U.S. Department of the Interior
Bureau of Land Management

Las Vegas Field Office

Environmental Assessment

Final Environmental Assessment

DOI-BLM-NV-S010-2022-0019-EA

Arida – Mohave Transmission Line

Case File Number N-99777

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Chapter 1 Introduction

This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental effects of the Proposed Action, which consists of an approximately 8.8-mile 500kV transmission line between the proposed Arida Substation and the existing Mohave Substation near Laughlin, Nevada referred to as the Arida – Mohave Transmission Line (A-M Transmission Line, A-M Project, or Project). 326FW 8me LLC, a subsidiary of 8minute Solar Energy (the Applicant), has applied for a right-of-way (ROW) for the approximately 7.2 miles of the Project that would cross federal land. Approximately 6.7 miles would cross federal lands managed by the Bureau of Land Management (BLM) and approximately 0.5 miles would cross federal lands managed by the Bureau of Reclamation (Reclamation). **Figure 1-1** shows the general location of the Proposed Action.

This EA will assist the BLM Las Vegas Field Office and Reclamation in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any significant effects could result from the analyzed actions. The BLM is the lead agency and Reclamation a cooperating agency for this NEPA analysis. Following the requirements of NEPA (40 CFR 1501.5), this EA describes the potential impacts of a No Action Alternative and the Proposed Action. If the BLM and Reclamation determine that the Proposed Action is not expected to have major effects, a Finding of No Significant Impact (FONSI) will be issued and a Decision Record will be prepared. If significant effects are anticipated, an Environmental Impact Statement will be prepared or the No Action Alternative selected.

Purpose and Need

The purpose of the Proposed Action is for BLM and Reclamation to respond to a ROW request from 326FW 8me LLC to construct and maintain an approximately 7.2-mile 500kV transmission line located on public lands managed by the BLM and Reclamation between the proposed Arida Substation and existing Mohave Substation.

The need for the Proposed Action is established by the BLM's responsibility to respond to proposals received under the Federal Land Policy and Management Act, BLM ROW regulations 43 CFR 2800, Reclamation ROW regulations at 43 CFR 429 and other applicable Federal laws and policies.

Decision to be Made

The BLM and Reclamation will decide whether to deny the proposed right-of-way, grant the right-of way, or grant the right-of-way with modifications. The BLM and Reclamation may include any terms, conditions, and stipulations it determines to be in the public interest and may include modifying the proposed use or changing the route or location of the proposed facilities (43 CFR 2805.10(a)(1)). In the decision process, the BLM and Reclamation must consider how their resource management goals, objectives, opportunities, and/or conflicts relate to this non-federal use of public lands.

Conformance Summary

The Proposed Action is in conformance with the Las Vegas Resource Management Plan (RMP), October 1998. The emphasis of the 1998 Las Vegas RMP is to protect unique habitats for threatened, endangered, and special status species while providing areas for community growth,

recreation, mineral exploration and development, and other resource uses. The specific objectives and management directions that allow for the actions proposed can be found in Appendix A of the 1998 Las Vegas RMP Record of Decision.

RIGHTS-OF-WAY MANAGEMENT

Objective

RW-1. Meet public demand and reduce impacts to sensitive resources by providing an orderly system of development for transportation, including legal access to private inholdings, communications, flood control, major utility transmission lines, and related facilities.

RW-1-h. All public land within the planning area, except as stated in RW-1-c through RW-1-g, are available at the discretion of the agency for ROWs under the authority of the Federal Land Policy Management Act.

Other Federal, State, and Local Agency Involvement

The proposed route for the Project would cross public land administered by the BLM and Reclamation as well as Clark County and private land. Federal, state, and local agencies and tribes were consulted during the NEPA analysis of the Project. In addition to the BLM and Reclamation, those agencies with potential jurisdiction over this Project were contacted to obtain necessary permits and approvals. These agencies are identified in **Table 1-1**.

TABLE 1-1 GOVERNMENT AGENCIES / JURISDICTION		
Agency/Department	**Permit/Approval**	**Action**
Federal Agencies		
Bureau of Land Management	ROW	Lead Federal agency for National Environmental Policy Act, Section 106 Consultation and Endangered Species Act (ESA) Consultation. ROW for BLM lands.
Bureau of Reclamation	ROW	Act as cooperating agency on the NEPA document. ROW for Reclamation lands.
U.S. Fish and Wildlife Service (USFWS)	Biological Assessment, Section 7 Consultation, Biological Opinion (ESA)	Potential effect on federally listed endangered/threatened/proposed species
	Bald and Golden Eagle Protection Act	Activity where there may be an effect on Bald or Golden Eagles.
Department of Defense	Consultation	Confirmation of no effect on military training airspace.
Advisory Council on Historic Preservation (ACHP)	Section 106 Consultation, National Historic Preservation Act (NHPA)	Opportunity to comment if Project may affect cultural resources listed or eligible for listing on National Register of Historic Places.
State Agencies		
Public Utilities Commission of Nevada	Utility Environmental Protection Act – Permit to Construct	Required for greater than 70-MW renewable energy facility or a 200-kV transmission line.
Nevada Division of Environmental Protection (NDEP)	General Construction Activity Stormwater Permit	Stormwater discharges associated with construction activity for projects in hydrographic basins containing Waters of the U.S.
NDEP	Groundwater Discharge Permit	Needed if non-potable water is used for dust control during construction.
Nevada State Historic Preservation Office	Section 106 Consultation, NHPA	Consultation regarding activities potentially affecting cultural resources.
Nevada Department of Wildlife (NDOW)	NRS 701.600-701.640 Energy Review Program Participation	Cost recovery for NDOW consultation regarding wildlife impacts.
	Special Purpose Permit	Needed for handling tortoises.
Nevada Department of Transportation (NDOT)	Right-of-Way Occupancy Permit	Needed for Needles Highway crossing
Local Agencies		
Clark County	Special Use Permit	For non-conforming uses within County.
Clark County Department of Environment and Sustainability; Division of Air Quality	Dust control permit	Dust control during construction.

Chapter 2 Proposed Action and Alternatives

No Action Alternative

The No Action Alternative would result in renewable energy from the proposed Arida Solar Project to be developed by 326FW 8me LLC not being delivered to the regional electric grid at the Mohave Substation. The renewable energy goals of Nevada and surrounding states and BLM goals to facilitate the development of renewable energy would not be advanced by the addition of the renewable energy generated by the Project.

Proposed Action

The A-M Project would be approximately 8.8 miles long and the Applicant has applied for a right-of-way (ROW) for the approximately 7.2 miles of the line that would cross federal land. **Figure 2-1** shows the location of the proposed route for the A-M Transmission Line. On federal lands, the proposed permanent and temporary right-of-way (ROW) for the transmission line would be 200 feet wide. In addition to the transmission line, the Project would use existing roads outside the transmission ROW for access. The term of the ROW for all Project features is requested to be for 50 years and the Project would operate year-round.

The proposed route was developed to follow existing transmission line ROWs to the extent possible and take advantage of and utilize existing access roads along the entire route to minimize impacts. See below for brief descriptions of the primary segments of the proposed route:

- Segment from the proposed Arida Substation to ROW for Existing Lugo-Mohave 500kV Line - The proposed route would leave the proposed Arida Substation located on Clark County land entering federal land managed by BLM and go north-northwest for approximately 0.9 miles to a point where it intercepts the existing Lugo-Mohave 500kV line and existing access road.
- Segment Paralleling ROW for Existing Lugo-Mohave 500kV Line – The proposed line would parallel the existing Lugo-Mohave 500kV line on federal land to the northeast for approximately 3.6 miles (this includes about 3.1 miles managed by the BLM and 0.5 miles managed by Reclamation). The Project would share the ROW for the existing access road in this segment. This segment would continue to parallel the existing line for approximately another 0.5 miles on private land co-owned and managed by Southern California Edison (SCE).
- Segment Around Flood-Control Structure West of Laughlin Area – After leaving the existing ROW, the proposed route would re-enter federal land managed by BLM within a designated utility corridor, going north and northeast to avoid an existing flood control structure, and continuing northeast for a total of about 1.5 miles to the Needles Highway.
- Segment to Mohave Substation – After crossing the highway about 0.5 miles north of the intersection with Bruce Woodbury Drive, the proposed route would continue east on federal land managed by BLM for about 0.5 miles, continue east on private land for about 0.5 miles, turn south on BLM-administered lands for 0.25 miles where it would turn east and parallel the north side of Bruce Woodbury Drive for about 0.55 miles also on BLM-managed lands, and then cross Bruce Woodbury Drive onto private lands managed by SCE for approximately 0.5 miles to the existing Mohave Substation.

The Applicant would be responsible for constructing the proposed gen-tie from the proposed Arida Substation to a point-of-change-of-ownership (POCO) structure located on or near lands co-owned and managed by SCE. From the POCO structure, the remaining segment of the line would be constructed by SCE to the point of interconnection terminal within the existing Mohave Substation.

The ROW for the proposed route for the Project on federal lands would be approximately 7.2 miles long or 38,016 feet. Access along the entire length of the route would be provided via existing roads from which short spur roads would be built where needed to access each structure location. The Project is proposing a 200-foot-wide ROW on federal lands that would allow flexibility in areas for turning structures, etc. At a ROW width of 200 feet, the proposed Project would total approximately 175 acres for the permanent transmission ROW on federal land (163 acres on BLM and 12 acres on Reclamation).

All permanent Project disturbance including spur roads would be located within the proposed 200-foot ROW. Temporary disturbance would occur within the ROW at the work areas at each structure location and at some locations outside the ROW to accommodate pulling and tensioning sites and equipment laydown areas. The areas needed during construction for equipment storage and material lay-down would likely be on Clark County or private lands. There would likely be two lay-down yards each up to 4 acres – one near each end of the Project. It is possible the southern laydown area could be on County or BLM land. **Table 2-1** provides the expected acreages of temporary and permanent disturbance associated with the Project on federal lands.

Table 2-1
ARIDA-MOHAVE TRANSMISSION LINE PROJECT
PROPOSED PROJECT IMPACTS

Impact Type	Work Area Type	Jurisdiction			Total Acres
		Federal Land (Acres)		Private Land (Acres)	
		BLM	BoR		
Permanent Impacts					
	Structure Work Areas	2.39	0.21	0.68	3.28
	Roads / Spur Roads	5.71	0.27	0.99	6.98
Permanent Impacts Total		**8.11**	**0.48**	**1.68**	**10.26**
Temporary Impacts					
	Work Areas	13.85	**0.81**	5.86	20.52
	Stringing Sites	22.40	0	3.48	25.88
	Laydown Areas	4.00[1]	0	8.00[2]	12.00
Temporary Impacts Total		**40.25**	**0.81**	**17.34**	**58.40**
TOTAL		**48.46**	**1.29**	**19.02**	**68.66**

[1] Includes possible location of southern laydown area.
[2] Includes two possible laydown areas

General Facility Description, Design, and Operation

The major components of the Project include transmission line facilities, substation facilities, and communications facilities. Typical design characteristics for the Project are listed in **Table 2-2** with more detail on Project design in the following sections. Final design characteristics will be determined in the detailed design phase of the Project prior to construction.

Transmission Line

The proposed Project would be built as a single- or double-circuit 500kV line and would use H-frame or single steel pole structures. The H-frame structures and the self-supporting single pole structures would be made of self–weathering or galvanized steel. Illustrations of the typical 500kV H-frame and steel pole structures that could be used for this Project are provided in **Figures 2-2** and **2-3.**

Structure heights would be approximately 150 feet to 200 feet varying with terrain and associated span lengths. The average span length is expected to be approximately 1,200 to 1,600 feet, resulting in about 4 to 5 structures per mile of line.

Each H-frame or single pole would be either be directly embedded into the ground or installed on drilled piers with anchor bolts which would be typically 15 feet to 30 feet deep and 6 feet to 12 feet in diameter. The foundation depths and diameters would depend on prevailing soil properties. A geotechnical study would be conducted prior to final foundation designs.

Each circuit would have two or three conductor bundles per phase. Each conductor would be a 1.5 to 2-inch diameter ACSR conductor. The transmission line would also have two shield wires mounted on the top of the structures. One or both of them would be composed of extra high strength steel wire. It is possible that one of the shield wires could include an optical ground wire (OPGW) constructed of aluminum and steel core which would carry glass fibers within its core. This fiber cable would provide communications for the Project between the two substations. If fiber is not included in the shield wire, a separate fiber cable would be strung on the structures below the conductors to provide the needed communications link.

Related Infrastructure

Access Roads

On federally managed lands, the A-M Transmission Line was designed to provide the smallest possible ground disturbance footprint and to follow/utilize existing roads. The planned access to the various segments of the proposed line on federal lands is described below:

- Segment from the proposed Arida Substation to ROW for Existing Lugo-Mohave 500kV Line - This segment would follow an existing road from which short spur roads would be built to each structure location
- Segment Paralleling ROW for Existing Lugo-Mohave 500kV Line – This segment would utilize the existing Lugo Mohave access road from which short spur roads would be built to each structure location
- Segment Around Flood-Control Structure West of Laughlin Area – This segment would utilize existing roads in the area from which short spur roads would be built to each structure location

- Segment East of Needles Highway – Access to the east-west segment east of Needles Highway on BLM-managed federal lands would be provided by new access within the ROW. On private lands, short spur roads would be built from the existing unimproved road within the ROW. Access for the north-south segment on BLM-managed federal land would use existing roads with potential short spur roads where needed. The segment paralleling Bruce Woodbury Drive on BLM-managed federal land would use existing unimproved access off the road shoulder or short spur roads to each structure location.
- Segment on SCE-managed lands in Laughlin Area – This segment would use existing access associated with the existing substation and associated lines with short spur roads built to each structure location

Table 2-2
PROJECT DESIGN CHARACTERISTICS

Transmission Line Facilities	
Line length	Approximately 8.8 miles (approximately 7.2 miles on federal land for proposed route)
Type of Structure	Single or double-circuit, H-frame or single steel pole on BLM Single steel pole or lattice on private (or where otherwise needed)
Structure height	150 to 200 feet
Span length	1,000 to 1,600 feet
Number of structures per mile	Approximately 4 to 5
Right-of-way width	200 feet on BLM and Reclamation
Access roads	Short spurs from existing Lugo-Mohave access road where adjacent, mostly located within ROW for line otherwise
Voltage	500 kV
Circuit configuration	Single or double-circuit (three phases per circuit)
Conductor size	Two or three 1.5 to 2-inch ACSR conductors per phase
Minimum ground clearance of conductor	30 to 35 feet at expected operating temperature
Pole foundation depth/diameter	15 to 30 feet / 6 to 12 feet 10 to 20 feet / 6 to 10 feet
Substation Facilities	
Proposed Arida Substation	On Clark County land
Existing Mohave Substation	No new construction
Communications Facilities	
Systems	Digital Radio System, microwave, very high frequency (VHF)/ ultra-high frequency (UHF) radio, and fiber line / OPGW
Functions	Communications for fault detection, line protection, Supervisory control and data acquisition (SCADA), and two-way voice communication.

New spur roads would be approximately 20 feet wide and would be located within the 200-foot ROW for the transmission line. Where paralleling the existing line, spur roads would be

constructed from the existing road and/or existing transmission structure footprints to access work areas for the new Project transmission structures. The existing access roads are not expected to require improvements. The existing access roads outside of the proposed 200-foot-wide ROW would also require coverage under the ROW grant.

Substations

The proposed A-M Project would include two substations – the proposed Arida Substation which would be the southern terminus of the Project and the existing Mohave Substation which would be the northern terminus of the Project.

The proposed Arida Substation would be located on the Arida Solar Project site on lands owned by Clark County. It would be a 34.5kV / 500kV substation where energy collected from the proposed Arida Solar project would be collected and stepped up to transmission voltage (500kV).

The existing Mohave Substation is located within the Laughlin area on lands co-owned and managed by SCE. All work associated with the A-M Project would be done inside the fence at this substation.

Communication Facilities

The proposed A-M Project would include communications facilities needed for electrical fault detection, line protection, supervisory control and data acquisition (SCADA), and two-way communication. This would include facilities located within the fence of the two substations and a redundant communication line between the two substations that that would be mounted on the transmission structures.

One of the shield wires at the top of each structure could include an optical ground wire (OPGW) constructed of aluminum and steel core which would carry glass fibers within its core. If fiber is not included in the shield wire, a separate fiber cable would be strung on the structures below the conductors to provide the needed communications link.

Construction of Facilities

Construction is anticipated to proceed in a sequential manner along the line that is graphically depicted in **Figure 2-4.** The construction and installation of the transmission line would generally be performed using the proposed construction techniques discussed in the following subsections. Any modifications to the proposed construction techniques that arise during construction on federal lands would be approved by a variance, as would be outlined in a Construction and Environmental Compliance Monitoring Plan.

The construction activities and areas of potential impact would be limited primarily to access roads, spur roads, structure locations, lay-down yards, pull and splicing sites, and the proposed substation. The final specifications of these Project components would be identified during final design of the Project.

Several standard mitigation and best management practices would be employed by the Applicant as part of the Project. A comprehensive list of measures required by the BLM for ROWs is included in **Appendix A**. In addition, **Appendix B** identifies those measures identified by the Applicant as Applicant Design Features (ADFs) that would be applied as part of the Project description to avoid or reduce resource impacts.

Some of the ADFs would be applied to specific areas where needed (where a specific type of resource exists). In these cases, the locations of these geographically specific measures would be shown on the detailed design drawings prepared prior to construction.

Pre-Construction Surveys and Standards

Environmental Pre-Construction Surveys

Environmental resource surveys have been conducted as part of the NEPA process for the Project. In addition, the final NEPA document would identify any additional pre-construction resource clearance surveys for biological and cultural resources that would be conducted prior to the start of construction. If resources are encountered during the pre-construction surveys or during construction, appropriate measures would be implemented at that time to minimize any potential impact.

Environmental resource surveys were conducted by qualified resource specialists. Specifically, qualified biologists will evaluate the biological resources and sensitive species for analysis. Further details regarding required pre-construction environmental surveys would be specified in the final NEPA document and ROW stipulations.

Class III pedestrian surveys for cultural resources have been conducted by qualified resource specialists during the NEPA process and in accordance with a cultural resources plan. The survey area for this effort (Area of Potential Effect or APE) included sufficient buffer to ensure all potentially disturbed areas are evaluated. Prior to construction, cultural plans would be developed that include monitoring and discovery processes identified in compliance with Section 106 of the NHPA.

Geotechnical Pre-Construction Surveys

A detailed geotechnical field survey was completed to support the design and engineering. A Categorical Exclusion (DOI-BLM-NV-S010-2021-0083-CX) was issued for the geotechnical field study. The purpose of the field geotechnical program was to observe subsurface conditions and obtain samples of site soils for laboratory testing and classification with results from the analyses used to determine the foundation design for the transmission structures.

The results of the geotechnical survey indicated that the proposed transmission towers can be supported on drilled shafts. Bedrock was encountered in some of the borings which could impact construction of drilled shafts, direct embedded poles, and installation difficulties of helical piers. Granular soils were also found at other locations and temporary steel casing could be required in these areas to properly drill and clean shafts prior to concrete placement.

Construction Crew Training and Safety

Prior to construction, all contractors, subcontractors and Project personnel would undergo an environmental training program to become familiarized with construction requirements in the POD, the ROW, and any Temporary Use Permits (TUPs). All contractors and company personnel would be required to attend this training prior to gaining access to the ROW. This training will familiarize participants with required environmental protection measures outlined in a Construction and Environmental Compliance Monitoring Plan that would be developed after the ROW grant has been issued and prior to groundbreaking.

Additionally, safety training would be mandatory for all Project personnel (e.g., supervisors, inspectors, surveyors, employees, construction engineers, contractors, contractor's employees, and subcontractors) prior to performing any work on-site. Team members would attend daily construction tailboards, detailing specific safety hazards for all work locations, acceptable Personal Protective Equipment (PPE), work location awareness and communication of unsafe work practices. All team members will be required to wear appropriate PPE while on-site. A detailed Health and Safety Plan developed and approved prior to construction will be kept on-site to be used during training.

Despite best efforts, accidents, acts of nature, and other emergency situations can occur. Effective preparations for emergency and response can reduce injuries, prevent or minimize environmental impacts, protect employees and the community, reduce asset losses, and minimize downtime. A detailed Emergency Preparedness and Response Plan would be developed and kept on site to address emergency protocols.

All applicable fire laws and regulations would be observed during construction and BLM and Reclamation fire safety standards would be followed. All personnel would be advised of their responsibilities under these requirements, including taking practical measures to report and suppress fires. The Fire Prevention and Response Plan would be developed in consultation with BLM and Reclamation that provides the required detail on fire safety procedures, and it would be developed after the ROW grant has been issued and prior to groundbreaking.

Transmission Line Surveying, Flagging, and Staking

Prior to construction, pre-construction engineering survey work would be conducted locating the centerline, structure center hubs, ROW boundaries, and access roads. All these features would be staked in the field and no paint or permanent discoloring agents would be applied to rocks or vegetation to indicate survey or construction limits. After the Project components have been marked in the field, any required pre-construction environmental field surveys would be conducted as necessary. Prior to the initiation of any pre-construction surveys, the necessary survey permits for federal land and rights-of-entry to privately owned land would be obtained.

Any sensitive resources within the planned work areas would be flagged so they can be avoided or appropriately dealt with during construction as described below.

Construction

Figure 2-4 shows the sequence of typical construction activities required for the completion of transmission line construction. The primary steps are described below.

Lay-down Yards

Construction of the transmission line would begin with the establishment of lay-down yards, which would be required for storing materials, construction equipment, vehicles and in some cases as a show-up yard for the construction crews. The Project would likely have two lay-down yards – one at each end of the Project. These areas would each require approximately 4 acres and they would be located on County or private lands. It is possible that the southern laydown area could be located on BLM-managed lands.

Vegetation would be cleared in these areas and possibly graded in some areas. Unless otherwise directed by the landowner, the lay-down yard would be restored following construction.

Access to and along the ROW (Permanent and Temporary)

Access to the portions of the line on federal lands would be provided by existing access roads where no upgrades are expected to be required. These existing access roads are located both within and outside the proposed ROW.

Access to each new structure location would be provided by short spur roads from the existing access roads. These spur roads would be located within the proposed 200-foot ROW. These spur roads would be up to approximately 20 feet wide. Roads would be constructed in accordance with BLM and/or other relevant standards.

If affected, fences and gates may be built or replaced as required by the land manager or landowner. If cattleguards, fences, and gates are damaged, they would be repaired or replaced to their original condition as required. Temporary gates would be installed only with the permission of the land manager or landowner.

After Project construction, existing and new (spur) permanent access roads would be used by maintenance crews and vehicles for inspection and maintenance activities.

Structure Site Clearing, Foundation Excavation, and Foundation Installation

Structure sites would be located 1,000 to 1,600 feet apart. Where the line parallels the existing Lugo–Mohave 500kV line, the new structures would be located adjacent to the existing structure where possible to best utilize the terrain and existing access. Where the line deviates from the existing Lugo-Mohave line, structure locations would be determined by topography and best engineering practices.

Vegetation clearing and ground disturbance would be required at each structure site for excavation of holes and pouring of concrete foundations. Each structure location would be cleared of vegetation, used for construction, and remain available for future line maintenance. Structure sites will only be graded if necessary. Each structure site would be approximately 125 feet by 60 feet in size resulting in approximately 0.17 acre of temporary disturbance per structure site. These sites would be smaller where needed if limited workspace is available.

