws.gov/office/arizona-ecological-services or:

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HDMS records indicate that **Sonoran Desert Tortoise** have been documented within the vicinity of your project area. Please review the Tortoise Handling Guidelines found at: https://www.azgfd.com/wildlife/nongamemanagement/tortoise/