Foundation excavations would be made using mechanized equipment, with H-frame structures requiring two holes six feet to 10 feet in diameter and steel poles requiring one 12-foot to 15-foot diameter hole, or smaller if the structures would be direct imbedded. Structure foundation excavations would be made with power drilling equipment. A vehicle-mounted power auger or backhoe would be used to excavate the structure foundations. In rocky areas, the foundation holes would be excavated by drilling. Although not expected, in some instances blasting could be necessary because of the specific geologic conditions. Further details on blasting procedures and safeguards would be included in a Blasting Plan that would be provided prior to construction if needed. Foundation holes left open or unguarded would be covered to protect the public and wildlife. Additionally, any holes left open would be cleared by a monitor to ensure any trapped wildlife are removed before work resumes.

Foundations would be installed by placing reinforced steel and transmission structure steel components into each foundation hole, positioning the steel components, and encasing them in concrete. Excess spoil material would be used for fill where suitable and any remaining spoil would be spread within the ROW.

Water would be used for soil compaction and dust abatement at each structure site and along access roads, as needed. Water for footer construction and dust abatement would be obtained from local water sources and trucked to the construction area.

Structure Assembly and Erection

Structural steel components and associated hardware would be transported from the lay-down yards to each structure site by truck. Steel structure sections would be delivered to structure locations where they would be fastened together to form a complete structure and hoisted into place by a large crane. At each structure site, a work area of approximately 125 feet by 60 feet would be required for the structure foundation locations, structure assembly, and the necessary crane maneuvers. The work area would be cleared of vegetation only to the extent necessary. Concrete for use in constructing foundations would be dispensed from concrete mixer trucks. After line construction, all pads not needed for future maintenance would be restored to the greatest extent possible and revegetated where required.

Conductor Installation

After the structures are erected, insulators, hardware, and stringing sheaves would be delivered to each structure site. The structures would be rigged with insulator strings and stringing sheaves at each ground wire and conductor position.

For public protection during wire installation, guard structures could be erected where the line would cross roads, existing power lines, and other obstacles. Guard structures would consist of H-framed wood poles placed on either side of an obstacle. These structures would prevent ground wire, conductor, and equipment from falling on an obstacle, and would be removed following the completion of conductor installation in that area. Equipment for erecting guard structures would include augers, line trucks, pole trailers, and small cranes. Guard structures may not be required for small roads or other areas where suitable safety measures such as barriers, flagmen, or other traffic controls could be used.

Pilot lines would be pulled (strung) from structure to structure either using helicopters or pulling equipment and threaded through the stringing sheaves at each structure. Following pilot lines, stronger line with a greater diameter would be attached to conductors to pull them onto structures. This process would be repeated until the ground wire or conductor is pulled through all sheaves.

The shield wire (and/or OPGW) and conductors would be strung using powered pulling equipment at one end and powered braking or equipment tensioning at the other end of each conductor stringing segment. Sites for tensioning equipment and pulling equipment would be approximately 14,500 feet apart. Each pulling / tensioning site would be approximately 100 feet by 400 feet and there would be no blading at pull sites if the terrain is sufficiently level. Pulling / tensioning equipment would be at each location for only one or two days before moving on to the next segment. Pull site locations will be confirmed during final design.

Helicopter Use

As stated above, helicopters could possibly be used to set structures in the most rugged structure site locations and pulling in pilot lines. If helicopters are determined to be necessary, it is anticipated that one of the lay-down yards would be used for helicopter staging if needed. More details regarding helicopter use would be included in a Helicopter Flight and Safety Plan developed prior to construction. The construction contractor would also develop a detailed helicopter plan specifically for each area where they would be proposed for use.

Construction Workforce and Schedule

The Project would be constructed primarily by contract personnel with the Applicant responsible for Project administration and construction review. The estimated number of temporary workers and types of equipment required to construct the proposed transmission lines are summarized in **Table 2-3**.

Construction of the proposed Project could include multiple construction crews working simultaneously at various locations. The typical work week would be approximately 10 hours per day, six days per week. If time constraints occur or a more aggressive production schedule is required, construction could start at two or more points concurrently.

The total length of time for the transmission line construction is estimated to be 9 to 12 months. A detailed transmission construction schedule would be developed that would include the breakdown of expected personnel and daily average run time per piece of construction equipment used for construction.

Water Use for Construction

The Project would use water for dust control and for assisting with large ground bores for concrete foundations during construction. For dust control in the Project's geographical location, dust control would require application of water spread out over up to 12 months. For boring foundations, some material conditions could require the addition of water to assist the auger. All disposal of water used for construction purposes will be per any local, state, and federal rules and regulations.

Water would be sourced and purchased from local providers at the most local site possible and drawing that water from the locations the local entities specifically require. It is understood that there are multiple locations throughout the Project area where water can be accessed.

Industrial Waste and Toxic Substances

Petroleum products such as gasoline, diesel fuel, crankcase oil, lubricants, and cleaning solvents would be present within the Project ROW and temporary work areas during construction. These products would be used to fuel, lubricate, and clean vehicles and equipment, and would be transported in approved trucks or containers. When not in use, hazardous materials would be properly stored to prevent drainage or accidents. These materials would not be drained onto the ground or into drainage areas.

Totally enclosed containment would be provided for all hazardous waste. All construction waste, including trash and litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials, would be removed to a disposal facility authorized to accept such materials.

A Hazardous Waste Management and Spill Prevention Plan would be developed for the Project and ultimately the construction contractor will provide the final Plan to BLM for approval prior to construction. In the event of a hazardous materials spill, notification and clean-up would be undertaken by construction contractor's certified personnel in an expeditious manner according to the approved final plan.

It is expected that construction waste will be hauled to a local landfill. There would be haul-off bins at each lay-down yard as needed with scheduled pick-ups from local hauling providers.

Post-Construction Rehabilitation

This section outlines the actions that would be employed immediately following the completion of construction to ensure Project stabilization and rehabilitation.

Transmission Line Restoration

Restoration treatments would be applied to construction-related disturbances to rehabilitate temporary use areas. Restoration treatments will be included in a Restoration Plan that would be submitted for approval prior to construction. This plan could focus on restoring plant communities and associated wildlife habitat, preventing increases in noxious weeds in the Project area, minimizing Project-related soil erosion, and reducing visual impacts caused by construction activities. A draft of the Restoration Plan is included in **Appendix E**.

Weed Management

A Weed Management Plan would be developed prior to construction that would outline the measures to control weed species during transmission line construction, operation and maintenance as well as reclamation and revegetation of the disturbed areas. Surveys would be conducted in areas disturbed during construction within the construction corridor, and along access roads. A draft of the Weed Management Plan is included in **Appendix F**.

Erosion Control

A Stormwater Pollution Prevention Plan would be developed prior to construction, identifying site-specific erosion control measures that would be implemented to prevent erosion and runoff during and immediately following construction.

TABLE 2-3
ESTIMATED PERSONNEL AND EQUIPMENT FOR TRANSMISSION LINE CONSTRUCTION

Activity	Equipment Type	Pieces of Equipment	# of People
Material/Yard / Receiving / Distribution (two yards)	3/4-ton Pickup	4	8
	10,000 R/T Forklift	2	
	50-ton Crane	2	
	Tractor Trailer (flatbed)	3	
	20-ton Boom Truck	2	
	100-ton Crane	1	
Survey (Construction Staking)	1/2-ton Pickup	2	4
	ATVs	4	
Soil Borings	3/4-ton Pickup	2	6
	Drill Rig	2	
ROW Clearing	3/4-ton Pickup	4	4
	Chainsaw	4	
	Hydro Axe	1	
Roads and Access	1-ton Pickup	2	6
	Cat D-6	1	
	Grader	1	
	Semi w/Dump Trailer	1	
	Water Truck	3	
Foundations	1/2-ton Pickup	3	20
	1-ton Pickup	3	
	Drill Rig	3	
	Loader/Backhoe	3	
	Boom Truck	3	
	Concrete Truck	3	
	Generator	3	
	Cat D-6	3	
Structure Assembly H-frame	1/2-ton Pickup	3	16
	1-ton Line Truck	3	
	40-ton Boom Truck	3	
	Air Compressor	3	
	30-ton R/T Crane	3	
Structure Assembly Tubular	1/2-ton Pickup	1	8
	1-ton Flatbed Truck	1	
	Air Compressor	1	
	50-ton R/T Crane	1	
Structure Erection (H-frame)	1/2-ton Pickup	1	10
	1-ton Flatbed Truck	1	
	200-ton Crane	2	
	150ft Bucket/Boom Truck	2	
	Air Compressor	1	
Structure Erection (Tubular)	1/2-ton Pickup	1	10
	1-ton Flatbed Truck	1	
	200-ton Crane	1	
	150ft Bucket/Boom Truck	1	
	Air Compressor	2	
Wire Pulling (Conductor, Overhead Ground Wire, OPGW)	1-ton Line Truck	2	20
	200-ton Crane	2	
	150ft Bucket/Boom Truck	2	

TABLE 2-3
ESTIMATED PERSONNEL AND EQUIPMENT FOR TRANSMISSION LINE CONSTRUCTION

Activity	Equipment Type	Pieces of Equipment	# of People
	Air Compressor	1	
	Cat D-8	3	
	Puller	2	
	Tensioner	2	
	Reel Trailer	2	
Conductor Clipping and Dead ending	1/2-ton Pickup	4	32
	1-ton Line Truck	6	
	Bucket Truck/ Boom w/Basket	4	
Restoration	1/2-ton Pickup	2	4
	Tractor with Disc	1	
	Cat D-4	1	
	Hydro Seed Truck	1	
Contractor Management /Compliance Monitors	1/2-ton Pickup	10	15
	ATV (Inspection)	2	

Operations

This section outlines those procedures that would be employed during the operation and maintenance phase of the Project after construction and post-construction restoration has been completed.

Operation and maintenance activities would include all requirements set forth by the Western Energy Coordinating Council (WECC) including activities such as patrol of the lines, climbing inspections, transmission structure (tower or pole) and wire maintenance and repair, routine insulator washing, and repairs of access and spur roads.

The Applicant would keep necessary work areas around all structures clear of vegetation. Also, the height of vegetation along the ROW would be limited so as not to interfere with operation of the line but the need for this is expected to be limited in this environment. The following sections provide details on the anticipated operation and maintenance requirements for the Project.

Transmission Line Safety

The safety measures implemented during construction for worker protection would be applicable during operation and maintenance and would be detailed in the Health and Safety Plan developed for the Project. The transmission line would be protected with power circuit breakers and related line relay protection equipment. Lightning protection would be provided by overhead ground wires (shield wires or OPGW) along the line. Electrical equipment and fencing at the substation would be grounded. All existing fences, metal gates, pipelines, etc. that cross or are within the transmission line ROW would be grounded to prevent electrical shock.

Transmission Line Emergency Response

Emergencies are any event requiring immediate response to a condition by Project personnel. These may include but are not limited to car-to-structure contacts; downed transmission line,

structures, or equipment failure; fires and explosions; transformer outages and/or outages due to down wire as a result of extreme weather; spills or releases of hazardous materials; sudden loss of power; natural disasters; and serious personal injury. Responding crews would vary in number and equipment needs depending on the size and severity of the emergency. In areas without vehicle access, helicopters may be used to respond quickly to emergencies. A detailed Emergency Preparedness and Response Plan outlining the proposed measures would be developed after the ROW grant has been issued and prior to the beginning of line operations.

Transmission Line Maintenance

Inspection Patrols and Maintenance Schedule

Regular inspections would be performed in accordance with the regulatory requirements for transmission facility maintenance. The Project's overhead transmission lines, transmission structures and substations would be inspected for corrosion, equipment misalignment, loose fittings, and other mechanical problems.

Normal maintenance or repairs to conductor or insulator components would not require notification to the BLM or Reclamation unless new ground disturbance is required. Access for this routine repair work would be confined to roads and access designated for this purpose.

In emergencies arising from fire, flood, storms, vandalism or other factors causing or requiring an outage, repair work would be conducted as soon as the damage is detected. Restoration procedures following completion of repair work would be similar to those prescribed for original construction.

Insulator Washing

If dirt and dust build up on insulators, it can compromise their insulating capabilities. In desert environments where rain is rare, washing the insulators can be conducted if necessary. Insulator washing involves driving a water truck to within six feet of a tower base and using a high-pressure hose to spray deionized water at the insulators. Insulator washing would not be expected more than twice a year and would be done with plain water.

ROW Maintenance

ROW maintenance would include grading or repair of spur roads and work areas within the ROW and spot repair of areas with erosion damage, if needed. Required equipment could include a motor grader, backhoe, four-wheel drive pickup truck, and a loader. All access roads would be maintained on a regular schedule.

Vegetation Management

A cleared area a minimum of ten feet around the base or foundation of all transmission structures would be maintained. In addition, work areas adjacent to access roads and electric transmission structures would be maintained for vehicle and equipment access necessary for operations, maintenance and repair. Shrubs and other obstructions would be removed as needed near structures to facilitate safe inspection and maintenance of equipment and to ensure system reliability. In addition, though not expected to be an issue for this Project, vegetation with a mature height of 15 feet or taller would not be allowed to grow within the ROW to protect system reliability and public safety.

Fire Control

All applicable fire laws and regulations would be observed during the operation and maintenance period. BLM and Reclamation fire safety standards would be followed and requirements for fire tool availability, spark arresters/mufflers on equipment, and coordination of extreme fire conditions with BLM and Reclamation representatives would be coordinated. The project's 9 to 12-month construction timeframe could overlap with several months of extreme fire conditions. Year-round fire prevention orders are not likely to impede the construction schedule. However, when implemented, stage one fire restrictions would require the proponent to obtain permission from the BLM for cutting and welding.

Prior to construction, a Fire Prevention and Response Plan will be developed in conjunction with BLM and Reclamation that outlines all required fire safety and management measures needed for both construction and operation. All personnel would be advised of their responsibilities under these requirements, including taking practical measures to report and suppress fires.

Weed Control

The measures outlined in the Weed Management Plan (**Appendix F**) would be conducted on federal lands as dictated by BLM for long-term invasive weed abatement during operation. On private property, implementation of the plan could include specific weed abatement methods, practices and treatment timing as developed in consultation with the landowners and other parties.

Raven Control Plan

If needed, prior to the completion of construction, a Raven Monitoring, Management and Control Plan would be prepared for portions of the Project route where needed. This plan would include the use of raven perching and nesting deterrents and describe the procedures for obtaining a permit from the appropriate agencies to legally remove ravens. The Project would obtain approval for this plan from the BLM, Reclamation, and USFWS. A draft of the Raven Control Plan is included in **Appendix G**.

Decommissioning

This section outlines the measures that would be implemented in the future when the ROW permit expires and the Project terminated. A Decommissioning Plan would be developed and finalized before decommissioning activities would start. At this time, these activities are anticipated to include:

- Removal of structures
- Recontouring of roads, tower pads, etc. if needed
- Stabilization and re-vegetation of disturbed areas

Structures would be removed and structure sites would be cleared and graded only to the extent necessary.

In general, all decommissioning and subsequent maintenance activities would be conducted in a manner that would minimize disturbance to soil and vegetation. Methods of restoration when the Project is terminated would adhere to, at a minimum, the restoration standards defined in the Restoration Plan, and additional BMPs as needed at the time. In addition, restoration would be

implemented to achieve results that will reuse/recycles materials to the maximum extent practicable.

Prior to restoration, any necessary surveys would be conducted in accordance with accepted standards and procedures at the time. During any necessary restoration activities, education similar to that given to construction crews would be given to workers regarding environmentally sensitive areas and resources. In addition, environmental monitors would be utilized at any areas deemed necessary.

Standard safety procedures associated with restoration activities would be implemented. If any special construction techniques are needed for restoration, safety procedures would be outlined and implemented prior to beginning restoration activities.

Alternatives

Two primary alternatives of the proposed route were developed in the vicinity where the Project enters the Laughlin area and approaches the existing Mohave Substation. These alternatives would replace the segment of the proposed route on federal and private lands north and east of the flood-control structure near Laughlin to the Mohave Substation as described below and shown on **Figure 2-1**:

- Route Alternative A – This route alternative would deviate from the proposed route at Structure 27 and continue northeast across BLM-administered land to Structure 30A where it would cross the Needles Highway. On the east side of the highway, it would continue east on federal land (0.5 miles on BLM and 0.5 miles on Reclamation), turn south on BLM-administered lands for 0.75 miles where it would connect with the proposed route at Structure 34 where it would continue on the same route to the Mohave Substation.

- Route Alternative B - This route alternative would deviate from the proposed route at Structure 29 continuing southeast to cross the Needles Highway at its intersection with Bruce Woodbury Drive. After crossing the highway, it would continue on private lands co-owned and managed by SCE for approximately 2.1 miles paralleling the existing Eldorado-Mohave and Lugo-Mohave lines to the existing Mohave Substation.

Route Alternative Access

Access to the each of the route alternatives where they differ from the proposed route would be provided as described below:

- Route Alternative A – Access for the segment between Structure 27 and 30A would be provided by a new road built within the ROW. Access to the east-west segment on BLM-managed federal lands would be provided by short spur roads from the existing Hiko Springs Lane. On Reclamation lands, new access would be developed within the ROW. Access for the north-south segment would use existing roads with potential short spur roads where needed.

- Route Alternative B – Access for the segment on SCE-managed private lands would use existing roads associated with the existing lines it parallels with short spur roads built to each structure location.

Tables 2-4 and **2-5** provide the expected acreages of temporary and permanent disturbance associated with each of these alternatives on federal lands.

Table 2-4
ARIDA-MOHAVE TRANSMISSION LINE PROJECT
ROUTE ALTERNATIVE A IMPACTS

Impact Type	Work Area Type	Jurisdiction			Total Acres
		Federal Land (Acres)		Private Land (Acres)	
		BLM	BoR		
Permanent Impacts					
	Structure Work Areas	2.64	0.48	0.55	3.67
	Roads / Spur Roads	5.01	1.43	0.77	7.21
Permanent Impacts Total		**7.65**	**1.91**	**1.32**	**10.88**
Temporary Impacts					
	Work Areas	13.92	2.01	5.18	21.11
	Stringing Sites	18.95	0	3.48	22.43
	Laydown Areas	4.00[1]	0	8.00[2]	12.00
Temporary Impacts Total		**36.87**	**2.01**	**16.66**	**55.54**
TOTAL		**44.52**	**3.92**	**17.98**	**66.42**

[1] Includes possible location of southern laydown area.
[2] Includes two possible laydown areas

Table 2-5
ARIDA-MOHAVE TRANSMISSION LINE PROJECT
ROUTE ALTERNATIVE B IMPACTS

Impact Type	Work Area Type	Jurisdiction			Total Acres
		Federal Land (Acres)		Private Land (Acres)	
		BLM	BoR		
Permanent Impacts					
	Structure Work Areas	1.98	0.21	0.69	2.88
	Roads / Spur Roads	4.75	0.27	2.37	7.39
Permanent Impacts Total		**6.73**	**0.48**	**3.06**	**10.27**
Temporary Impacts					
	Work Areas	9.61	0.81	7.25	17.67
	Stringing Sites	12.06	0	5.20	17.26
	Laydown Areas	4.00[1]	0	8.00[2]	12.00
Temporary Impacts Total		**25.67**	**0.81**	**20.45**	**46.93**
TOTAL		**32.40**	**1.29**	**23.50**	**57.20**

[1] Includes possible location of southern laydown area.
[2] Includes two possible laydown areas

Alternatives Considered but Eliminated from Detailed Analyses

Non-Federal Route Option

In addition to the Proposed Action, a non-federal route option was developed that would utilize Nevada State lands instead of needing to use federal lands managed by BLM and Reclamation. This route would cross state lands after leaving Clark County land until reaching private lands co-owned and managed by Southern California Edison (SCE). The remainder of this route would be located on SCE-owned lands to the point of interconnection within the existing Mohave Substation (**Figure 2-5**).

Development of this option would require the construction of the proposed line and new access through very rugged terrain that is currently undeveloped and without access. This alternative was eliminated from detailed analyses because development of this potential route would result in significantly greater environmental effects than the proposed route on federal lands.

Chapter 3 Affected Environment and Environmental Effects

Resource Evaluation

The BLM Southern Nevada District Office resource specialists reviewed the Proposed Action and found the resources to be present with potential for impact, present with no potential for impact, or not present.

The following table is a list of all resources considered in the evaluation of the Proposed Action and alternative(s). The resources found that may be affected by this proposal have been carried forward for analysis and are discussed further in this chapter. The resources that are not present or found to not be impacted by the Proposed Action because they would be completely mitigated with the implementation of standard stipulations will not be discussed further.

Table 3-1
Resources Considered in the Evaluation of the Proposed Action and Alternatives

Resource	May be Impacted (carry forward for analysis)	Present and Not Impacted or Not Present	Rationale for Not Impacted	Name & Date
Areas of Critical Environmental Concern (ACECs)		X	The Project area is not within an ACEC.	Lee Kirk 1/31/2022
Air Quality	X		Air quality would be temporarily impacted during construction of the Project from equipment emissions and fugitive dust. Fugitive dust control would be applied consistent with Clark County requirements. Analyzed in Section 3.1.	Lisa Christianson 1/5/2022
National Monument or Conservation Lands		X	There are no National Monuments or Conservation Lands in the vicinity of the Project.	Lee Kirk 1/31/2022

Table 3-1 Resources Considered in the Evaluation of the Proposed Action and Alternatives				
Resource	**May be Impacted** (carry forward for analysis)	**Present and Not Impacted or Not Present**	**Rationale for Not Impacted**	**Name & Date**
Cultural Resources		X	The proposed Project will not impact eligible historic properties. Implementation could possibly result in the disturbance and/or loss of currently unidentified resources but such losses would be mitigated by implementation of an Unanticipated Discoveries Plan. Analyzed in Section 3.2. Consultation with SHPO has resulted in a No Adverse Effect to cultural resources for this undertaking.	Dagmar Galvan 12/13/2021
Environmental Justice and Socioeconomics		X	The Proposed Action will not adversely or disproportionally impact minority populations, low-income communities, or Tribes (see Section 3.19 and EO 12898, Environmental Justice). The Proposed Action would not have a disproportionately high or adverse effect that would place socioeconomic burdens on the citizens of Clark County and nearby cities due to the limited context and intensity of the proposal. No group of people, including racial, ethnic, or socioeconomic group would bear a disproportionate share of the negative environmental consequences resulting from the Proposed Action.	Lee Kirk 1/31/2022

Table 3-1 Resources Considered in the Evaluation of the Proposed Action and Alternatives				
Resource	**May be Impacted** (carry forward for analysis)	**Present and Not Impacted or Not Present**	**Rationale for Not Impacted**	**Name & Date**
Fish and Wildlife Excluding Federally Listed Species	X		A small amount of wildlife habitat would be temporarily impacted by construction at each structure location. Analyzed in Section 3.3.	Curtis Walker 1/27/2022
Floodplains	X		A designated floodplain near the Clark County Flood Control structure on BLM-managed lands would be crossed by the proposed line. Analyzed in Section 3.5.	Boris Poff 1/30/2022
Forestry	X		Cacti and yucca, which are managed under the forestry program, could be impacted by construction at each structure location. Analyzed in Section 3.4.	Lara Kobelt 12/22/2021
Fuels and Fire Management	X		Because of the lack of fuel in the area, fire risk would be low but a Fire Management Plan would be required. Analyzed in Section 3.10.	Adam Johnson 1/11/2022
Geology/Mineral Resources		X	No mining claims or mining operations present.	Jeremiah Wagener 01/12/2022
Green House Gas/Climate Change		X	Potential climate change impacts from the small amount of temporary emissions from construction	Lisa Christianson 1/31/2022

Table 3-1 Resources Considered in the Evaluation of the Proposed Action and Alternatives				
Resource	**May be Impacted** (carry forward for analysis)	**Present and Not Impacted or Not Present**	**Rationale for Not Impacted**	**Name & Date**
			equipment would be minor. Currently, there are no emission limits for suspected greenhouse gas (GHG) emissions, for this project, and no technically defensible method for predicting potential climate change contributions from GHG emissions during construction of the proposed action.	
Hydrologic Conditions		X	The proposed Project will not cause any major changes in runoff patterns or characteristics.	Boris Poff 1/30/2022
Invasive Species/Noxious Weeds	X		Invasive species, including noxious weeds, could be impacted by construction. Noxious weeds have been found within the ROW. Analyzed in Section 3.4.	Lara Kobelt 12/22/2021
Lands and Realty	X		Project crosses and parallels an existing transmission line ROWs. Also crosses a permitted flood control facility on BLM-managed lands. A ROW is required for the proposed Project. Analyzed in Section 3.7.	Lisa Moody 12/10/2021
Livestock Grazing		X	No grazing allotments present in the area.	Lara Kobelt 12/22/2021
Migratory Birds		X	Analyzed in Section 3.12.	Curtis Walker

Table 3-1 Resources Considered in the Evaluation of the Proposed Action and Alternatives				
Resource	**May be Impacted** (carry forward for analysis)	**Present and Not Impacted or Not Present**	**Rationale for Not Impacted**	**Name & Date**
				1/27/2022
Native American Concerns	X		See Chapter 4 Summary of Consultation.	Kat Aben 1/31/2022
Paleontological Resources		X	The Proposed Action plots within the category zones 1 and 2 of the Potential Fossil Yield Classification GIS map. Geological units in category zones 1 and 2 have low potential for paleontological resources. Proponent shall adhere to the standard stipulations.	Mary Ellis 12/14/2021
Recreation/Travel/Wild and Scenic Rivers	X		Project crosses Laughlin Special Recreation Management Area (SRMA). Recreationists could be temporarily displaced during construction but no long-term impacts are expected. Traffic on Needles Highway and Bruce Woodbury Drive could be temporarily affected during construction. No W&S rivers occur in the area. Analyzed in Section 3.6.	Kenny Kendrick 1/20/2022
Soils	X		Access for construction and operation would be provided via existing roads. Small amount of disturbance at structure locations. Analyzed in Section 3.9.	Boris Poff 1/30/22

Table 3-1 Resources Considered in the Evaluation of the Proposed Action and Alternatives				
Resource	**May be Impacted** (carry forward for analysis)	**Present and Not Impacted or Not Present**	**Rationale for Not Impacted**	**Name & Date**
Threatened Endangered or Candidate Animal Species	X		The Project could affect the desert tortoise (*Gopherus agassizii*) but not its designated critical habitat. This Project would have no effect on any other federally listed species or designated critical habitat. Analyzed in Section 3.11.	Curtis Walker 1/27/2022
Threatened Endangered or Candidate Plant Species	X		The chalk dudleya (*Dudleya pulverulenta* ssp. *arizonica*) was identified as the only special-status species potentially present and none were found in the survey area. Analyzed in Section 3.4.	Lara Kobelt 12/22/2021
Transmission Corridors		X	ROW corridors are designated to minimize adverse impacts and the proliferation of separate use authorizations while providing an orderly system for energy, transportation, communication, natural gas, water, and wastewater conveyance purposes. An RMP Designated transmission corridor (Searchlight to Laughlin) is present where the proposed project crosses the flood-control facility near Laughlin. The project would also cross existing lines within the corridor. The proposed project is in conformance with the purpose the corridors were established. Analyzed in Section 3.7.	Lisa Moody 12/10/2021

Table 3-1 Resources Considered in the Evaluation of the Proposed Action and Alternatives				
Resource	**May be Impacted** (carry forward for analysis)	**Present and Not Impacted or Not Present**	**Rationale for Not Impacted**	**Name & Date**
Vegetation	X		Small amounts of vegetation would be impacted at each structure location. Analyzed in Section 3.4.	Lara Kobelt 12/22/2021
Visual Resources	X		The proposed Project is within VRM Class III where the existing landscape can be altered but not attract or focus attention of the casual viewer. Analyzed in Section 3.8.	Steve Leslie 1/26/2022
Wastes (hazardous or solid)		X	No hazardous materials will be stored / used within the ROW. Include standard stipulations into the final grant document(s).	Lisa Christianson 1/05/2022
Water Resources		X	No new impacts to water resources would occur – existing roads would be used for access and structures would be located outside of drainages.	Boris Poff 1/30/2022
Wetlands and Riparian Areas		X	There are no riparian areas in the Project area.	Boris Poff 1/30/2022
Wild Horse and Burros		X	Project is not located within a herd management area and would have no impact on wild horse or burro populations.	Tabitha Romero 1/10/2022
Wilderness/Wilderness Study Areas/Lands with Wilderness Characteristics		X	Project is not within or near a wilderness area.	Lee Kirk 1/31/2022

3.1 Air Quality

Affected Environment

The Environmental Protection Agency (EPA) establishes National Ambient Air Quality Standards (NAAQS) for the following common air pollutants: ozone (O3), nitrogen dioxide (NO2), carbon monoxide (CO), sulfur dioxide (SO2), particulates less than 2.5 microns and less than 10 microns (PM2.5, PM10), and lead (Pb). They have developed primary and secondary NAAQS for these air pollutants to protect human health and prevent environmental and property damage. The Project area is currently in attainment for the above air pollutants.

The Clark County Department of Air Quality administers the air pollution control program for Clark County. PM 10 is the pollutant primarily associated with construction activities and there are several provisions of the Air Quality Regulations (AQRs) that regulate proposed construction.

Environmental Effects of the No Action Alternative

Under the No Action Alternative, the Project would not be built and resources in the area would continue to be subject to existing conditions. The BLM and Reclamation lands in the area would remain open for other uses including motorized recreational use which could add to air pollutants during activity.

Environmental Effects of the Proposed Action and Alternatives

Under the proposed action and alternatives there would be a short-term temporary increase in particulates in the form of fugitive dust from construction.

Mitigation Measures

A dust control permit must be obtained prior to soil disturbing or construction activities impacting 0.25 acres or more in overall area. Best Available Control Measures (BACM) must be employed and included in a Dust Mitigation Plan. Additional measures to reduce impacts to air quality can be found in **Appendices A** and **B**.

3.2 Cultural Resources

Affected Environment

The area of potential effect (APE) for cultural resources is defined as the area where cultural resources could be affected by the proposed project. The APE for direct effects includes all components associated with the proposed project. The BLM and Reclamation, in consultation with the Nevada State Historic Preservation Office (SHPO) defined the APE to be an area along the proposed corridors ranging from 400 to 2,300 feet wide, totaling approximately 811 acres. The cultural resource study consisted of a literature review for the APE and a one-mile radius around the APE in conjunction with a field inventory of the APE.

A Class III pedestrian field inventory was conducted of the 811 acres. Field archaeologists systematically inspected the APE using parallel transects no further than 30-meters apart. No subsurface testing was conducted during the field survey.

Brief Cultural History

The presence of humans is documented by prehistoric sites across the Great Basin and greater American Southwest during the late Pleistocene up to 15,000 years ago. Around 1,500 years ago the arrival of ceramics coincided with the presence of permanent and semi-permanent villages. There is clear evidence of people that are associated with Southern Paiute and Lower Colorado people (Patayan) utilizing the area by 850 years ago. Historically, the area was settled by American troops, ranchers, and farmers in the 1800s.

Results of Literature Review and Survey

The literature review identified 52 cultural resources within the APE and/or the one-mile radius around the APE. Ten of these sites have been previously recorded within the APE. The remaining 42 sites were mapped outside the APE. These sites include 22 prehistoric sites, 22 historic era sites, and 8 sites that are of an unknown age. The field inventory identified 9 of the 10 previously recorded sites within the proposed project area. One site was not relocated during the field inventory. The nine identified previously recorded sites include three historic era transmission lines (S2129, S2130, S2244), four historic era trash scatters (26CK10530, 26CK10534, 26CK10536, 26CK10537), and two historic era roads with associated trash (26CK10292, 26CK10354). The site that was not relocated was a historic era trash scatter (26CK10538). Of the nine identified sites, two (S2129 and S2130) are considered eligible to the National Register under criteria A and C. The remaining sites have been completely recorded so the information potential is exhausted and no further information would be obtained from additional studies.

The APE does not contain any traditional cultural properties identified as having cultural or religious significance base upon tribal consultations.

Environmental Effects of the No Action Alternative

Under the No Action Alternative, the Project would not be built and resources in the area would continue to be subject to existing conditions. The BLM and Reclamation lands in the area would remain open for other uses including motorized recreational use which could disturb additional lands.

Environmental Effects of the Proposed Action and Alternatives

There are two sites within the APE that are eligible to the NRHP under criteria A and C. These two eligible sites are active transmission lines that remain in use. The proposed project would not adversely affect the two sites' NRHP eligibility status.

The proposed project would not impact eligible historic properties. Implementation of the proposed project would not result in direct impacts to potentially eligible cultural resources but could possibly result in the disturbance and/or loss of currently unidentified sites or artifacts. Such losses would not be expected as an Unanticipated Discoveries Plan would be developed and implemented prior to the start of construction. Therefore, the proposed project would not contribute to cumulative impacts to cultural resource.

Mitigation Measures

Measures to reduce impacts to cultural resources can be found in **Appendices A** and **B**.

3.3 Wildlife Resources

Affected Environment

The proposed Project area supports and is adjacent to lands that support wildlife characteristic of the Mojave Desert. Biological diversity varies according to topography, plant community, and proximity to water, soil type, and season. Wildlife species in the general area include small mammals, rodents, birds and reptiles. The Resource Management Plan for the BLM Southern Nevada District provides a summary of potential wildlife species that could be present.

Sensitive Wildlife Species

Sensitive Wildlife Species

Sensitive species are species that require special management consideration to avoid potential future listing under ESA. A complete list of Sensitive species within the area can be found in the Resource Management Plan. The following sensitive species could potentially be impacted by the proposed action.

Western chuckwalla (*Sauromalus obesus*) - The western chuckwalla is a Sensitive species found throughout the southwestern United States. They inhabit rocky outcrops where cover is available between boulders or in rock crevices and could occur within the Project area on rock outcroppings.

Banded Gila monster (*Heloderma suspectum*) - The Gila monster's range includes southern Nevada and its habitat includes Mojave and Sonoran desert scrub, desert grassland, thorn scrub, and occasionally pine-oak woodland.

Mojave shovel-nosed snake (*Chionactis occipitalis occipitalis*) - The Mojave shovel-nosed snake is a burrowing, nocturnal snake frequenting washes, dunes, sandy flats, loose soil and rocky hillsides in sandy gullies or pockets among the rocks throughoutthe Mojave Desert.

Desert glossy snake (*Arizona elegans eburnata*) - The desert glossy snake is a burrowing, nocturnal snake that occurs in a variety of habitat throughout the Mojave Desert including light shrubby to barren desert, grasslands and woodlands.The desert glossy snake generally prefers open areas where the ground is sandy to loamy.

Mojave Desert Sidewinder (*Crotalus cerastes cerastes*) - The Mojave Desert sidewinder is a nocturnal snake hiding in the day. This species is most common where there are sand hummocks topped with creosote bushes, mesquite, or other desert plants but may also occur on flats, barren dunes, hardpan, and rocky hillsides.

Desert Bighorn Sheep (*Ovis canadensis nelsoni*) – Desert bighorn sheep are heavy-bodied sheep that are found in Nevada’s mountainous deserts. This species occupies rough and rocky open mountainous habitats. Alluvial fans and washes in flatter terrain are also used for forage and water and as connectivity habitats between more rugged areas.

Bald Eagle (*Haliaeetus leucocephalus*) – The bald eagle is a large bird of prey that opportunistically feeds on a variety of prey, but generally prefers fish. Bald eagles are protected under the Bald and Golden Eagle Protection Act (BGEPA). This species typically breeds in forested areas adjacent to large bodies of water including lakes, reservoirs, and rivers. Bald eagles roost in large, super-canopy trees that are open and accessible and within a short distance to water foraging areas.

Golden Eagle (*Aquila chrysaetos*) – The golden eagle is a large bird of prey that occupies a wide variety of latitudes and habitats throughout the Palearctic and into northern Africa. Golden eagles are protected under the BGEPA. This species occurs at sea level, in the highest mountains, and at all intermediate elevations. In the desert southwest, golden eagles are associated with wide, open areas and typically away from human civilization. Golden eagles in the southwest typically nest in mountainous areas with tall cliffs, but will occasionally use tall, riparian trees. Golden eagles forage over open habitats such as grasslands and shrublands.

Other Sensitive Wildlife Species

In addition to the sensitive species listed above, the following species were included as species that warranted attention for other reasons.

Desert Kit Fox (*Vulpes macrotis*) – The desert kit fox is a small, cat-sized fox that is primarily active during the cool night. Desert kit foxes are protected as fur-bearing mammals in the state of Nevada. Desert kit foxes use burrow systems during daytime hours where they take refuge from hot and cold temperatures as well as predators. This species occupies flat, arid land within desertscrub habitats with abundant bushes.

American Badger (*Taxidea taxus*) – The American badger is a carnivore/scavenger that occupies open areas throughout the western United States. Badgers are more active at night, typically spending the daytime hours in dens. Badgers burrow for food as well as for dens to use as cover and in which to have young. In the desert southwest, this species mostly occurs in open desert valleys with deep soils that are conducive to digging but can be found in mountainous areas as well.

Environmental Effects of the No Action Alternative

Under the No Action Alternative, the Project would not be built and resources in the area would continue to be subject to existing conditions. The BLM and Reclamation lands in the area would remain open for other uses including motorized recreational use which could disturb additional wildlife habitats.

Environmental Effects of the Proposed Action and Alternatives

Depending on the alternative developed, only 7.21 to 9.56 acres of habitat on federal lands would be permanently affected by spur roads and the locations of structures. Approximately 22.48 to 37.06 acres of wildlife habitat on federal lands would be temporarily impacted by construction activities at structure sites and pull sites. The primary direct impacts of the proposed action on wildlife would be potential mortality or injury to ground dwelling animals during construction and displacement of individuals during construction. Indirect impacts could include the introduction and spread of weeds and increased erosion potential. Wildlife species in the general area are common and widely distributed throughout the area and the loss of some

individuals and/or their habitat should have negligible impact on populations of the species throughout the region.

Sensitive Wildlife Species

Impacts to sensitive species are expected to be limited and not anticipated to lead to further decline of the species range-wide. Any impacts to sensitive species would be avoided and/or minimized through the special stipulations provided below.

Western Chuckwalla and Banded Gila monster - If a banded Gila monster or chuckwalla is observed in the construction area or adjacent, it should be avoided to the extent practical and allowed to leave on its own without harassment. In addition, NDOW protocols for Gila monster would be followed.

Mojave shovel-nosed snake, Mojave Desert Sidewinder, Desert glossy snake - The above listed snake species are mainly nocturnal so impacts to individuals of these species by construction would be limited. If any snake species is observed in or adjacent to the construction area, it would be avoided to the extent practical and allowed to leave on its ownwithout harassment.

Bald and Golden Eagles – Bald and golden eagles could be observed flying over and potentially foraging in the vicinity of the construction area. It is likely that both species would avoid active construction areas. Bald eagles are not expected to nest anywhere in the vicinity of the Project. Nevada Division of Natural Heritage (NDNH) data does not show any known golden or bald eagle nests within 5 miles of the proposed Project (Miskow 2022). If a golden eagle nest is observed in the vicinity of the construction areas, a 1-mile buffer will be placed around the nest and no work will occur within that buffer (USFWS 2021). This buffer may be reduced in consultation with the USFWS. If either species are observed in the construction area or adjacent, they would be avoided and construction would potentially be halted until they leave the area on their own without harassment. In addition, the power line would be constructed following industry standards aimed at reducing avian collisions and electrocutions as described in Appendix B.

Desert Bighorn Sheep – Desert bighorn sheep may be encountered in the mountainous areas of the construction area. It is likely that bighorns would avoid active construction areas. If desert bighorn sheep are observed in the construction area or adjacent, they would be avoided until they leave the area on their own without harassment.

Desert Kit Fox and American Badger – These species may be encountered within the vicinity of the Project area. It is likely that they would avoid active construction areas but can be attracted to improperly contained trash associated with construction projects. All garbage would be disposed of properly in secure locations and/or in receptacles with tight-fitting lids to ensure that no garbage is spread within work areas. If kit fox or badgers are observed in the construction area or adjacent, they will be avoided to the extent practical and allowed to leave on their own without harassment.

Mitigation Measures

Measures to reduce impacts to wildlife resources and sensitive wildlife species can be found in **Appendices A** and **B.**

3.4 Vegetation

Affected Environment

The entire Project area is within the *Larrea tridentata – Ambrosia dumosa* (creosote-bursage) Shrubland Alliance under the vegetation classification system of the Nevada Natural Heritage Program (Peterson 2008). While the vegetation in the Project area fits within this broad alliance, there is substantial variation across the survey area, which was divided into five habitat types based on both geomorphology and vegetation – south bajada, hilly, steep hilly, disturbed, and north bajada.

Threatened, Endangered, and Candidate Species

The chalk dudleya (*Dudleya pulverulenta* ssp. *arizonica*) was identified as the only special-status species likely to be present in the survey area. The chalk dudleya is not listed by the BLM as a Sensitive Species but is on the NNHP watch list. The chalk dudleya grows in cracks and crevices in rock outcrops of various composition from limestone to granite, and on various exposures, sometimes on rocky or sandy soils, in the creosote-bursage, blackbrush, mixed-shrub, and lower pinyon-juniper zones at elevations of 500 to 2,700 feet.

Potentially suitable habitats for the chalk dudleya in the form of steep rock outcrops and cliffs composed of intrusive igneous rocks are present in the steep hill habitat and were surveyed. No individuals or occurrences of the chalk dudleya were observed in the Project area.

Forestry (cacti, yucca)

No *Yucca* sp. were observed in the Project Area. Estimates of density in the Project area are provided for each cacti species are provided below.

- *Cylindropuntia acanthocarpa* var. *coloradensis* (buckhorn cholla) - Generally scattered throughout. Moderate density (two to ten individuals per acre) in the hill and steep hill habitat, low density (less than two individuals per acre) elsewhere.
- *Cylindropuntia bigelovii* (teddy-bear cholla) - Patchy distribution with many small groups covering areas of less than an acre at high density (up to 100 individuals per acre) in the hill habitat. A few similar patches in the steep hill and south bajada habitats. Not present in the north bajada or disturbed habitats.
- *Cylindropuntia ramosissima* (pencil cholla) - Scattered throughout, generally at low density, but reaching moderate density in the hill and south bajada habitats.
- *Echinocereus engelmannii* (Engelmann's hedgehog cactus) - Occasional individuals or loose groups of a few individuals in the hill and steep hill habitats.
- *Ferocactus cylindraceus* (barrel cactus) - Present at moderate density in the hill and steep hill habitats. Some areas reaching about 20 individuals per acre. Not present in the south bajada, disturbed, or north bajada habitats.
- *Mammillaria dioica* (fishhook cactus) – Very few individuals in the hill and steep hill habitats. Not present in the south bajada, disturbed, or north bajada sections.

- *Mammillaria tetrancistra* (fishhook cactus) - Scattered individuals in the hill and steep hill habitats. Not present in the south bajada, disturbed, or north bajada habitats.
- *Opuntia basilaris* var. *basilaris* (beavertail cactus) - Scattered, generally at low density, but reaching moderate density in the hill and south bajada habitats. Not present in the disturbed habitat.

Invasive Species / Noxious Weeds

Noxious weeds are plant species that spread into areas where they are not native and typically displace native vegetation or bring about changes in species composition, community structure, or ecosystem function. The Nevada Revised Statutes (NRS) define "noxious weed" as "any species of plant which is, or is likely to be, detrimental or destructive and difficult to control or eradicate" (NRS 555.005). The State of Nevada maintains a list of noxious weeds.

Two of the listed noxious weed species were observed in the Project area during the field survey (Sahara mustard and salt cedar). Several other non-native species that are not considered noxious weeds, including stork's bill (*Erodium cicutarium*), Mediterranean grass, and red brome, were observed in the survey area. In general, non-native species were observed in and near disturbed areas such as roads and were not observed or were present at low density in undisturbed, native habitats.

Environmental Effects of the No Action Alternative

Under the No Action Alternative, the Project would not be built and resources in the area would continue to be subject to existing conditions. The BLM and Reclamation lands in the area would remain open for other uses including motorized recreational use which could disturb additional lands.

Environmental Effects of the Proposed Action and Alternatives

The Proposed Action and alternatives would result in direct impacts to native vegetation. Depending on the alternative developed, only 7.21 to 9.56 acres of vegetation on federal lands would be permanently affected by spur roads and the locations of structures. Approximately 22.48 to 37.06 acres of vegetation on federal lands would be temporarily impacted by construction activities at structure sites and pull sites. Short-term direct impacts would include crushing vegetation during construction.

Indirect short-term impacts could include a small amount of increased construction traffic along the ROW that could result in increased non-native species introductions and generating dust that could affect vegetation photosynthesis.

The Project could promote the expansion of existing populations of noxious weeds within the transmission line corridor.

Applying the identified mitigation measures would help to mitigate the impacts to vegetation and introduction and spread of noxious andinvasive weeds in temporary disturbance areas, but permanent impacts to vegetation would still occur.

Mitigation Measures

Measures to reduce impacts to vegetation resources can be found in **Appendices A** and **B.**

3.5 Floodplains

Affected Environment

A portion of the Project area near the intersection of Needles Highway and Bruce Woodbury Drive is within an area that has been designated as flood zones by the Federal Emergency Management Agency (FEMA). The Clark County Flood Control District has developed a flood control structure on BLM-managed land in this area just west of Needles Highway to control flood flows before they reach the developed areas in Laughlin.

The FEMA maps for this area show the areas that are subject to flooding (**Figure 3-1**). These include areas with a one-percent-annual-chance of flooding (also referred to as the 100-year floodplain) in addition to areas with a 0.2 percent annual chance of flooding (500-year floodplain). During flood events, these areas could experience sheet flows on sloping terrain.

Federal activities within the 100-year floodplain require consideration of Executive Order (EO) 11988 "Floodplain Management". This EO requires federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

Environmental Effects of the No Action Alternative

Under the no action alternative, the activities in this floodplain would not take place and there would be no additional impacts to floodplains in this area and it would continue to be subject to existing conditions.

Environmental Effects of the Proposed Action and Alternatives

As shown on **Figure 3-1**, several of the transmission structures for the Proposed Action and alternatives would be located within the 100-year and 500-year floodplains.

All potential routes to the Mohave Substation in this area would cross these floodplain zones. Therefore, no practicable action alternatives for the proposed transmission line would be available to locate the Proposed Action outside the floodplains in the Laughlin area. In Section 17, T32S R66E on BLM-managed land, the proposed line and action alternatives would cross just upstream of the Hiko Springs Wash Detention Basin, a flood control structure on BLM-managed land developed and maintained by the Clark County Flood Control District. Because of their small footprint and dispersed spacing, transmission structures would not impede or affect flood flows. In addition, the foundations of structures that would be located with the floodplain would be designed to accommodate potential flood flows. Therefore, the Proposed Action and alternatives would not result in adverse effects to the floodplain and would be in compliance with EO 11988.

Mitigation Measures

Measures to reduce impacts to floodplains and water resources can be found in **Appendix B.**

3.6 Recreation

Affected Environment

All the BLM-managed federal land crossed by the Proposed Action or alternatives are within the Laughlin Special Recreation Management Area (SRMA) (**Figure 3-2**). SRMAs are

administrative units where existing or proposed recreation opportunities and recreation-setting characteristics are recognized for their unique value, importance, and/or distinctiveness compared to other areas used for recreation and are areas where recreation is a principal management objective. The Laughlin SRMA covers 25,600 acres and was established for use by off-highway vehicles (OHVs) and to facilitate permitted OHV events. This area is also used for several Special Recreation events a year, the UTV Legends Race in February, The Laughlin Desert Classic in September, the Spartan Race in November and The Rage at the River in December. The proposed project will use section of the racecourse mentioned above.

Environmental Effects of the No Action Alternative

Under the No Action Alternative, the Project would not be built and resources in the area would continue to be subject to existing conditions. The BLM and Reclamation lands in the area would remain open for other uses including motorized recreational use.

Environmental Effects of the Proposed Action and Alternatives

Short-term temporary effects to OHV use in the area could occur during the 9 to 12-month construction period, along with the events mentioned above. Construction vehicles and personnel would use the existing roads near the proposed ROW for access. During some periods, access to some areas on federal land for OHV use could be limited. If OHV events are scheduled during the construction period, construction would be suspended in any area where the event would occur to eliminate potential conflict.

Following construction, the Project would not be expected to create long-term effects to OHV use. The new structures would be located adjacent to or near other similar existing transmission structures and existing roads in the area and the roads would remain open.

Mitigation Measures

Construction would be avoided during any planned OHV events. Additional measures to reduce impacts to recreation can be found in **Appendices A** and **B.**

3.7 Lands / Realty

Affected Environment

The proposed ROW for the A-M Transmission Line would cross areas where other uses occur on federal lands including other ROWs / utilities. The southern portion of the proposed ROW would parallel the ROW for existing Lugo-Mohave 500kV line on federal land for approximately 3.6 miles (about 3.1 miles managed by the BLM and 0.5 miles managed by Reclamation). In this segment, access to the proposed line would be provided by the existing Lugo-Mohave access road.

In Section 17, T32S R66E on BLM-managed land, the line would enter a designated utility corridor (**Figure 3-3**) where the proposed line would cross the ROW for the existing Eldorado-Mohave 500kV line. In this same area, the proposed line would cross just upstream of the Hiko Springs Wash Detention Basin flood control structure.

Environmental Effects of the No Action Alternative

Under the No Action Alternative, the Project would not be built and resources in the area would continue to be subject to existing conditions. The BLM and Reclamation lands in the area would remain open for other appropriate uses.

Environmental Effects of the Proposed Action and Alternatives

The Proposed Action and all alternatives would parallel and cross other permitted facilities on federal land. The Applicant would coordinate with the other ROW-holders to ensure that the construction and operation of the proposed Project would not interfere with continued operation of the existing facilities.

Mitigation Measures

Measures to reduce impacts to land use can be found in **Appendices A** and **B.**

3.8 Visual Resources

Affected Environment

The proposed transmission Project crosses an area of varied topography that contains vegetation characteristic of the Mojave Desert. This landscape is dominated by low, widely spaced shrubs on flat terrain. Most of the rugged terrain crossed by the line has little vegetation on the slopes which becomes less near the peaks.

The transmission line would parallel the existing Lugo-Mohave 500kV line for over half of its length and would be near multiple other existing high voltage transmission lines and substations for the remainder as it approached the Mohave Substation to which multiple high voltage electrical lines connect. As a result, the current visual setting has been significantly modified by these exiting utilities.

Most of the Project is located where it would not be visible to most potential viewers because of its distance from accessible viewing points and intervening terrain. The line would be visible in the northern part of the route between Needles Highway and the Mohave Substation where the line would cross Needles Highway. In this portion of the route, the proposed line would look generally the same as the other high-voltage lines in the area but would be most noticeable where it is separated from the existing lines.

The landscape where the Project would be located is common within the physiographic province and the existing manmade modifications present within and directly adjacent to the Project area (numerous transmission lines, flood control structure, highways / roads, and OHV routes) detract from the natural visual character. Therefore, the scenic quality of the area is low. The visual sensitivity level rating would also be characterized as low due to the existing utility uses in the area. The only potential observation points identified would be of the northern section of the Project and would include travelers in vehicles on segments of Needles Highway and Bruce Woodbury Drive where the Project crosses or parallels. No sensitive residential or recreational observation points were identified.

Visual resource management (VRM) classes are categories assigned to BLM-managed lands that portray the relative value of the visual resources and the associated visual management objectives (BLM 1984). One of four VRM classes, (I, II, III, IV) is assigned to an area with

VRM Class I areas having the most valuable visual resources and VRM Class IV areas having the least. The VRM classes guide future land management actions and subsequent site-specific implementation decisions and the management objectives of each class are described below:

- Class I Objective. The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
- Class II Objective. The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
- Class III Objective. The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
- Class IV Objectives. The objective of this class is to provide for management activities which 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.

Figure 3-4 shows the VRM classes on the BLM-administered lands in the Project area that would be crossed by the Project. As shown, the BLM-managed lands that would be affected by the Project are designated as VRM Class III.

Environmental Effects of the No Action Alternative

Under the No Action Alternative, the Project would not be built and resources in the area would continue to be subject to existing conditions. The BLM and Reclamation lands in the area would remain open for other uses.

Environmental Effects of the Proposed Action and Alternatives

The southern portion of the Project where it is located on federal lands would not be visible because of the rugged terrain and its distance of over 3 miles from viewpoints on the Needles Highway. The presence of the transmission line in this area would be consistent with the VRM Class III objectives for this area.

The northern part of the Proposed Action and both alternatives on federal lands would be visible from Needles Highway where it crosses the highway. Views of the Project would be available to north and south-bound travelers on the highway for approximately a one-mile section of the highway north and south of the crossing. Views of the Project to those traveling on the highway will be limited to very short durations because of the highway speeds at which the viewer would be traveling.

The proposed Project would establish a new crossing of Needles Highway about 0.25 miles north of the intersection of Needles Highway and Bruce Woodbury Drive. The line would be likely to be noticeable to travelers on the highway because of its separation from the existing nearby lines. The presence of the line would change the visual character of the immediate vicinity but would be consistent with the existing high voltage lines in the area.

Alternative A would establish a new crossing of Needles Highway about 0.5 miles north of the crossing location for the Proposed Action. It would also be visible to north and south-bound travelers on the highway and could be more noticeable and change the visual character of the in the immediate vicinity because of its separation from the existing lines similar to the Proposed Action. Impacts are anticipated to be moderate, and the presence of the transmission line in this area would be consistent with the VRM Class III objectives for this area.

Alternative B would cross Needles Highway at the intersection of the highway and Bruce Woodbury Drive where the two existing high-voltage lines currently cross. It would then parallel the two existing lines south of Bruce Woodbury Drive. It would be visible to travelers on Needles Highway and Bruce Woodbury Drive but would repeat the basic elements of form, line, color, and texture of the existing transmission lines. Impacts are anticipated to range from weak to moderate, and the presence of the transmission line in this area would be consistent with the VRM Class III objectives for this area.

The Project would be located near two existing transmission lines. By grouping these similar transmission facilities across this area, the overall visual effect may be minimized on a regional basis. However, there would be a slight increase in apparent visual contrasts noticeable to the casual observer in the immediate viewshed, such as where the Project crosses Needles Highway. The addition of new transmission structures into a landscape with existing modifications from two transmission lines may result in an increase in visibility because of the increased contrast.

Mitigation Measures

Measures to reduce impacts to visual resources can be found in **Appendices A** and **B.**

3.9 Soils

Affected Environment

The Project corridor is located west of the Colorado River on lands with existing grades sloping downward from the northwest to the east and southeast. The line crosses alluvium in its southern and northern sections and the foothills of the Newberry Mountains range in between. Elevations range from about 700 feet on the northern part of the line near the Mohave Substation to about 1,600 feet at the southern end of the line near the Arida Substation.

Typical of soils in arid environments, local soils are poorly developed and shallow or almost completely absent in some areas. Where soils are present, nearly all the soils crossed by the line are associations of very gravelly and excessively drained with soils exposed at the ground surface being predominately sand and gravel. In general, the upper 2 to 3 feet of soil are loose becoming dense to very dense with varying degrees of interlayered zones of soil cementation.

Environmental Effects of the No Action Alternative

Under the No Action Alternative, the Project would not be built and resources in the area would continue to be subject to existing conditions. The BLM and Reclamation lands in the area would remain open for other uses including motorized recreational use which could disturb additional lands.

Environmental Effects of the Proposed Action and Alternatives

There will be no significant effects on topography or geology and construction or operation of the Project will not alter soil stability. Minimal grading will occur on the site and the natural terrain and its existing drainage system will facilitate natural drainage through the area by avoiding major drainages and will not create a long-term effect to local topography.

The Proposed Action and alternatives would result in direct disturbance of soils. Depending on the alternative developed, 7.21 to 9.56 acres on federal lands would be permanently affected by spur roads and the locations of structures. Approximately 22.48 to 37.06 acres of temporary soil disturbance would occur on federal lands by construction activities at structure sites and pull sites.

The potential for wind and water erosion will be temporarily increased by soil disturbance during construction and decommissioning resulting in potential short-term adverse impacts to soils. Most of the disturbed areas will not be fully graded with vehicles driving over and crushing vegetation. This would leave the soil profiles more intact than grading and also leave roots to help hold the soil. However, loosening and exposing soil to erosion will occur until such time the site vegetation is re-established.

Mitigation Measures

Measures to reduce impacts to soil resources can be found in **Appendices A** and **B**.

3.10 Fire Management

Affected Environment

The Project area is within the Las Vegas Interagency Communication Center (LVICC) Dispatch Area. The BLM, National Park Service, Reclamation, Nevada Division of Forestry (NDF), and Clark County Rural Fire all have jurisdictional responsibility for responding to wildfires that threaten lands within their jurisdiction. The BLM manages fire response through the Southern Nevada District Fire Management Plan (2019). Reclamation manages fire response through an agreement with the BLM and the Lower Colorado Fire Management Plan (2014). NDF has fire response for the Big Bend of the Colorado River Recreation Area south of the Project area. Part of the Project area is within wildland urban interface associated with the community of Laughlin.

Wildfires have occurred in the general area within the last decade. The environmental effects of wildfires in this area are short and long-term loss of native plant species and habitat. Most if not all native Mojave Desert plant species and the desert tortoise are not fire adapted. Wildfire could threaten the nearby wildland urban interface, human safety, and public and private property. Fires that ignite and burn in ephemeral annual grass could increase fire occurrence once an annual grass fire cycle has become established. Vegetation and fuels in this area can vary annually due to local and regional climate and environmental factors.

Environmental Effects of the No Action Alternative

Under the No Action Alternative, the Project would not be built and resources in the area would continue to be used subject to existing conditions. The BLM and Reclamation lands in the area would remain open for other uses including motorized recreational use which could present fire risk.

Environmental Effects of the Proposed Action and Alternatives

Short-term fire risk would temporarily increase as a result of construction activities – vehicles and equipment present within the ROW and associated access roads. The proposed action and alternatives can have long-term relatively low fire risks as transmission lines are a constant ignition source, and often system faults and failures coincide with extreme fire behavior. However, powerline fires usually occur due to high winds and contact with vegetation, which is unlikely within the project area with given the vertical separation between transmission lines and relatively low Mohave desert vegetation. Long-term fire risk could increase if the amounts of annual weeds in the project area are increased significantly. The environmental effects of a wildfire would be damage to property, or destruction of native plant species and habitat.

Mitigation Measures

Measures to reduce risk from fire can be found in **Appendices A** and **B**.

3.11 Threatened, Endangered, and Candidate Animal Species

Affected Environment

The only federally protected species known to occur in the vicinity of the project area is the threatened Mojave desert tortoise (*Gopherus agassizii*). The proposed project is not within desert tortoise critical habitat.

The proposed project area supports and is adjacent to lands that support wildlife characteristic of the Mojave Desert. Desert tortoises can potentially survive and reproduce provided if their basic habitat requirements are met. These requirements include a sufficient amount and quality of forage species; shelter sites for protection from predators and environmental extremes; suitable substrates for burrowing, nesting, and overwintering; various plants for shelter; and adequate area for movement, dispersal, and gene flow.

Historical survey data indicates that the project area and areas adjacent to the project area have low to moderate tortoise densities and contain tortoise sign including live tortoises. Undisturbed lands within and adjacent to the proposed project site contain the key habitat requirements for desert tortoises to survive. Therefore, there is the potential for tortoises to be present within and adjacent to the proposed project site and may wander onto the project site during project related activities.

Environmental Effects of the No Action Alternative

None of the impacts to desert tortoise or desert tortoise habitat associated with construction, operation, and maintenance of the proposed project would occur under the No Action Alternative.

Environmental Effects of the Proposed Action

The Proposed Action has a may affect, likely to adversely affect determination for the federally threatened desert tortoise (*Gopherus agassizii*) and no effect for its designated critical habitat. The proposed project will have no effect on any other federally protected species or designated critical habitat due to absence of the species and/or habitat.

Section 7 Consultation for this project is covered under the Programmatic Biological Opinion (08ENVS00-2019-F-0153) & Appended Biological Opinion (2022-0027943-S7-001) contingent on compliance with the terms and conditions therein (Sec 7 Log # NV-052-22-094).

Adverse effects to desert tortoise would primarily result from tortoises found onsite during construction or O&M being captured and moved up to 300 meters out of harm's way, and in the unlikely event of the crushing of tortoise burrows and injury or death of individuals from being crushed by heavy equipment if they were not relocated. Additionally, tortoises moved out of harm's way could become dehydrated by voiding their bladders during handling, resulting in a lower survival rate. The survey results included in the request to append confirmed that the action area is within and adjacent to suitable desert tortoise habitat; however, no live tortoises or sign were observed during surveys. The use of authorized biologists and monitors to locate any tortoises onsite and move them from harm's way will greatly reduce the potential for mortality or injury. Activities in the action area could also increase the potential for tortoise predation through attracting and subsidizing tortoise predators.

Minimization measures are expected to reduce this risk. The Proposed Action would produce an estimated 68.66 acres of new disturbance in desert tortoise non-critical habitat. The loss of habitat by the removal of cover and forage plants, introduction or spread of non-native plant species, and soil compaction, as a result of ground disturbance from the proposed action, is expected to be minimized by the Terms and Conditions in the PBO and restated in Appendix C of this biological opinion. All programmatic-level effects of the proposed action are within the scope of BLM's PBO. These effects are described in Section 8.1, titled "Desert Tortoise General Effects" on pages 205- 216. This section includes 'Effects of Capturing, Handling, and Moving Desert Tortoises,' 'Effects of Roads, Vehicles, and Project Access on the Desert Tortoise,' and 'Effects of Subsidized Desert Tortoise Predators.' Effects of the action are further described under the 'Linear ROW' heading in "Desert Tortoise Effects by Program," Section 8.2, of the PBO on pages 218-220.

Mitigation Measures

Additional measures to reduce impacts to threatened, endangered, and candidate wildlife species can be found in **Appendices A** and **B.**

3.12 Migratory Birds

Affected Environment

The proposed project area supports and is adjacent to lands that support wildlife characteristic of the Mojave Desert. Biological diversity varies according to topography, plant community, and proximity to water, soil type, and season. In this region, typically the breeding season is when these species are most sensitive to disturbance, which generally occurs from February 15th through August 31st. The following sensitive bird species could potentially be impacted by the

proposed action: Western burrowing owl (*Athene cunicularia hypugea*), LeConte's thrasher (*Toxostoma bendirei*), Loggerhead shrike (*Lanius ludovicianus*).

Environmental Effects of the No Action Alternative

Under the No Action Alternative, the habitat would not be disturbed and would remain able to support migratory bird species in the area. Therefore, their habitat would not be impacted by any construction, operation and maintenance associated with the Proposed Action.

Environmental Effects of the Proposed Action

Migratory bird species would be displaced as habitat is disturbed within the project area. The primary direct impacts of the Proposed Action on birds would be killing or maiming of ground dwelling animals, displacement of individuals, the permanent loss of habitat, increased potential for harassment, and increased noise during project related activities. Indirect impacts could include the introduction and spread of weeds and increased erosion potential. Migratory bird species are in the area at different times of year and the loss of their habitat should have a negligible impact on populations of the species throughout the region. Impacts to migratory birds are not anticipated to lead to further decline of the species range-wide. Any impacts to migratory birds would be avoided and/or minimized through adherence to the attached project specific stipulations.

Mitigation Measures

Measures to reduce impacts to migratory birds can be found in **Appendices A** and **B.**

Chapter 4 Consultation and Coordination

Scoping and Public Participation

The Draft EA and FONSI were made available on the BLM National NEPA Register for a 30-day public review and comment period from March 2 to March 31, 2022.The comments received and responses are located in Appendix H..

Summary of Consultation

Consultation was conducted with several federal, state, and local agencies and Native American tribes to solicit input. These included consultations with the US Fish and Wildlife Service (USFWS), Nevada State Historic Preservation Office (SHPO), Clark County, Clark County Flood Control District, and others

Further consultation with USFWS may be required depending upon route selection for transmission line. The proposed route and alternative route A will require an appended consultation to the programmatic BO as these routes create >20 acres of new disturbance. Alternative route B will not require appended consultation as it is <20 acres of new disturbance. Route must be determined before Section 7 determination can be made.

The BLM initiated consultation with the State Historic Preservation Office (SHPO) with a letter notification (11/20/21). As of July 22, 2022 (07/22/22) consultation with the SHPO has been completed with a finding of no adverse effect on cultural resources.

Federally recognized Native-American tribes were invited by letter (January 18, 2022) to government-to-government consultation. This includes the Moapa Band of Paiutes, Las Vegas Paiute Tribe, Colorado River Indian Tribes, Fort Mojave Indian Tribe, Chemehuevi Indian Tribe, Twenty-Nine Palms Band of Mission Indians, Bishop Paiute Tribe, Fort Independence Indian Community of Paiute Indians, Hualapai Tribe, Kaibab Band of Paiutes, Paiute Indian Tribe of Utah, San Juan Southern Paiute Tribe, Hopi Tribe, Timbisha Shoshone Tribe, and the Utu Utu Gwaitu Paiute Tribe. In addition, the BLM contacted the Pahrump Paiute Tribe, a non-federally recognized tribe, with a letter notification (January 18, 2022) to offer feedback.

The BLM has continued correspondence with all tribes. In addition, the BLM has carried out government-to-government consultation meetings by phone with the Moapa Band of Paiutes (January 5, 2022) and Las Vegas Paiute Tribe (January 28, 2022). Tribal coordination with the Twenty-Nine Palms Band of Mission Indians Tribal Historic Preservation Office has been completed through virtual meetings (December 8, 2021 and April 13, 2022), who requested to view the cultural report. General interest was initially expressed by Twenty-Nine Palms in tribal coordination with the Tribal Historic Preservation Office. Fort Mojave Indian Tribe expressed general interest by phone (April 7, 2022), but BLM has not received any formal comments. Las Vegas has noted that this project may be outside their area of interest. No other comments or concerns have been shared with the BLM.

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Appendix A Standard Stipulations and Mitigation Measures

The following stipulations and mitigation measures must be implemented unless they are not applicable to the Proposed Action and alternatives. Those standard stipulations and mitigation measures that include "if applicable, if used, or if constructed" are to be implemented if the Proposed Action includes that activity or design.

1. General Resource Stipulations

1.1. The Holder shall comply with all applicable local, state, and federal laws and regulations for the protection of resources and the environment, to include but not limited to air, cultural, hazmat, soil, vegetation, water, wildlife.

1.2. As part of project reclamation, the Holder will be responsible for ensuring that any boreholes, wells, or other openings in the ground are backfilled and properly covered, according to the Nevada Regulatory Statues.

1.3. The Holder shall remove from public land and properly dispose of any and all trash, litter, debris, waste, excess materials, including flagging and signs, or other substances and materials resulting from the use under this authorization. All trash and food items shall be promptly contained within closed, raven-proof containers.

2. Threatened, Endangered or Candidate Animal Species

2.1. Section 7 Consultation for this project is covered under the Programmatic Biological Opinion (08ENVS00-2019-F-0153) & Appended Biological Opinion (2022-0027943-S7-001) contingent on compliance with the terms and conditions therein (Sec 7 Log # NV-052-22-094).

3. Cultural and Paleontological Resources

3.1. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the Holder, or any person working on his behalf on public or federal lands shall be immediately reported to the Authorized Officer. Holder shall immediately suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. The Holder will make every effort to protect the site from further impacts, including looting, erosion, or other human or natural damage. In some cases, this may delay activity at the site until the discovery may be recovered, or the project is modified to avoid impacting the find.

3.2. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or paleontological values. Any decision regarding suitable mitigation measures will be made by the Authorized Officer after consulting with the Holder. The Holder will be responsible for the cost of evaluation. Holder shall be responsible for the resultant mitigation costs.

4. Hazardous Materials

4.1. If hazardous materials/substances are used or present within the authorized area, the Holder shall immediately notify the Authorized Officer of any release (leaks, spills, etc.) of hazardous substances, toxic substances, or hazardous waste. As required by law, Holder shall have responsibility for and shall take all action(s) necessary to respond to and fully remediate releases (leaks, spills, etc.) within the authorized area. A copy of any

report required or requested by any federal, state, or local government agency as a result of a reportable release or spill of any hazardous substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved federal, state, or local government agency.

5. Survey Monuments

5.1. Holder shall protect all survey monuments found within the authorization area. Survey monuments include, but are not limited to, General Land Office and Bureau of Land Management Cadastral Survey Corners, reference corners, witness points, U.S. Coast and Geodetic Survey benchmarks and triangulation stations, military control monuments, and recognizable civil (both public and private) survey monuments. If any of the above are to be disturbed during operations, the Holder shall secure the services of a Professional Land Surveyor or Bureau cadastral surveyor to perpetuate the disturbed monuments and references using surveying procedures found in the Manual of Instructions for the Survey of the Public Lands of the United States and Nevada Revised Statutes, Chapter 329, Perpetuation of Corners. The Holder shall record such survey in the appropriate county and send a copy to the Authorized Officer. If the Bureau cadastral surveyors or other federal surveyors are used to restore the disturbed survey monuments, the Holder shall be responsible for the survey cost.

6. **Fire and Fuels Management**

6.1. Compliance with fire restrictions is mandatory while fire restrictions are in effect (43 CFR 9212). Fire restrictions are generally enacted May through October. Fire restriction orders are available for review at BLM district offices and on the BLM website.

6.2. The use of standard fire prevention measures should be practiced at all times (43 CFR 2805.12). Conditions that support wildfires can occur any time of the year in Southern Nevada.

6.3. The Holder shall immediately report fires to 911 or (702) 631-2350 and make all accommodations to allow immediate safe entry of firefighting apparatus and personnel.

6.4. An Origin and Cause Investigation will be carried out on any human caused fire by BLM law enforcement or their designated representative. To minimize disturbance of potential evidence located at the fire scene, the applicant/proponent shall properly handle and preserve evidence in coordination with the BLM. The BLM shall pursue cost recovery for all costs and damages incurred from human-caused fires on BLM lands when the responsible party(s) has been identified and evidence of legal liability or intent exists. Legal liability includes, but is not limited to, negligence and strict liability (including statutory and contractual liability), products liability, etc.

7. Invasive Species and Noxious Weeds

7.1. The Holder will keep their project area free of state-listed noxious weeds, such as Sahara mustard (*Brassica tournefortii)*, for the life of the project. The Holder shall perform annual monitoring for invasive species/noxious weeds. Any detections of noxious weeds should be reported to the SNDO Weed Management Specialist immediately (702-515-5000) to determine best course for treatment.

7.2. The use of pesticide treatment requires the Holder to coordinate with the BLM SNDO weed management specialist (702-515-5000) and prepare, submit, obtain, and maintain a pesticide use proposal (PUP) to utilize pesticides for project activities.

7.3. In order to reduce the accidental spread of noxious weeds, the Holder and any contractors shall avoid or minimize all types of travel through a state listed noxious weed-infested areas that can be carried to the project area. In order to minimize the threat of spreading noxious weeds project-related equipment (i.e. undercarriages and wheel wells) should be cleaned of all mud, dirt, and plant parts before moving into relatively weed-free areas or out of relatively weed-infested areas. Project workers shall inspect, remove, and dispose of weed seed and plant parts found on their clothing and personal equipment, bag the product, and dispose of it in a dumpster. If you have questions, consult with the BLM SNDO noxious weed coordinator.

7.4. During construction and maintenance activities the Holder shall:

7.4.1. Review the annual weed inventory prior to any ground disturbance;

7.4.2. Limit the size of any vegetation and/or ground disturbance to the absolute minimum necessary to perform the activity safely and as designed.

7.4.3. Begin activities in weed free areas whenever feasible before operating in weed-infested areas.

7.4.4. Locate equipment storage, machine and vehicle parking or any other area needed for the temporary placement of people, machinery and supplies in areas that are relatively weed-free;

7.4.5. Avoid or minimize all types of travel through weed-infested areas or restrict major activities to periods of time when the spread of seed or plant parts are least likely.

7.5. If landscaping is part of the project design, the Holder will ensure that landscaping does not contain state-listed noxious weeds, such as fountain grass (*Pennisetum setaceum*).

8. Vegetation

8.1. Restoration (for any ground-disturbing activities):

8.1.1. The Holder is responsible for filling out BLM's Restoration Plan Template, to be approved by BLM prior to issuance of an NTP, which describes how temporary disturbance will be restored.

8.1.2. The Holder is responsible for developing a decommissioning plan, following BLM's Restoration Plan Template, to be approved by BLM prior to issuance of an NTP, which describes how permanent disturbance will be restored.

8.1.3. Disturbances will not be released from restoration requirements until the standards are met as described in BLM's Restoration Plan Template. Weed Management stipulations must be followed.

8.1.4. Any use of seed or native plant materials will be approved by BLM in advance, and plant materials must originate from the appropriate Seed Transfer Zone and have appropriate seed tags, evidence of permits, and be weed free.

8.2. Cacti, Yucca, and Succulent Species:

8.2.1. Cacti, yucca, or other succulent species that cannot be avoided must be salvaged by a BLM-approved contractor, stored appropriately during construction, and then planted back into the ROW in natural patterns and densities after construction. Survival standard is 80%. Coordinate with BLM.

8.2.2. Cacti, yucca, or other succulent species in permanent disturbance areas must be salvaged by a BLM-approved contractor and moved to a BLM storage facility. Coordinate with BLM.

9. Mineral Resources

9.1. If construction activities produce excess mineral materials from within the boundaries of the Proposed Action, the mineral materials must be used within the boundaries of the Proposed Action or stockpiled within the boundaries of the Proposed Action for future disposal by the BLM.

9.2. If construction activities require that excess mineral materials be exported from within the boundaries of the Proposed Action as they are generated, then written authorization, a mineral material sales contract, a free-use permit, etc. must be obtained from the BLM by the Holder prior to exporting the excess mineral materials from within the boundaries of the Proposed Action.

9.3. If mineral materials are to be stockpiled on site for a future disposal, specific BLM use authorization in the form of a written authorization, mineral material sales contract, free-use permit, etc. must be obtained from the BLM prior to exporting the excess mineral materials from within the boundaries of the Proposed Action.

10. Migratory Birds

10.1. Projects that require ground disturbance or actions that could affect nesting birds, should try to be scheduled outside of the bird breeding season. Breeding season in the

SNDO generally occurs from February 15 to August 31. If a project cannot be scheduled outside of those dates, a qualified biologist may be required to conduct a survey for nesting birds. If nesting birds are found, methods to reduce project impacts to nesting birds will be developed in coordination with the BLM.

10.2. Any infrastructure for projects will be designed and constructed in a manner that does not allow open pipes that birds or other wildlife could be trapped in. This includes fencing, gates, or other materials with open holes. All open pipes will be capped or secured so that wildlife cannot access.

10.3. If lighting is installed on buildings or required by the FAA, lighting on buildings should be down-shielded and those structures/towers required by FAA to have lighting installed, should have flashing lights with the minimum intensity required by the FAA to prevent migratory bird collisions.

10.4. If project involves power lines and/or power line posts, the Holder shall follow Avian Power Line Interaction Committee (APLIC) guidelines (Suggested Practices for Avian Protection on Power Lines (2006) and Reducing Avian Collisions with Power Lines (2012)) to reduce this risk through facility design and comply with MBTA and other federal wildlife laws, due to potential for electrocution, collision, and nesting/perching by migratory birds on overhead power lines.

10.5. If guy wires are used on structures (including power line posts and communication towers) they must be marked with bird diverters so they are visible to prevent injury/mortality to birds through collision.

11. Fish and Wildlife, Excluding Federally Listed Species

11.1. If artificial water sources are used, ensure that they have a properly installed and designed escape ramp to allow for wildlife to flee in the event of accidental entrapping.

11.2. Project supplies or equipment where wildlife could temporarily hide will be inspected prior to moving them to reduce the potential for injury to wildlife. Supplies and equipment that cannot be inspected, or from which wildlife cannot escape or be removed, will be covered or otherwise made secure from wildlife intrusion or entrapment at the end of each work day.

11.3. If any Gila monsters are encountered during project construction they must be reported immediately to the Nevada Division of Wildlife at (702) 486-5127.

12. Wild Horse and Burro

12.1. If wild horses and/or burros are encountered in or near the authorized area do not feed, harass, or otherwise interact with the animal. Report sick or injured animals, or violations to animals to the BLM immediately.

13. Recreation

13.1. Unless expressly stated, a land use authorization does not create an exclusive right of use of an area by the holder. The holder shall not interfere with other valid uses of the federal land by other users, such as casual recreationists.

Appendix B – Design Features and Applicant-Proposed Mitigation

The following identifies the measures and best management practices (BMPs) proposed by the Applicant that would be applied to the Proposed Action and alternatives to avoid or mitigate resource impacts.

Applicant-Proposed Mitigation and Best Management Practices (BMPs) ARIDA-MOHAVE TRANSMISSION PROJECT
SOILS / EROSION
Grading would be minimized to only those areas where necessary to meet the construction and operational requirements of the Project.
Construction activities will be conducted in compliance with a stormwater pollution prevention plan (SWPPP) that would include BMPs and other erosion-control measures designed to minimize soil erosion and limit sheet flow and downstream sedimentation. The SWPPP would also incorporate adaptive management actions if erosion and sedimentation control measures are found to be insufficient to control surface water at the site.
To minimize wind erosion, all construction activities shall comply with the Fugitive Dust Control Plan that would be developed and implemented for the proposed Project.
A Restoration Plan will be implemented as needed to limit impacts to temporary disturbance areas as much as practicable.
HYDROLOGY / WATER QUALITY
The number of drainage crossings would be minimized to the extent possible and each would be designed to accommodate adequate flow.
Post-storm monitoring of erosion and sedimentation will be conducted during construction. If localized gullies develop or result in increased rates of erosion and sedimentation, repairs will be made, and erosion and sedimentation control measures will be updated if needed.
Transmission structures will be located outside of major drainages to the extent practical.
A Spill Prevention, Control, and Countermeasure (SPCC) plan will be developed and implemented during construction phase of the Proposed Project. The Plan will also provide for hazardous material spill prevention and clean-up measures, if a spill occurs.
AIR QUALITY
The Project would obtain a dust control permit from Clark County for construction activities including any required supplements.
The area of grading and vegetation removal would be limited to only that area required for Project construction and operation.
Ground disturbing activities would be undertaken in accordance with the applicable dust control plan(s) to minimize fugitive dust emissions.
Vehicular speeds on non-paved roads would be limited 25 miles per hour.
Ground disturbing activities would be phased where appropriate to limit the amount of disturbance at any one time.
Water would be applied to disturbed areas to control dust and facilitate soil compaction, where necessary. Approved palliatives would be used to control dust as required.
All paved roads would be kept clean of objectionable amounts of mud, dirt, or debris, as necessary. Gravel or other similar material would be used if needed where non-paved access roads intersect paved roadways to prevent mud and dirt track-out.
A traffic and parking management plan would be developed to minimize traffic interference and maintain traffic flow for the segment of the line crossing Needles Highway and paralleling Bruce Woodbury Drive.

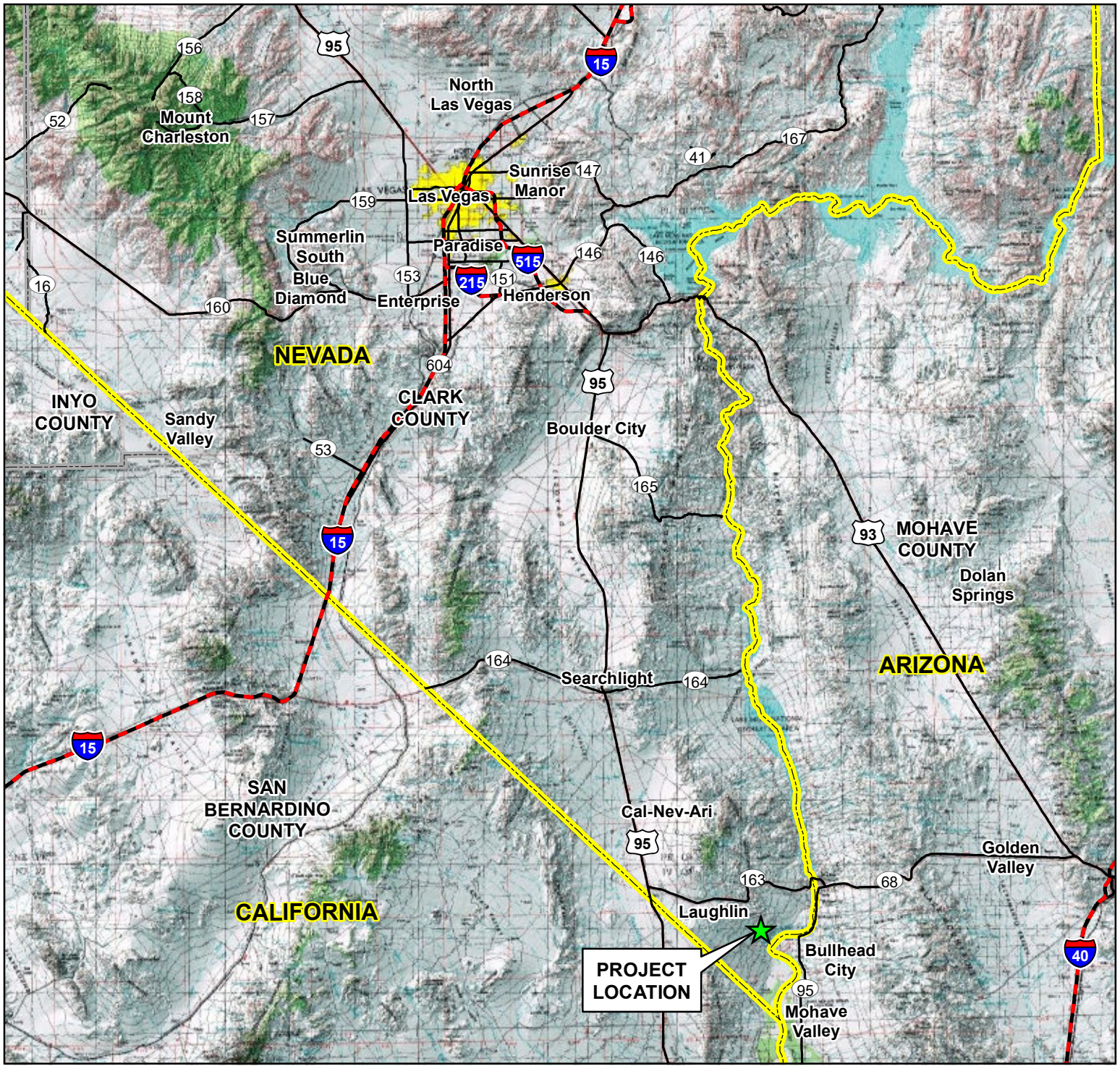
Applicant-Proposed Mitigation and Best Management Practices (BMPs) ARIDA-MOHAVE TRANSMISSION PROJECT
Unnecessary idling of equipment would be limited.
BIOLOGICAL RESOURCES
Prior to construction, a Weed Management Plan will be developed that includes measures designed to reduce the propagation and spread of designated noxious weeds, undesirable plants, and invasive plant species, or as determined by the agencies (BLM, Reclamation, etc.).
The Applicant will implement controls at ROW entry locations to facilitate weed management and invasive species control in order to minimize infestation to the project site from an outside source.
To minimize activities that attract prey and predators during construction and operations, garbage will be placed in approved containers with lids and removed promptly when full to avoid creating attractive nuisances for wildlife.
All work area boundaries will be conspicuously staked, flagged, or otherwise marked to minimize surface disturbance activities. All workers, equipment, vehicles, and construction materials shall remain within the ROW, existing roads, and designated areas. Staging areas would be located in previously disturbed areas whenever possible.
All transmission towers and poles will be designed to be avian-safe in accordance with the *Suggested Practices for Avian Protection on Power Lines: the State of the Art in 2006* (Avian Power Line Interaction Committee [APLIC] 2006) and the Avian Power Line Interaction Committee (APLIC 2006) and *Reducing Avian Collisions with Power Lines* by the U.S. Fish and Wildlife Service and the APLIC (APLIC 2012).
A Decommissioning Plan would be finalized and provided to the BLM at least six months prior to commencement of site closure activities.
Revegetation of areas disturbed by construction activities would be done in accordance with the Site Reclamation Plan. And seed mixes will be composed of native plant species.
Worker environmental awareness training will be required for all maintenance and operation staff for the duration of the project. In addition to an overview of minimization measures for all biological resources, the training will include specific best management practices designed to reduce effects to the desert tortoise.
Biological monitors or biologists approved to handle and relocate tortoises will be present to relocate all tortoises in harm's way to outside the permitted ROW on federal land.
The Applicant will implement the Raven Management Plan (BLM 2014) developed by the BLM for portions of the Proposed Project on BLM-administered lands. The Applicant will inspect transmission structures annually for nesting ravens and other predatory birds and report observations of nests to the BLM and the Service.
No overnight hazards to desert tortoises (e.g., auger holes, trenches, pits, or other steep-sided depressions) will be left unfenced or uncovered. Such hazards will be eliminated each day prior to the work crew and monitoring biologists leaving the site. All excavations will be inspected for trapped desert tortoises at the beginning, middle, and end of the workday, at a minimum, but will also be continuously monitored by a biological monitor or authorized biologist.
CULTURAL RESOURCES
Archaeological monitors will be employed during construction in the vicinity of significant cultural resource sites as needed to ensure that cultural resources are not directly affected by the project.
Fencing or other protective barriers will be placed to protect historic properties during construction as needed.
Should any unrecorded and unanticipated cultural resources be discovered during construction, all activities within the immediate area of discovery shall cease. Any unanticipated discoveries of cultural resources or changes to the Project APE would be managed in accordance with an *Unanticipated Discoveries Plan* that would be developed in consultation with the BLM and SHPO. If avoidance is not possible, the Applicant would minimize and mitigate any damages to any unanticipated discoveries before construction would be allowed resume in the immediate vicinity of the find/discovery.

Applicant-Proposed Mitigation and Best Management Practices (BMPs) ARIDA-MOHAVE TRANSMISSION PROJECT
TRANSPORTATION
A Traffic Management Plan would be finalized and approved by the BLM that identifies BMPs to minimize construction-related traffic impacts.
Deliveries of materials would be scheduled for off-peak hours, when practical, to reduce effects during periods of peak traffic.
Truck traffic would be phased throughout construction, as much as practical.
PUBLIC HEALTH AND SAFETY
The Project would be designed in accordance with all applicable federal and industrial standards including the American Society of Mechanical Engineers (ASME), National Electrical Safety Code (NESC), International Energy Conservation Code (IECC), International Building Code (IBC), the National Fire Protection Association (NFPA) standards, and Occupational Safety and Health Administration (OSHA) regulations.
All employees and contractors would be required to adhere to appropriate health and safety plans and emergency response plans. All contractors would be required to maintain and carry health and safety materials including the MSDS of hazardous materials used on site.
An Emergency Response Plan would be developed and implemented based on the results of a comprehensive Project hazard analysis.
A Hazardous Waste Management Plan would describe the storage, transportation, and handling of wastes and emphasize the recycling of construction wastes where possible.
The Project would coordinate with the holders of all existing ROWs that would be crossed or paralleled by the Project ROWs (transmission lines and access roads) to minimize encroachment conflicts and possible effects to existing transmission lines and pipelines.

Appendix C – Legal Description

LEGAL DESCRIPTION		
Route	**Township / Range**	**Sections**
Proposed Route	T32S R65E	25,26, 35
	T32S R66E	14, 15, 16, 17, 19, 20, 23, 30
Route Variation A	T32S R65E	25,26, 35
	T32S R66E	9, 10, 14, 15, 16, 17, 19, 20, 23, 30
Route Variation B	T32S R65E	25, 26, 35
	T32S R66E	16, 17, 19, 20, 21, 22, 23, 30

Appendix D – Figures



ARIDA-MOHAVE TRANSMISSION LINE

FIGURE 1-1
PROJECT LOCATION

LEGEND

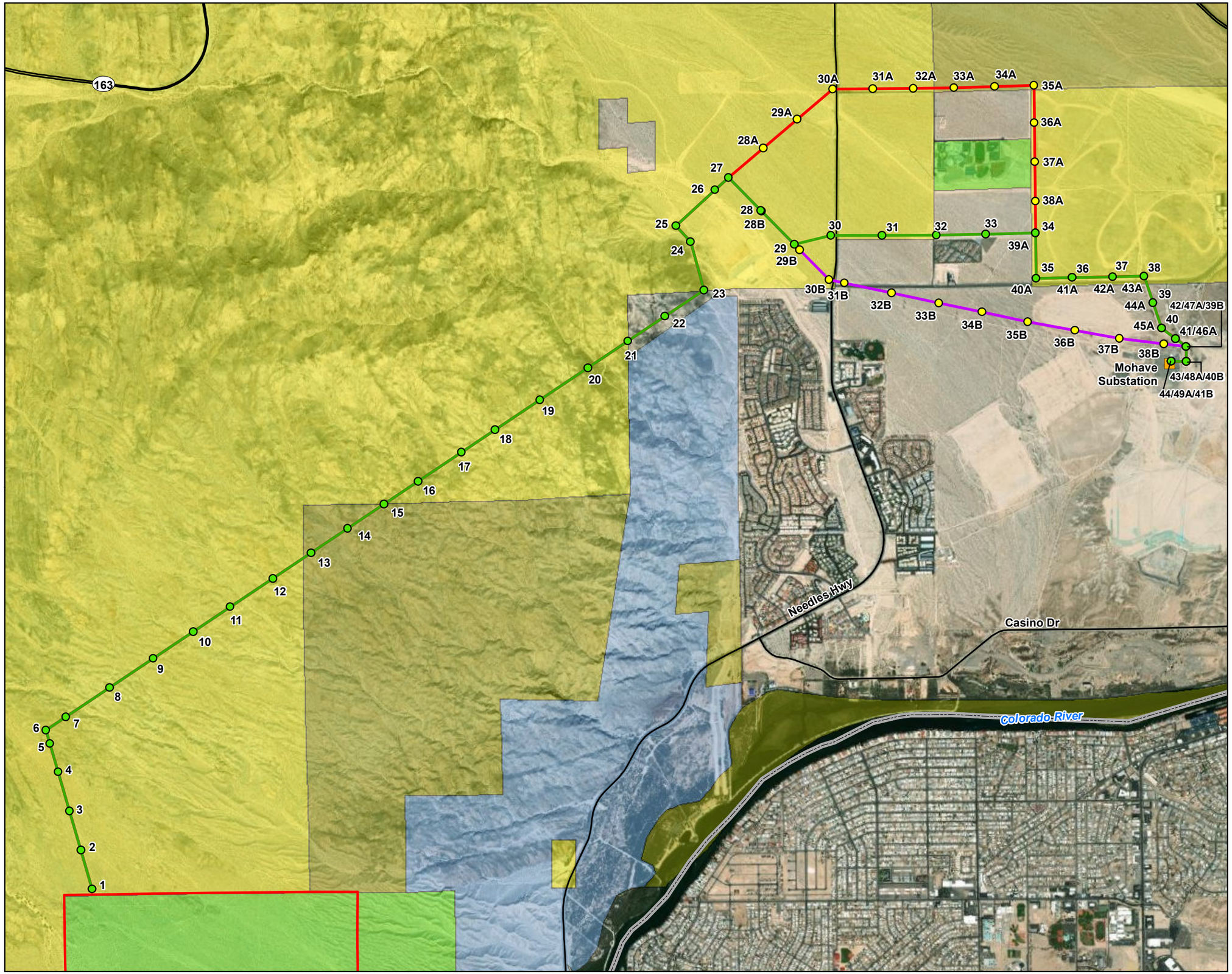
- Interstate
- US Route or State Highway
- State Boundary
- County Boundary

0 5 10 15 20
Miles

Data Sources: ADOT, BLM, CalTrans, ESRI, NDOT, USDA.
F:\\Arida\MXDs\Figure 1-1 Arida-Mohave Transmission Line 061020.mxd 6/10/2020 SJW

ARIDA-MOHAVE TRANSMISSION LINE

FIGURE 2-1
PROJECT OVERVIEW



LEGEND

- Existing Substation
- Major Road
- County Boundary

Proposed Project

- Proposed Project Structure
- Route Option Structure
- Proposed Project Route
- Route Option A
- Route Option B
- Arida Proposed Project Site

Jurisdictional Land Ownership

- Bureau of Land Management Land
- Bureau of Reclamation Land
- State Land
- County Land
- Private Land (No Shading)

0 0.25 0.5 0.75 1
Miles

Data Sources: BLM, Clark Co., ESRI, NDOT, USDA.
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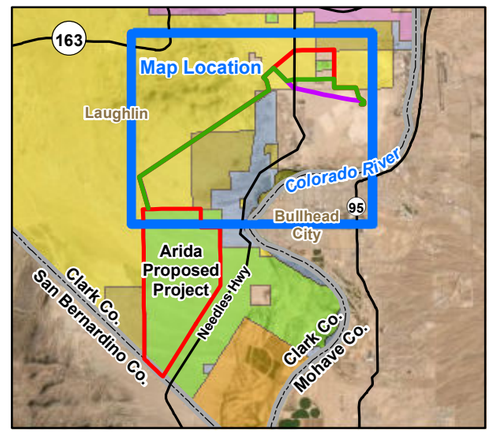


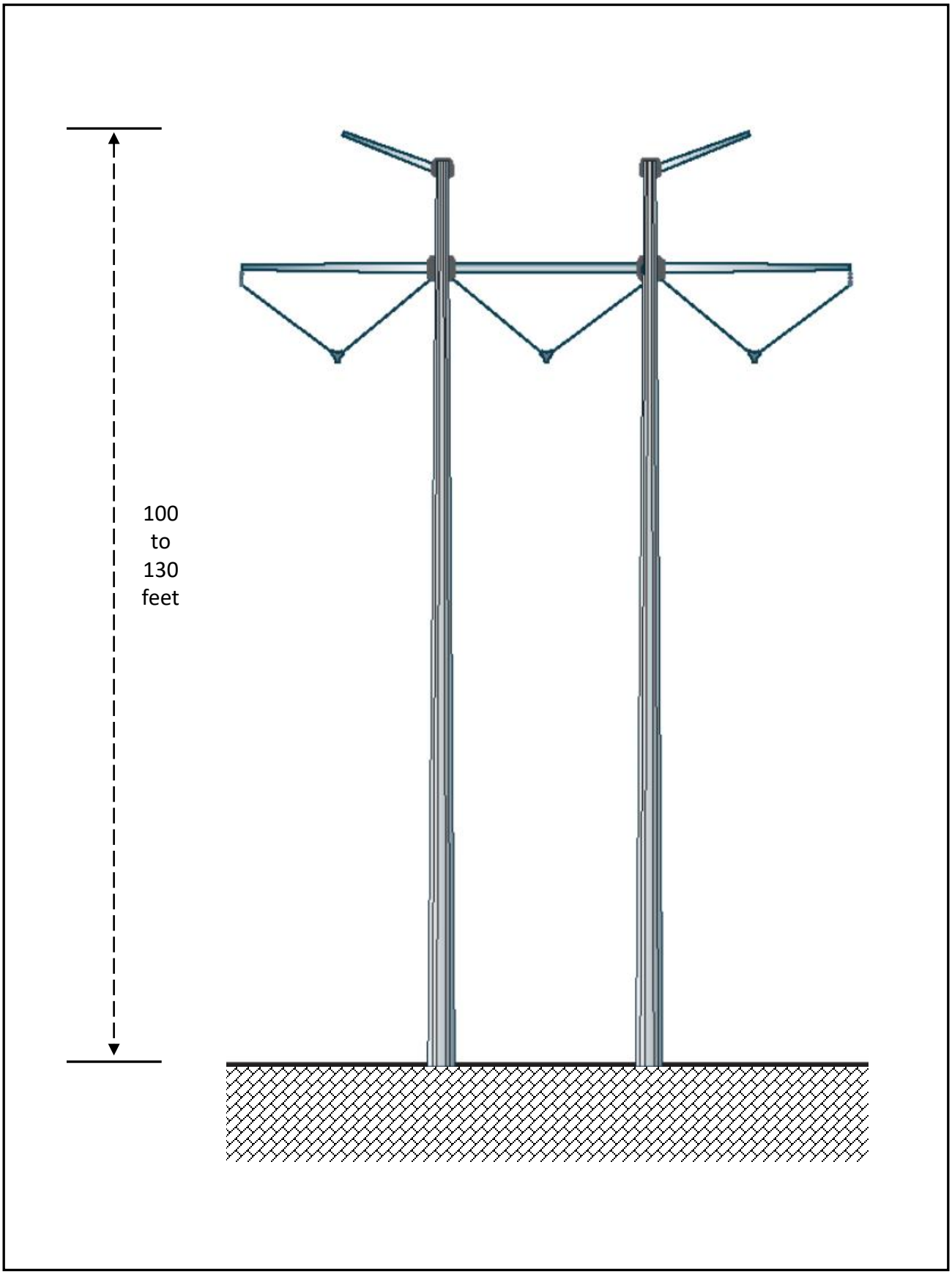


Figure 2-2
Typical 500kV H-Frame Structure

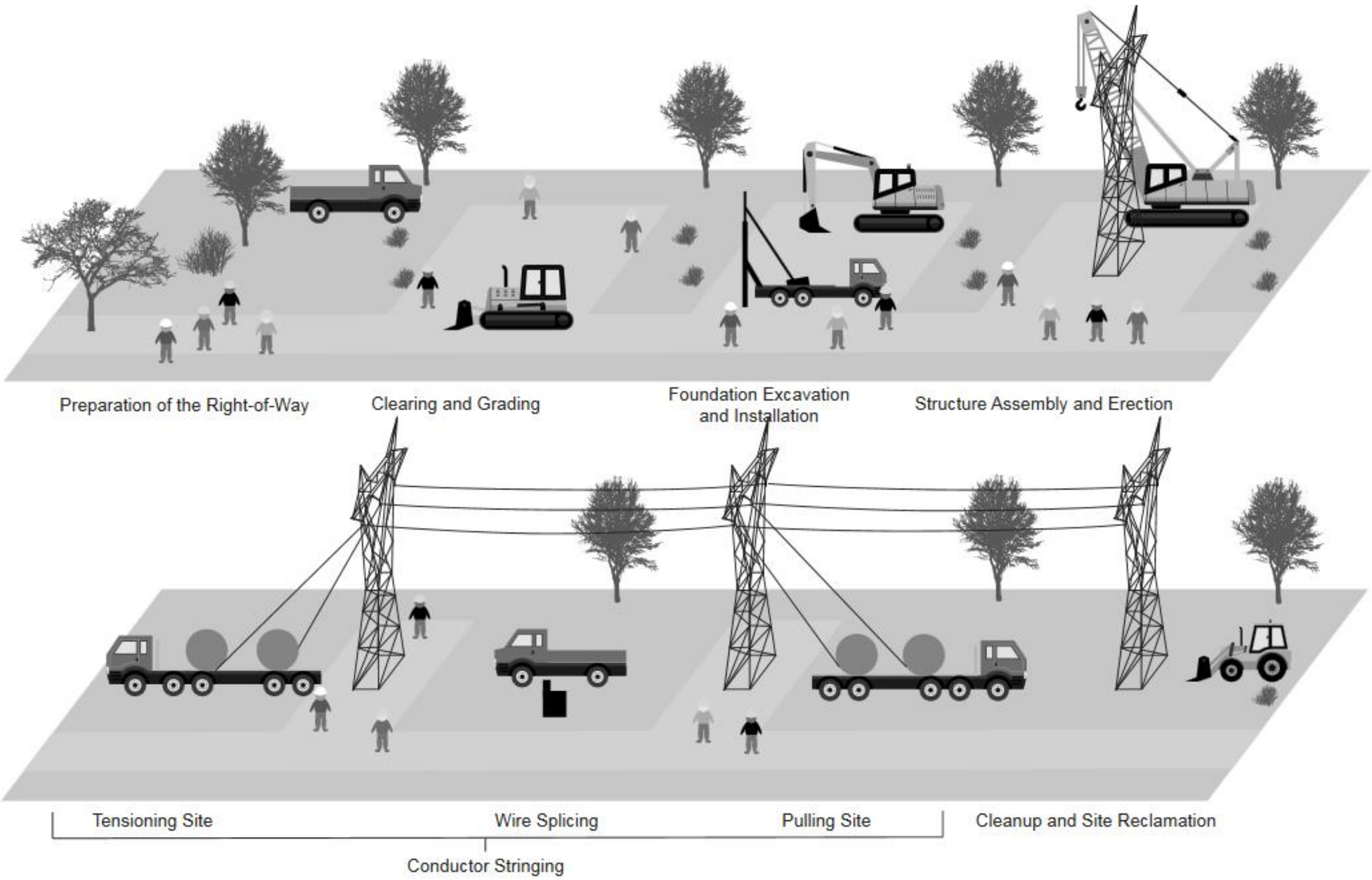
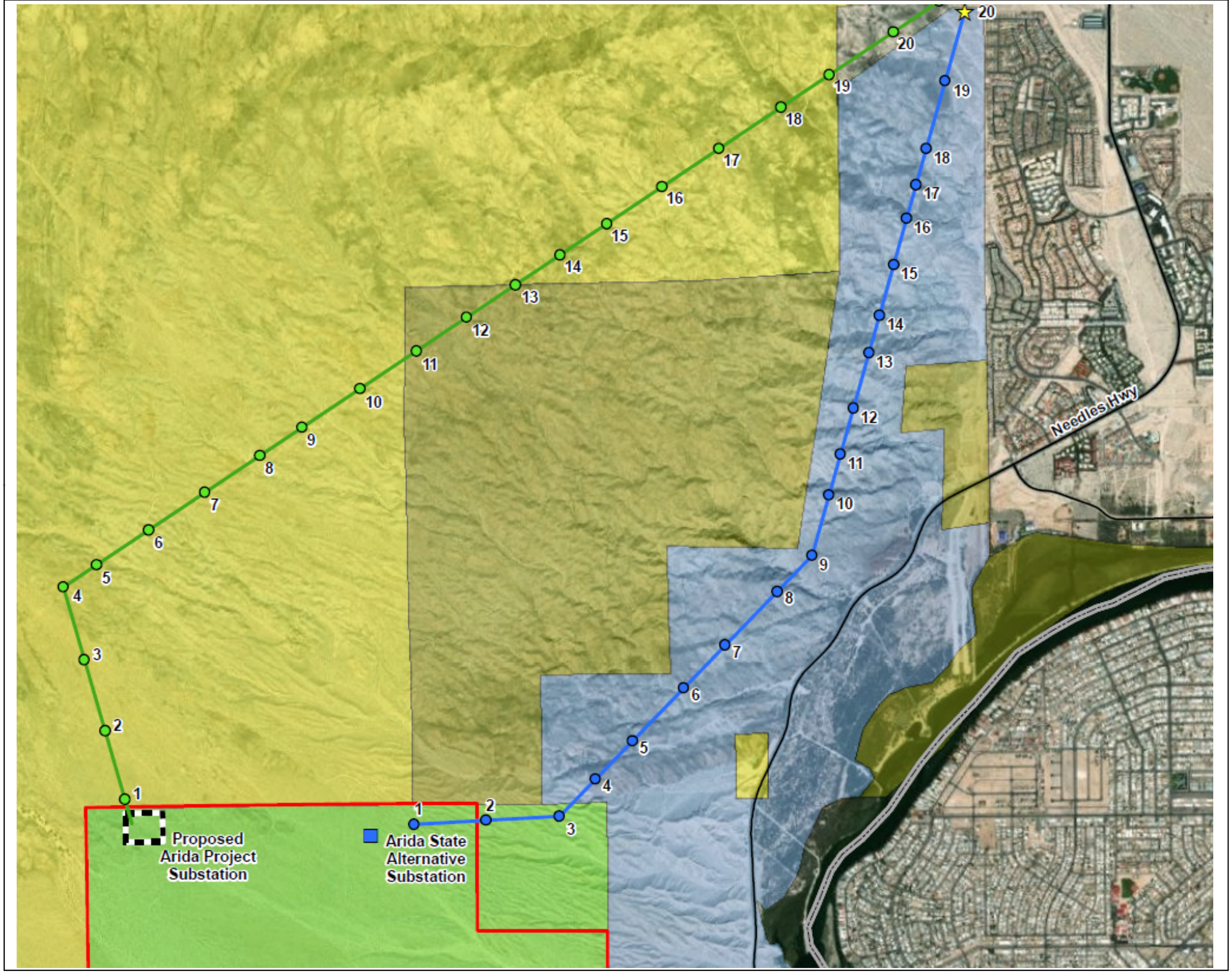


Figure 2-4
Typical Transmission Line Construction Sequence

ARIDA-MOHAVE TRANSMISSION LINE PROJECT

Figure 2-5

NON-FEDERAL ROUTE OPTION



LEGEND

- Existing Substation
- Major Road
- County Boundary

Proposed Project

- Proposed Project Structure
- Alternative Route Structure
- State Alternative Route Structure
- Proposed Project, Alternative Route, and State Alternative Route POCO Structure
- Arida State Alternative Route Substation
- Proposed Project Route
- Alternative Route
- State Alternative Route
- Proposed Arida Project Substation
- Arida Proposed Project Site

Jurisdictional Land Ownership

- Bureau of Land Management Land
- Bureau of Reclamation Land
- State Land
- County Land
- Private Land (No Shading)

0 0.25 0.5 0.75 1

Miles

Data Sources: Clark Co., BLM, ESRI, NDOT, USDA.
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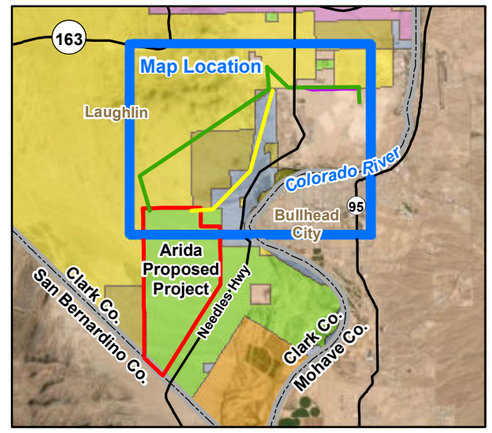
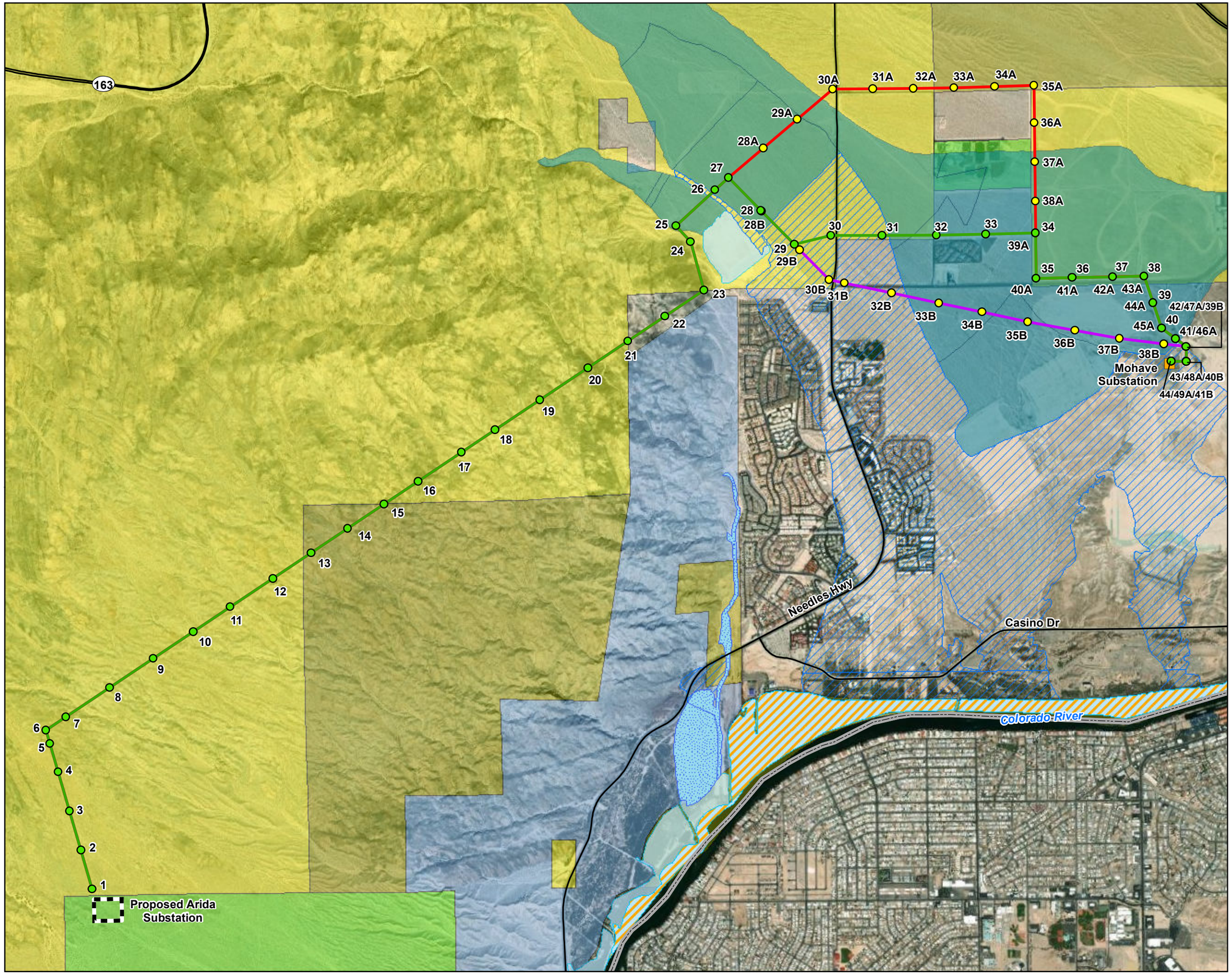


A-M TRANSMISSION PROJECT

FIGURE 3-1
FEMA FLOODPLAINS



LEGEND

- Existing Substation
- Major Road
- County Boundary

Proposed Project

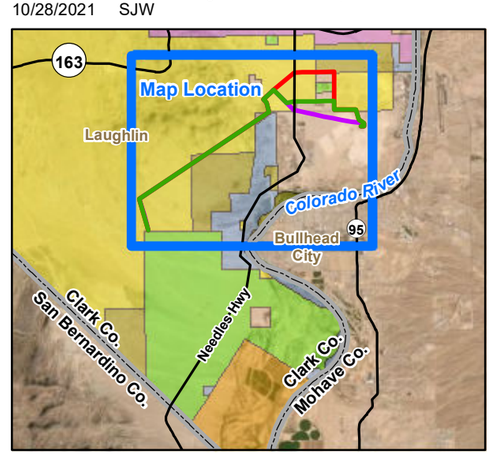
- Proposed Project Structure
- Route Option Structure
- Proposed Project Route
- Route Option A
- Route Option B
- Proposed Arida Substation

FEMA Floodplain

- 100-Year Floodplain
- 500-Year Floodplain
- Colorado River Floodway
- Zone AE
- Zone AO
- Area of Minimal Flood Hazard (No Shading)

0 0.25 0.5 0.75 1
Miles

Data Sources: Clark Co., BLM, ESRI, FEMA, NDOT, USDA.
F:\Projects\Arida\MXDs\Fig 3-1 FEMA Floodplains 102821.mxd
10/28/2021 SJW



A-M TRANSMISSION PROJECT

FIGURE 3-2
RECREATION

LEGEND

- Existing Substation
- Major Road
- County Boundary

Proposed Project

- Proposed Project Structure
- Route Option Structure
- Proposed Project Route
- Route Option A
- Route Option B
- Proposed Arida Substation

Recreation

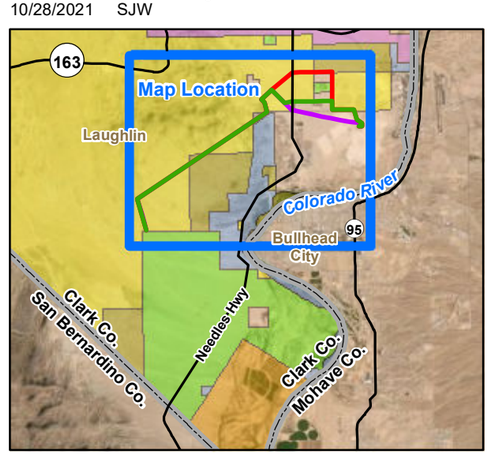
- Boat Launch
- Existing Park
- Laughlin Special Recreation Management Area (SRMA)
- State Recreational Area

Jurisdictional Land Ownership

- Bureau of Land Management Land
- Bureau of Reclamation Land
- State Land
- County Land
- Private Land (No Shading)

0 0.25 0.5 0.75 1
Miles

Data Sources: Clark Co., BLM, ESRI, NDOT, USDA.
F:\Projects\Arida\MXDs\Fig 3-2 Recreation 102821.mxd
10/28/2021 SJW



A-M TRANSMISSION PROJECT

FIGURE 3-3
DESIGNATED UTILITY CORRIDOR

LEGEND

- Existing Substation
- Major Road
- County Boundary

Proposed Project

- Proposed Project Structure
- Route Option Structure
- Proposed Project Route
- Route Option A
- Route Option B
- Proposed Arida Substation

Utility Corridor

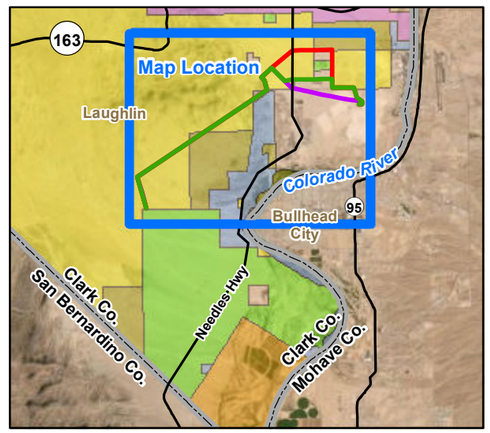
- Utility Corridor

Jurisdictional Land Ownership

- Bureau of Land Management Land
- Bureau of Reclamation Land
- State Land
- County Land
- Private Land (No Shading)

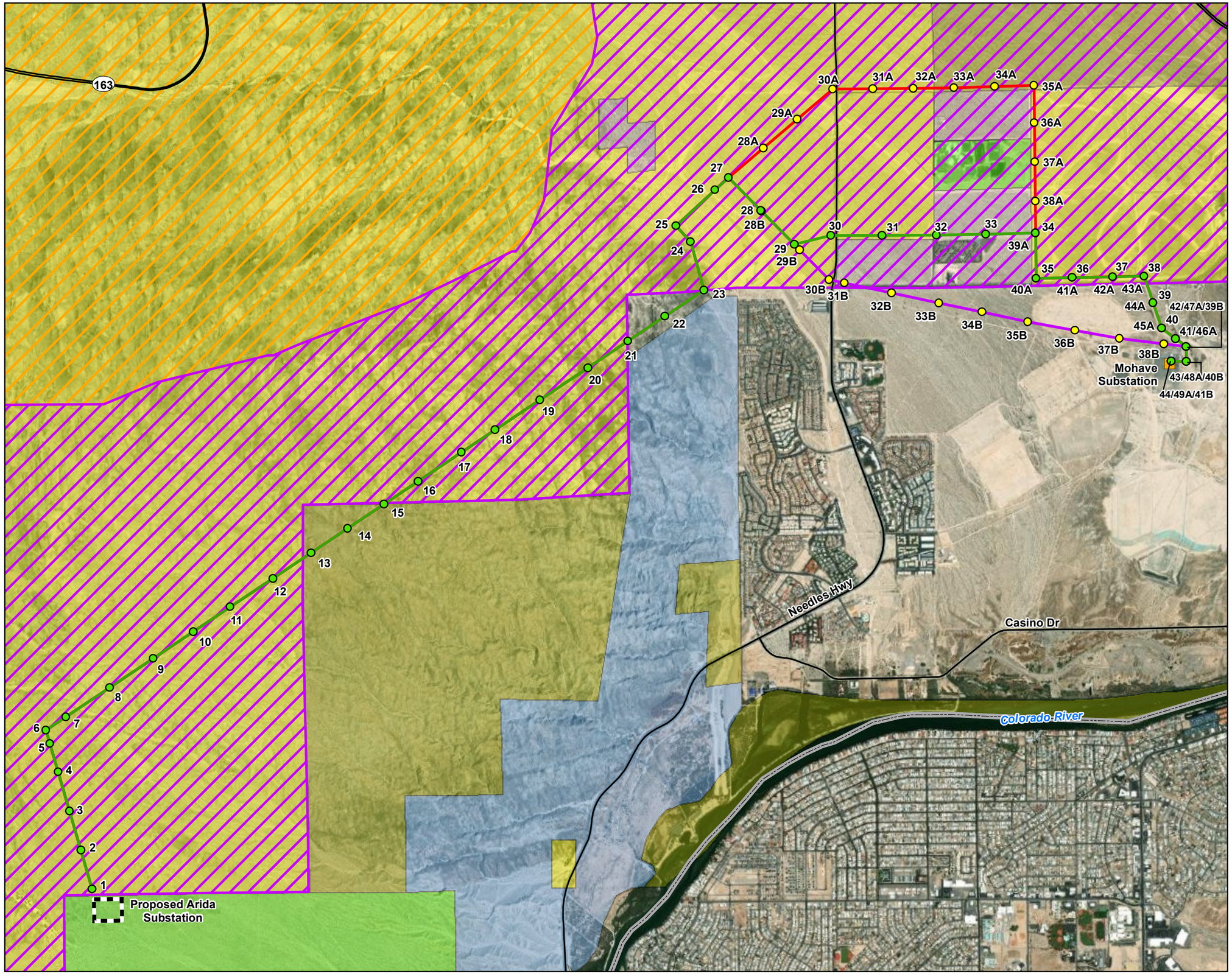
0 0.25 0.5 0.75 1
Miles

Data Sources: Clark Co., BLM, ESRI, NDOT, USDA.
F:\Projects\Arida\MXDs\Fig 3-3 Designated Utility Corridors 102821.mxd 10/28/2021 SJW



A-M TRANSMISSION PROJECT

FIGURE 3-4
VISUAL RESOURCE MANAGEMENT



LEGEND

- Existing Substation
- Major Road
- County Boundary

Proposed Project

- Proposed Project Structure
- Route Option Structure
- Proposed Project Route
- Route Option A
- Route Option B
- Proposed Arida Substation

Visual Resource Management Class

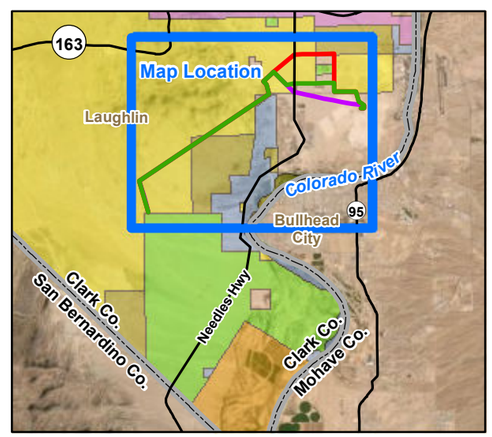
- Class II
- Class III

Jurisdictional Land Ownership

- Bureau of Land Management Land
- Bureau of Reclamation Land
- State Land
- County Land
- Private Land (No Shading)

0 0.25 0.5 0.75 1
Miles

Data Sources: Clark Co., BLM, ESRI, NDOT, USDA.
F:\Projects\Arida\MXDs\Fig 3-5 Visual Resource Management 020822.mxd 2/14/2022 SJW



Appendix E – Restoration Plan

Arida-Mohave Transmission Line Project

Site Restoration Plan

June 2022

Table of Contents

Tables

Figures

Attachments

Acronyms and Abbreviations

BLM	Bureau of Land Management
BMP	Best Management Practice
GIS	Geographic Information System
kV	Kilovolt
NRS	Nevada Revised Statutes
Project	Arida-Mohave Transmission Line Project
Reclamation	Bureau of Reclamation
ROW	Right-of-Way

1.0 Introduction

326FW 8me, LLC (Applicant), a subsidiary of 8minute Solar Energy, has proposed the Arida-Mohave Transmission Line Project (Project), located southwest of Laughlin, Nevada, in southern Clark County (**Figure 1**). The Project would be an approximately 8.8-mile-long 500-kilovolt (kV) transmission line between the proposed Arida Substation and the existing Mohave Substation near Laughlin, Nevada. The Project's proponent has applied for a right-of-way (ROW) for the approximately 7.2 miles of the line that would cross federal lands. About 6.7 miles of the Project would cross lands managed by the Bureau of Land Management (BLM) and about 0.5 miles would cross lands managed by the Bureau of Reclamation (Reclamation). The proposed permanent and temporary ROWs for the transmission line would be 200 feet wide. **Figure 1** shows the general location and **Figure 2** shows details of the Project facilities.

1.1 Purpose

The purpose of this Site Restoration Plan is to describe the Project, considerations related to restoration and revegetation, and the various factors and methods to be applied toward restoring the site as close to pre-Project conditions as practicable.

1.2 Goals and Objectives

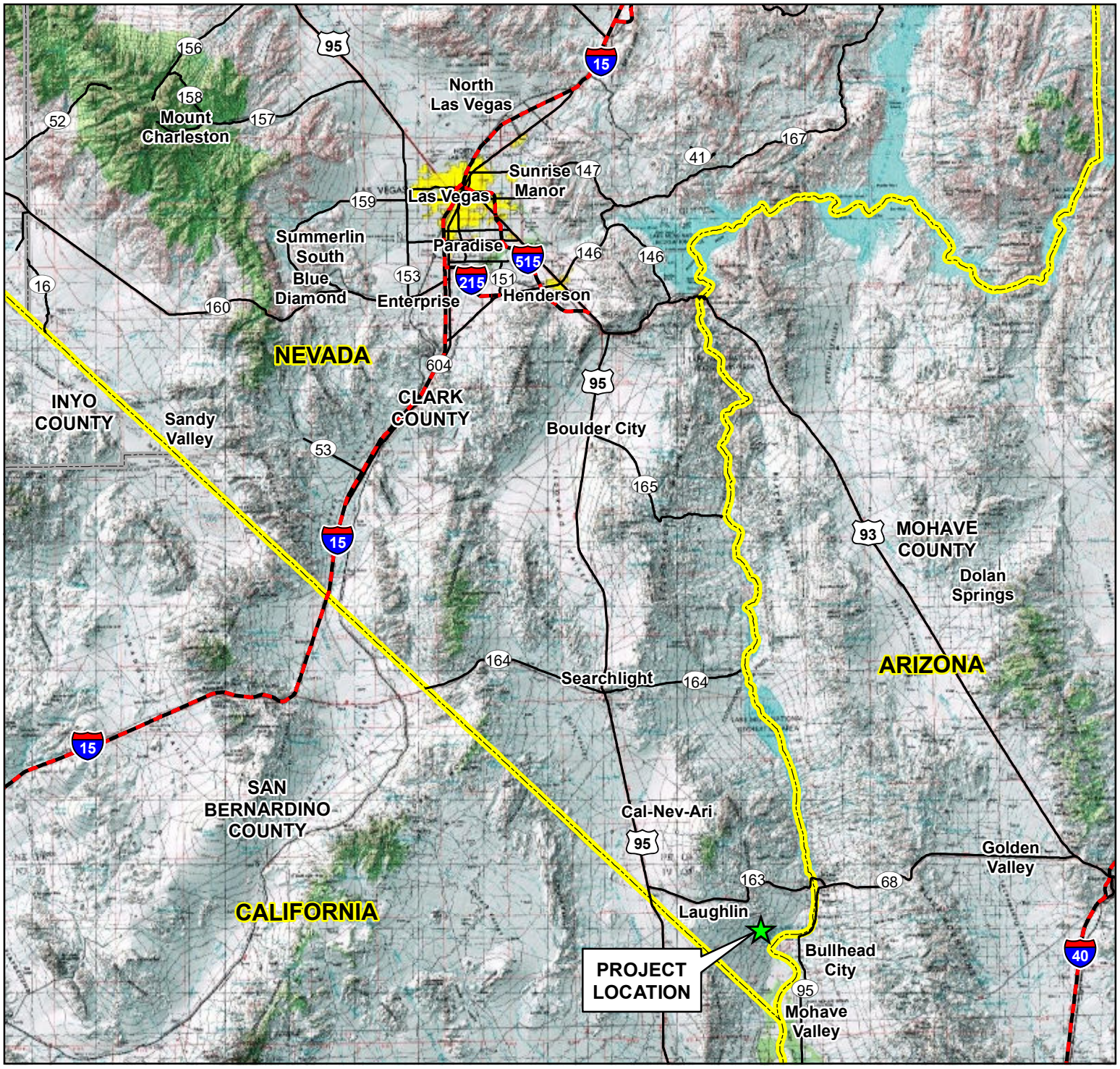
The goal of this Site Restoration Plan and its successful implementation is to mitigate the potential impacts associated with the Project and to facilitate managed and natural restoration of the site and impacted areas toward achieving pre-Project or similar conditions.

The objectives of this plan include:

- Minimize initial disturbance to habitats within the Project area;
- Preserve site-specific materials for use in the restoration/revegetation phase, including topsoil, plants, and seeds, where practicable;
- Use native, agency-approved plant species to revegetate disturbed areas;
- Implement revegetation practices in a timely manner, thereby reducing secondary effects including soil erosion and establishment of noxious plant species; and
- Return the Project site to conditions similar to those that existed prior to initiation of the Project by restoring soils, topography, plant species, and their densities and distribution, to meet the restoration standards outlined in this document.

1.3 Project Area

The Project area is located within the Mojave Basin and Range Level III Ecoregion and the Arid Valleys and Canyonlands Level IV Ecoregion (Bryce et al. 2003). The Arid Valleys and Canyonlands ecoregion includes steep canyons and bench lands below 2,000 feet elevation, as well as floodplains near the Colorado River. This is one of the hottest and driest ecoregions in Nevada, receiving only two to seven inches of rainfall per year. Rocky colluvial soils cover eroded slopes; deeper soils occur on benches and alluvial fans. Vegetation is a sparse, but diverse, shrub cover that includes creosote bush (*Larrea tridentata*), white brittlebush (*Encelia farinosa*), white bursage (*Ambrosia dumosa*), mesquite (*Prosopis* sp.), palo verde (*Parkinsonia* sp.), and occasional Sonoran desert elements, such as ocotillo (*Fouquieria splendens*). Along the Colorado River, non-native salt cedar (*Tamarix ramosissima*) is replacing native riparian vegetation, such as Fremont cottonwood (*Populus fremontii*) and willow (*Salix* sp.) (Bryce et al. 2003).



ARIDA-MOHAVE TRANSMISSION LINE

FIGURE 1
PROJECT LOCATION

LEGEND

- Interstate
- US Route or State Highway
- State Boundary
- County Boundary

0 5 10 15 20
Miles

Data Sources: ADOT, BLM, CalTrans, ESRI, NDOT, USDA.
F:\\Arida\MXDs\Figure 1-1 Arida-Mohave Transmission Line 061020.mxd 6/10/2020 SJW

ARIDA-MOHAVE TRANSMISSION LINE

FIGURE 2
PROJECT OVERVIEW

LEGEND

- Existing Substation
- Major Road
- County Boundary

Proposed Project

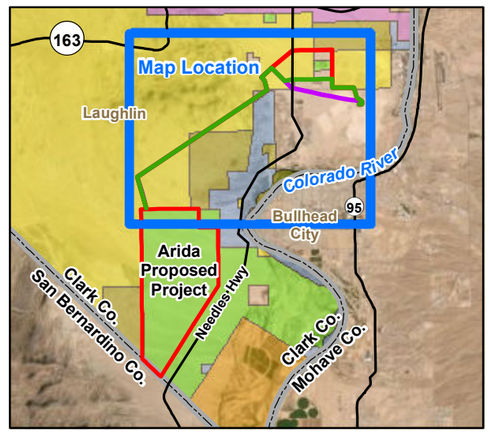
- Proposed Project Structure
- Route Option Structure
- Proposed Project Route
- Route Option A
- Route Option B
- Arida Proposed Project Site

Jurisdictional Land Ownership

- Bureau of Land Management Land
- Bureau of Reclamation Land
- State Land
- County Land
- Private Land (No Shading)

0 0.25 0.5 0.75 1
Miles

Data Sources: BLM, Clark Co., ESRI, NDOT, USDA.
F:\Projects\Arida\MXDs\Fig 2-1 Project Overview 102821.mxd
10/28/2021 SJW



1.4 Project Description

The Project is an approximately 8.8-mile-long 500-kV transmission line between the new Arida Substation and the existing Mohave Substation near Laughlin, Nevada. A portion of the proposed line would cross federal land administered by two Department of Interior agencies, the Bureau of Land Management (BLM) and the Bureau of Reclamation (Reclamation). It would be constructed as a single-circuit 500 kilovolt (kV) line or a double-circuit 500kV line.

For about 4.0 miles of its total length, the Project would parallel the route of the existing Lugo-Mohave 500kV line. The approximately 7.2 miles of federal lands crossed by the line would include approximately 6.7 miles of BLM-managed federal lands and 0.5 miles administered by Reclamation. **Figure 1** shows the general location and **Figure 2** shows the proposed alignment of the Project.

1.5 Type of Use

Table 1 lists the anticipated temporal and spatial impacts of the Project by type of use and Project facility.

Table 1 Impacts by Type of Use

Use Type	Laydown Areas and Stringing Sites (acres)	Staging and Equipment Parking Areas (acres)	Transmission Line Access Roads (acres)	Transmission Line Structure Locations (acres)	Project Total (acres)
Temporal					
Temporary	37.88[1,2]	0	0	20.52	58.40
Long-Term	0	0	6.98	3.28	10.26
Total	37.88	0	6.98	23.80	68.66
Spatial					
Linear-Short (< 5 miles)	0	0	6.98	0	6.98
Linear-Long (> 5 miles)	0	0	0	0	0
Small Area (< 1 acre)	25.88	0		23.80	49.68
Large Area (> 1 acre)	12.00[1,2]	0	0	0	12.00
Very Large Area (> 20 acres)	0	0	0	0	0
Total	37.88	0	6.98	23.80	68.66

* All acreages are approximate and subject to change until as-built drawings are provided
[1] Includes possible location of southern laydown area
[2] Includes two possible laydown areas

1.6 Disturbance Levels

Permanent and temporary Project impacts by disturbance level are shown in **Table 2** and **Table 3**, respectively. Disturbance levels are defined as follows.

D-0. Mowing. Mowing is a new technique being utilized to conserve vegetative resources within a large project area. Vegetation is mowed to a height of no less than 18 inches during construction. Depending on site objectives, vegetation can be allowed to reach a normal height or kept trimmed to a height between 18 inches and the plant's full height potential. Crushing of vegetation will be minimal and this disturbance level is designed to have a minimal impact on existing vegetation. Cacti and yucca can be left in place in this disturbance level - yucca may be cut or ground down to 18 inches and allowed to resprout. Cacti taller than 18 inches (primarily Cylindropuntia spp.), may be cut at 18 inches, with the cut portion left on the ground. This method is least likely to result in invasions of non-native plant species.

D-1. Overland Drive and Crush. Disturbance caused by accessing a site without significantly modifying the landscape. Vegetation is crushed but not cropped. Soil is compacted, but no surface soil is removed. Examples include utility line tensioning and pulling areas, tower pad sites, overland access to fiber optic meter sites, and spur roads to towers. Even though vegetation may be damaged and even destroyed, the surface soil and seed bank remains in place. Some crushed vegetation will likely sprout after disturbance ceases. These activities would result in minimal to moderate disturbance. This type of disturbance will result in the fastest recovery time for vegetation and is preferred by the BLM (second only to mowing). Soil seed banks remain largely in place, perennial vegetation can grow back, and minimal external efforts are necessary. This method is less likely to result in invasions of non-native plant species. This would involve crushing or mowing vegetation to less than 16 inches in height.

D-2. Clear and Cut. Disturbance caused by accessing the project site, but having to brush off all vegetation in order to improve or provide suitable access for other equipment. All vegetation is removed, soils are compacted, but no surface soil is removed. Examples include temporary access roads where the road is improved for access and could include some examples from D-1 above. Clear and cut activities would result in moderate disturbance. This type of disturbance will result in moderate recovery times for vegetation. This method has a moderate risk for invasion of non-native plant species. An example is imprinting to crush vegetation down into the soil.

D-3. Clear and Cut with Soil Removal. Disturbance is caused by removing all vegetation in the impact zone, the soils are compacted and the surface soil is displaced, and for project requiring underground installation, the subsurface soils are displaced as well. These activities result in heavy disturbance. Examples include pipelines, buried fiber optic lines, access roads that require grading and filling. This type of disturbance results in an extensive recovery time for vegetation, and is most likely to lead to invasions of non-native plant species, which can result in lengthy and expensive control efforts. Includes disc-and- roll construction, and other traditional construction methods where no vegetation is left.

Table 2 Permanent Impacts by Disturbance Level

Disturbance Level	Laydown Areas and Stringing Sites (acres)	Staging and Equipment Parking Areas (acres)	Transmission Line Access Roads (acres)	Transmission Line Structure Locations (acres)	Project Total (acres)
D0	0	0	0	0	0
D1	0	0	0	0	0
D2	0	0	0	0	0
D3	0	0	6.98	3.28	10.26
Total	0	0	6.98	3.28	10.26

* All acreages are approximate and subject to change until as-built drawings are provided

Table 3 Temporary Impacts by Disturbance Level

Disturbance Level	Laydown Areas and Stringing Sites (acres)	Staging and Equipment Parking Areas (acres)	Transmission Line Access Roads (acres)	Transmission Line Structure Locations (acres)	Project Total (acres)
D0	0	0	0	0	0
D1	25.88	0	0	0	25.88
D2	12.00	0	0	20.52	32.52
D3	0	0	0	0	0
Total	37.88	0	0	20.52	58.40

* All acreages are approximate and subject to change until as-built drawings are provided

1.7 Restoration Levels

Permanent and temporary Project impacts by restoration level are shown in **Table 4** and **Table 5**, respectively. The entire Project area is located within an R4 restoration level area, which is defined as follows.

> **R4. Multiple Use Areas**. Multiple use areas are lands on which human activities are not precluded. Nonetheless, they support significant areas of undisturbed natural vegetation and provide important connectivity with more intensively managed areas. Additionally, at least six of BLM's most sensitive plant species occur in these multiple use areas, and their habitat will require a higher level of restoration.

Table 4 Permanent Impacts by Restoration Level

Restoration Level	Laydown Areas and Stringing Sites (acres)	Staging and Equipment Parking Areas (acres)	Transmission Line Access Roads (acres)	Transmission Line Structure Locations (acres)	Project Total (acres)
R1	0	0	0	0	0

Table 4 Permanent Impacts by Restoration Level

Restoration Level	Laydown Areas and Stringing Sites (acres)	Staging and Equipment Parking Areas (acres)	Transmission Line Access Roads (acres)	Transmission Line Structure Locations (acres)	Project Total (acres)
R2	0	0	0	0	0
R3	0	0	0	0	0
R4	0	0	6.98	3.28	10.26
Total	0	0	6.98	3.28	10.26

* All acreages are approximate and subject to change until as-built drawings are provided

Table 5 Temporary Impacts by Restoration Level

Restoration Level	Laydown Areas and Pull Sites (acres)	Staging and Equipment Parking Areas (acres)	Transmission Line Access Roads (acres)	Transmission Line Structure Locations (acres)	Project Total (acres)
R1	0	0	0	0	0
R2	0	0	0	0	0
R3	0	0	0	0	0
R4	37.88	0	0	20.52	58.40
Total	37.88	0	0	20.52	58.40

* All acreages are approximate and subject to change until as-built drawings are provided

2.0 Baseline Data

The following sections contain baseline information on soils, vegetation, special status plant species, and noxious and invasive weeds in the Project area.

2.1 Soils

The geology of the survey area is relatively homogenous. The north and south ends are located on Quaternary alluvium (alluvial fan deposits) derived from the Newberry Mountains to the west and transported by extensive wash systems. The central section covers the eastern foothills of the Newberry Mountains, where the rock units are primarily late Cretaceous to middle Miocene intrusive igneous rocks (aphanitic, porphyritic, and coarsely granular rocks ranging in composition from diorite to granite). Small inclusions of Proterozoic granite and metamorphic rocks (gneisses and schists) are also found in this section (U. S. Geological Survey 2016). Typical of soils in arid environments, soils in the Project area are poorly developed, shallow, and almost completely absent in some areas. In general, the local soils are typically only four inches deep and rarely more than 18 inches in depth over bedrock or an underlying caliche layer.

2.2 Vegetation

The entire Project area fits best within the *Larrea tridentata – Ambrosia dumosa* (creosote-bursage) Shrubland Alliance under the vegetation classification system of the Nevada Natural Heritage Program (Peterson 2008). While the observed vegetation (Heritage 2021) fits within this broad alliance, there is substantial variation across the Project area, which was divided into five sections based on both geomorphology and vegetation, as described in the following sections.

2.2.1 Creosote-Bursage, South Bajada

The south bajada section is located between proposed Structures 1 and 5 (**Figure 2**) on the upper part of a large bajada developed by washes that drain the southern Newberry Mountains. Vegetation is primarily creosote-bursage, with disturbed areas adjacent to existing roads, and Mojave xero-riparian species (primarily catclaw [*Senegalia greggii*] and smoke tree [*Psorothamnus spinosus*]) in the larger washes. Sahara mustard (*Brassica tourneforti*), red brome (*Bromus madritensis* ssp. *rubens*), and Mediterranean grass (*Schismus arabicus*) are present, but not dominant, except is small patches in disturbed areas adjacent to roads.

2.2.2 Creosote-Bursage, Hilly

The hill section is located in the eastern foothills of the Newberry Mountains between Structures 5 and 14 (**Figure 2**) and consists of moderately sloped, rolling terrain interspersed with small washes that generally drain limited areas. A few larger washes originate in the higher terrain of the Newberry Mountains. Vegetation is a mosaic of creosote-bursage, with brittlebush and cacti sub-dominant in some areas and limited Mojave xero-riparian species along the washes. Cacti are more common and diverse here and in the steep hill section than in the bajada sections.

2.2.3 Creosote-Bursage, Hilly, Steep

The steep hill section is similar to the hill section, except that the terrain is noticeably steeper and more rugged, with extensive rock outcrops and deeper, narrower washes. This section is located between Structures 14 and 23 (**Figure 2**). Vegetation is similar to the hill section, except that the rock outcrops (especially those that are north-facing) and deeper canyons provide habitats for additional species not found elsewhere, such as pygmy-cedar (*Peucephyllum schottii*) and Parry's lipfern (*Cheilanthes parryi*). Several of the larger washes contain a few salt cedars (*Tamarix ramosissima*).

2.2.4 Creosote-Bursage, Disturbed

The disturbed section is located in part between Structures 23 and 26 (**Figure 2**) within a large wash system and the adjacent bajada to the north. The wash system has been heavily altered by construction of a large stormwater detention dam, adjacent roads, and dispersed recreational use. Similarly, roads and recreational use have altered the adjacent bajada. This area has been disturbed by road and fence construction, as well as old center pivot circles. Vegetation in both parts of this section is creosote-bursage, with a heavy component of non-native species including Sahara mustard, red brome, and Mediterranean grass.

2.2.5 Creosote-Bursage, North Bajada

The north bajada section is located between Structures 26 and 88 (**Figure 2**) north of the disturbed section on a large bajada developed by washes that drain the Newberry Mountains to the west and north of the Project. Vegetation is primarily creosote bush, with less bursage, brittlebush, cacti, or other common

species. Non-native species such as Sahara mustard and Mediterranean grass are common, although not as extensive as in the disturbed section.

2.2.6 Cacti / Yucca

The following cacti were observed in the survey area (ROW plus 100-foot buffer)(Heritage 2021). No *Yucca* sp. were observed. Estimates of density are provided for each species.

- *Cylindropuntia acanthocarpa* var. *coloradensis* (buckhorn cholla)
    - Generally scattered throughout. Moderate density (two to ten individuals per acre) in the hill and steep hill section, low density (less than two individuals per acre) elsewhere.
- *Cylindropuntia bigelovii* (teddy-bear cholla)
    - Patchy distribution with many small groups covering areas of less than an acre at high density (up to 100 individuals per acre) in the hill section. A few similar patches in the steep hill and south bajada sections. Not present in the north bajada or disturbed sections.
- *Cylindropuntia ramosissima* (pencil cholla)
    - Scattered throughout, generally at low density, but reaching moderate density in the hill and south bajada sections.
- *Echinocereus engelmannii* (Engelmann's hedgehog cactus)
    - Occasional individuals or loose groups of a few individuals in the hill and steep hill sections.
- *Ferocactus cylindraceus* (barrel cactus)
    - Present at moderate density in the hill and steep hill sections. Some areas reaching about 20 individuals per acre. Not present in the south bajada, disturbed, or north bajada sections.
- *Mammillaria dioica* (fishhook cactus)
    - Very few individuals in the hill and steep hill sections. Not present in the south bajada, disturbed, or north bajada sections.
- *Mammillaria tetrancistra* (fishhook cactus)
    - Scattered individuals in the hill and steep hill sections. Not present in the south bajada, disturbed, or north bajada sections.
- *Opuntia basilaris* var. *basilaris* (beavertail cactus)
    - Scattered, generally at low density, but reaching moderate density in the hill and south bajada sections. Not present in the disturbed section.

In the State of Nevada cacti and yucca are afforded special protection. According to the Nevada Revised Statute (NRS) 527.100:

> "It is unlawful….to remove or possess any Christmas tree, cactus, yucca or branches thereof, or knowingly transport or sell any Christmas tree, cactus, yucca or its branches from any of the lands owned by or under the jurisdiction of the State of Nevada or its counties, or any reserved or unreserved lands owned by the United States, or from any privately owned lands, without permission from the legal owner, or the legal owner's duly authorized agent, specifying locality by legal land description and number of plants to be removed or possessed."

The BLM manages cacti and yucca as special forest products with commercial value. Cacti or yuccas in areas that are proposed for permanent disturbance would be salvaged (if required by the BLM) and either transplanted at an approved off-site location (if specifically reviewed and approved by BLM), or in areas on-site that are not proposed for disturbance and suitable to supporting these plants. Cacti and yuccas in areas proposed for temporary disturbance will be salvaged and maintained on-site until temporary

disturbance has concluded and restoration efforts have occurred to support replanting these plants in their original habitats. All cactus and yucca salvage and transplanting would be conducted by a qualified salvage contractor. The contractor would be required to use the BLM salvage protocol (**Attachment A**).

2.3 Special Status Plant Species

No individuals or occurrences of the chalk dudleya (*Dudleya pulverulenta* ssp. *arizonica*) or any other special status plants were observed in the survey area (Heritage 2021). Potentially suitable habitats for the chalk dudleya in the form of steep rock outcrops and cliffs composed of intrusive igneous rocks are present in the steep hill section. To the extent it was safe to do so, all such habitat was completely surveyed. Some of the taller rock outcrops and adjacent talus slopes are too steep and unstable to survey safely. These areas were observed from a distance with binoculars. In addition, the bases of the outcrops were accessed and surveyed from the adjacent washes.

2.4 Noxious and Invasive Weeds

No detailed noxious weed surveys have been conducted in the Project area to date; however, an integrated vegetation survey was conducted in October 2020 and provides preliminary information of noxious weeds in the Project area (Heritage 2021).

Two noxious weed species were observed during the field survey Sahara mustard (*Brassica tourneforti*) and salt cedar (*Tamarix ramosissima*). Several other non-native species that are not considered noxious weeds, including stork's bill, Mediterranean grass, and red brome, were observed in the survey area. In general, non-native species were observed in and near disturbed areas such as roads and were not observed or were present at low density in undisturbed, native habitats.

Sahara mustard, a Category B species, was found at variable density across much of the survey area. It was abundant in disturbed areas, forming the dominant understory in some areas. In hilly, undisturbed areas, Sahara mustard was observed primarily along the main access road and downstream of the road in most washes. It was not present in some washes, present at low density in some washes, and was a dominant component of the understory in a few washes. Sahara mustard was a common but not dominant component of the understory on the open bajadas. Sahara mustard was generally not present in undisturbed native habitats away from the roads and washes. Infestations of Sahara mustard were not mapped because it has occupied the majority of the survey area. A weed survey would be conducted prior to Project construction and the updated weed survey report will be provided to BLM.

Salt cedar was present in the hilly areas but was limited to occasional individuals in some of the larger washes. The individuals observed were generally older (as opposed to newer seedlings), smaller (no more than two meters in height), and do not appear to be spreading. Salt cedar was not observed in disturbed areas or on the bajada.

3.0 Restoration Actions

The restoration plan is divided into three sections: 1) Pre-construction Actions, 2) During Construction Actions, and 3) Post-construction Actions. Since different components of the Project could be in different stages (pre-, during, and post-construction) at different times, more than one type of restoration action may take place in different parts of the Project area at the same time. The following sections provide additional details on each of these sets of actions.

3.1 Pre-Construction Actions

Prior to the initiation of construction, work areas would be surveyed and staked. Pre-construction survey work would consist of locating the ROW boundaries, the locations of proposed facilities, and the centerlines of linear features. Vegetation would be permanently cleared from access roads and structure locations within permanent impact areas, but vegetation removal would be minimized within all temporary impact areas.

The following is a description of restoration actions that would be performed prior to the construction of the Project for activities causing D2 and D3 levels of disturbance. Some of these steps may not be needed if construction methods that cause D0 or D1 levels of disturbance are used. Any changes to the proposed restoration actions would be coordinated with the BLM botanist.

3.1.1 Providing Geospatial Data

A Geographic Information System (GIS) shapefile or file geodatabase and map of the project area will be provided to the BLM botanist prior to the start of pre-construction actions showing temporary use areas, permanent use areas, and their corresponding disturbance and restoration levels.

3.1.2 Weed Survey

Weed management activities would be conducted throughout the life of the Project in accordance with the Project-specific Weed Management Plan. A weed survey would be conducted prior to Project construction to determine the Project's weed risk rating. Prior to construction, BLM will be provided the updated weed survey report, including densities for Sahara mustard along the line.

3.1.3 Seed Collection

Seed would be collected prior to start of construction by a qualified seed company or other BLM-approved method, if feasible. Standard seed collection protocols would be followed. Sites for seed collection would be coordinated in advance with the BLM botanist and would be from the appropriate Mojave seed-transfer zone. Permits are necessary for seed collection outside of the ROW or if collected by a third-party contractor. Only mature seed would be collected. Pounds of seeds required would be based on the approved seed mix and estimate of acres of temporary disturbance. Seed would be collected, cleaned, tested for pounds live seed, certified weed free, and stored by the contractor until it is ready for use, unless other arrangements approved by the BLM are made. Seed would be stored dry in containers that would be labeled with exact location, date of collection, and collector. Containers must be kept in a rodent- and insect-proof location. **Table 6** shows the proposed seed mix for the Project and is based on the BLM sample seed mix from the Restoration Plan Template (BLM 2019).

Table 6 Proposed Seed Mix

Species (Common Name)	Seeding Rate (pounds per acre)	Purity (% pure live seed)	Seed Weight (pounds per 40 acres)	Seed Transfer Zone (from and to)	Supplier
Ambrosia dumosa (White bursage)	3.5	29	140		
Atriplex canescens (Four-winged saltbush)	1.5	12	60		
Ephedra nevadensis (Nevada ephedra)	1.5	12	60		

Table 6 Proposed Seed Mix

Species (Common Name)	Seeding Rate (pounds per acre)	Purity (% pure live seed)	Seed Weight (pounds per 40 acres)	Seed Transfer Zone (from and to)	Supplier
Hilaria rigida (Galleta grass)	3.0	25	120		
Larrea tridentata (Creosote bush)	0.5	3	20		
Sphaeralcea ambigua (Desert globemallow)	0.5	3	20		
Stipa hymenoides (Indian ricegrass)	2.0	16	80		

*All amounts are based on weight of pure live seed.

3.1.4 Perennial Plant Salvage

Perennial shrub salvage is encouraged when soil disturbance is anticipated because it can expedite restoration activities. Since the entire Project area is an R4 area, no perennial plant salvage would occur.

3.1.5 Cacti & Yucca Salvage

Salvage of cacti and yuccas is required by the BLM. A Vegetation Salvage Contractor will implement the nursery setup and salvage of the cacti and yucca from temporary disturbance areas. This contractor will be approved by Nevada BLM and have a minimum of three years' experience with transplanting and maintenance of Mojavean plants. Their responsibilities may include:

- Set-up and maintenance of onsite plant nurseries
- Extraction of target plants from temporary disturbance areas
- Transport of target plants to the onsite nurseries
- Maintenance (watering) of plants
- Transplantation of the target plants during rehabilitation

All salvage activities would take place in the fall, winter, or early spring to minimize plant stress. It is assumed that an experienced Vegetation Salvage Contractor would already have proven strategies for successful transplantation in hand, including proprietary techniques developed from their own experience; however, they would be provided a copy of Salvage, Stockpiling, and Final Transplanting of Cacti and Yucca (BLM to provide) for guidance and reference, and all salvage methods must be consistent with these BLM guidelines. Plant nurseries would be located outside of the areas of disturbance associated with the Project.

Cacti and yucca surveys would be conducted prior to construction to determine the number of cacti and yuccas to be transplanted. **Table 7** will be updated as soon as surveys are complete.

Table 7 Cacti and Yucca Number and Salvage

Species	Common Name	Temporary Disturbance	Permanent Disturbance		
		(#)	(#)	Cost/Plant ($)	Total Cost ($)
Cylindropuntia acanthocarpa var. *coloradensis*	buckhorn cholla	57	326		
Cylindropuntia bigelovii	teddy-bear cholla	59	334		
Cylindropuntia ramosissima	pencil cholla	48	270		
Echinocereus engelmannii	Engelmann's hedgehog cactus	11	56		
Ferocactus cylindraceus	barrel cactus	95	560		
Mammillaria dioica	strawberry cactus	11	56		
Mammillaria tetrancistra	fishhook cactus	11	56		
Opuntia basilaris var. *basilaris*	beavertail cactus	48	270		

3.1.6 Vertical Mulch Salvage

For areas that require clearing and cutting, vegetation (vertical mulch) would be mechanically windrowed to an area outside disturbance boundaries. Large rocks and boulders would also be removed to the side. Care would be taken to prevent the disturbance of the natural patina or desert varnish of these rocks.

3.1.7 Biocrust Salvage

Significant stands of biological crust must be salvaged either by hand or with very small equipment (small backhoe or similar). The crust would be placed dry in plastic buckets and kept dry until ready to place back on the soil surface.

It is not anticipated that biocrust would be encountered within disturbance areas. Biocrust surveys would be conducted concurrently with cacti and yucca surveys prior to construction.

3.1.8 Soil Salvage

After required plants have been salvaged from the site, topsoil would be salvaged by removing the top 4" (+/- 2") of soil, including all rocks and vegetation. Rocks over 6 inches would be removed and stockpiled outside the disturbance areas but within the ROW. This topsoil would be labeled as such and protected from erosion and inadvertent use as fill. Topsoil would never be mixed with subsoil. When stockpiled, topsoil would be treated with a vegetal-based tackifier to a 2" wetting depth to minimize erosion. If bedrock close to the surface would not allow for full salvage depth, whatever soil materials are available would be salvaged. Different soil types would be stockpiled separately (gypsum or sand, for example). Overall, handling would be kept to a minimum.

3.2 Construction Actions

The following is a description of restoration actions that would be performed during the construction of the Project for activities causing D2 and D3 levels of disturbance. Some of these steps may not be needed if construction methods that cause D0 or D1 levels of disturbance are used. Any changes to the proposed restoration actions would be coordinated with the BLM botanist.

3.2.1 Weed Survey

Weed management would be conducted throughout the life of the Project and in accordance with the Project-specific Weed Management Plan. Weeds would be surveyed for multiple times throughout the year during biologically meaningful periods for the weed species in question. Weeds would be treated or removed before they have gone to seed.

3.2.2 Biocrust and Nursery Maintenance and Monitoring

Any salvaged plants (including cacti and yucca) or biocrust would be monitored and watered periodically such that the soil crust and plants survive.

3.2.3 Seed Collection

See **Section 3.1.3** for details on seed collection.

3.2.4 Soil Stabilization

Soil would be stabilized using a BLM-approved dust palliative/soil binder (**Attachment B**).

3.2.5 Pre-restoration with Biocrusts

As stated in **Section 3.1.7**, biocrust would be mapped during cacti and yucca surveys; however, substantial occurrence and salvage is not anticipated.

3.2.6 Reporting

A final report would be developed at the completion of construction. Informal reports of any weeds found or treated would be delivered to the BLM within 15 days of surveys or treatments.

3.3 Post-Construction Actions

All restoration efforts would be implemented as soon as practical after disturbance of a site has concluded and prior to the typical rainy season of late summer and early fall. This would minimize the potential for soil loss and establishment of noxious weeds. The following is a description of actions that would be implemented after the completion of construction for activities causing D2 and D3 levels of disturbance. Some of these steps may not be needed if construction methods that cause D0 or D1 levels of disturbance are used. Any changes to the proposed restoration actions would be coordinated with the BLM botanist.

3.3.1 Decompaction

Where any compaction exists, the surface would be scarified, tilled, or harrowed to a depth of 6 inches, as appropriate (not applicable to rock faces, severe slopes, or cliff areas). Depth of compaction relief would depend on site-specific conditions. Decompacting and ripping would be conducted in a manner that avoids “corn rows”. Cross-ripping is preferable and care should be taken to prevent inverting the soil layers. The surface soil would be re-distributed following site re-contouring and preparation (decompacting and ripping). Small pieces of surface caliche may be buried to a minimum of 24" depth. Soil would be wet to a depth of 2" to prevent further erosion. The site would be left adequately rough after surface soil placement to provide microsites for seed germination and to reduce soil movement. Deep sandy soils do not need to be decompacted and would not be ripped.

3.3.2 Soil Replacement

Stockpiled salvaged topsoil would be replaced in temporarily disturbed areas. Replaced topsoil would be left in an unscreened condition in an effort to minimize erosion. In case of shortage, a shallower depth would be replaced in all areas rather than none in a few places. Additional erosion control and soil stabilization may be required to minimize soil movement, especially for heavily sloped areas or for fine-textured soils. Dust palliatives/soil binders would be used on any steep stockpile slopes to reduce movement and erosion. Surface soil would not be handled excessively during windy conditions.

3.3.3 Biocrust Replacement

As stated in **Section 3.1.7**, biocrust would be mapped during cacti and yucca surveys; however, substantial occurrence and salvage is not anticipated. The timing of re-application of biocrusts is critical for the success of crust recovery. If biocrust were salvaged from a site, it would be re-applied in the late fall to early spring. After the surface soil has been replaced, the salvaged biocrust would be spread evenly over the surface and watered once per day over the next three days.

3.3.4 Transplanting Succulents

Salvaged cacti, yuccas, and other nursery stock would be temporarily stored on-site outside of disturbance areas during soil preparation. Cacti and yuccas would be out-planted in a random "natural" arrangement (i.e., avoiding lines and checkerboard patterns). Yuccas would be arranged in groups of 3 to 4 individuals, loosely spaced. Cacti would be distributed randomly across the site and would not be planted in dense clumps. Best Management Practices (BMPs) are provided in **Attachment A**.

3.3.5 Transplanting Perennial Plants

As discussed in **Section 3.1.4**, the entire Project area is located within an R4 restoration level area; therefore, perennial plants would not be salvaged.

3.3.6 Vertical Mulch

For areas that have been cleared, vegetation that was windrowed to the outside of the disturbance boundary would be replaced back onto the site. Large rocks and boulders removed to the side of the disturbance would be placed back with the darkened side facing up in a natural appearing pattern.

3.3.7 Seeding

Section 3.1 and **Table 6** provide details on seed collection and the proposed seed mix. Seeding would include pelletizing, imprinting, or hydroseeding based on BMPs, time of year, and current research. The BLM botanist would be consulted to ensure that proper methods are used. A total live seed rate of approximately 400 pure live seeds per square meter would be targeted. Final seed rate would be determined in coordination with the BLM botanist and based on final species selection.

3.3.8 Signing

All restoration areas would have signs installed at regular intervals to deter vehicular damage to the site. If off-highway vehicle incursions occur at a rate higher than five per month, additional fencing and signage would be added. Large rocks or boulders have also been used successfully to deter incursions. Designs and locations of fencing would be approved by the BLM and conform to BLM specifications.

3.3.9 Weed Management

Weed monitoring and reporting is an integral part of the restoration plan. Restoration would not be successful without strict adherence to the Weed Management Plan. Sites would be delayed from release, at the discretion of the BLM botanist, if the Weed Management Plan is not being strictly adhered to.

4.0 Maintenance, Monitoring, and Reporting

Maintenance, monitoring, and reporting are important parts of site restoration. The following sections provide details on each of these activities.

4.1 Maintenance

Consistent maintenance and reporting are necessary for the eventual success of restoration. Maintenance includes but is not limited to watering transplants, removing weeds and trash, repairing fencing, maintaining plant shelters, and repairing erosion damage. These tasks would be reported to BLM annually.

4.1.1 Watering Transplants

Transplanted succulents would be watered if/as needed to maintain healthy individuals.

4.1.2 Weed Management

Weed management for this Project would be conducted throughout the life of the Project in accordance with the Weed Management Plan.

4.1.3 Removing Trash

The ROW would be kept free of trash, to the extent feasible, which can contain weeds.

4.1.4 Repairing Fencing / Installing Boulders to Prevent Intrusion

Fencing or boulders would be maintained, as necessary and practicable, to prevent intrusions that could harm restoration efforts.

4.1.5 Installing or Removing Plant Shelters

Plant shelters would be installed or removed as necessary to ensure that plants stay healthy and can be transplanted following disturbance.

4.1.6 Remediation

Additional restoration actions would be taken, as necessary, on sites that are not progressing towards meeting standards; these sites would be re-evaluated in subsequent years. All reasonable methods would be used, including container plantings, on-site watering, additional seed collections, etc., to help ensure that standards are met on all disturbed sites.

4.1.7 Soil Stabilization

Soil stabilization methods (including use of BLM-approved palliatives/soil binders, **Attachment B**) would be applied as necessary to ensure that soils in temporarily disturbed areas remain stable and viable for restoration.

4.2 Monitoring

4.2.1 Minimum Monitoring Time Period

Calculations for selecting the minimum monitoring period are shown in **Table 8**.

Table 8 Monitoring Period Calculation

	Disturbance Type (total acres from Table 3)			
Disturbance	**D0 (+1)**	**D1 (+2)**	**D2 (+6)**	**D3 (+8)**
Long, linear (>5 miles)? Yes +2, No +0	+0	+0	+0	+0
Large area (> 1 acre, <20 acres) Yes +1, No +0	+0	+0	+0	+0
Very large area (>20 acres) Yes +4, No +0	+0	+4	+0	+0
Weed Risk Rating* Low (1-10) +1 only for D2 or D3	+0	-	+0	+0
Weed Risk Rating* Moderate (11-49) +2	+0	-	+0	+0
Weed Risk Rating* High (50-100) +4	+0	-	+0	+0
Total Years per Disturbance Type (add all rows)	0	6	0	0

*Weed surveys will be conducted prior to construction; this table will be updated when the weed risk rating is determined.

This section provides a formula for calculating the years required to monitor a restoration project. More soil disturbance and larger areas would lead to longer monitoring periods.

- Disturbance Level:
  - D0 - add 1 years
  - D1 - add 2 years
  - D2 - add 6 years
  - D3 - add 8 years
- Type of Area Use:
  - Linear - Short (< 5 miles) - add 0 years
  - Linear - Long (> 5 miles) - add 2 years
  - Small Area (< 1 acres) - add 0 years
  - Large Area (1 acres < ; < 20 acres) - add 1 year
  - Very Large Area (> 20 acres) - add 4 years
- Weed Risk Rating (from Weed Management Plan):

- None (0) - add 0 years
- Low (1-10) - if D2 or D3 - add 1 year
- Moderate (11-49) - add 2 years (add additional 2 years for every year weeds are not treated appropriately)
- High (50-100) - add 4 years (add additional 4 years for every year weeds are not treated appropriately)

4.2.2 Use of DIRT geodatabase

All restoration tracking would be entered into DIRT geodatabase, which would be sent to BLM annually as part of performance monitoring.

4.2.3 Qualitative Monitoring

Qualitative monitoring would be used to inform the proponent, its contractors, and the BLM as to the progress of recovery and to identify potential problems at an early stage so that necessary adaptive management actions can be taken without affecting the overall Project timeline. Qualitative monitoring would include repeated photo documentation at established points across the site, site inspections, and visual assessment of plant health and soil erosion. This monitoring would be performed by the Project Lead Botanist or their staff. A site-specific monitoring data form would be developed and used consistently throughout the recovery period. The goal of qualitative monitoring is to record site conditions to determine the need for any additional remediation measures and to ensure that the site is continuing to progress toward meeting the success standards.

Qualitative monitoring would include:

- Observations of germinating species in the seed mix
- Estimates of perennial percent cover, density, and species richness
- Estimates of density and richness of native annuals
- Health and vigor of salvaged cacti and yucca and transplanted nursery-grown shrubs
- Soil erosion
- Native plant recruitment
- Phenology (flowering, fruiting, etc.) of native plants
- Herbivory
- Plant disease or infestation
- Presence of non-native species
- Presence of native animals
- Vegetation patterns

4.2.4 Quantitative Monitoring

Quantitative monitoring is used to objectively determine when a disturbed site has progressed sufficiently toward recovery of the natural ecosystem structure and function that it would continue to progress toward a self-sustaining system, and the proponent can be released from responsibility. To determine if restoration success criteria have been met, performance standards would be measured on the site before sign-off. These measurements may be taken sooner if the site appears to be recovering more quickly (as in cases of D0 or D1 disturbance). Measurements of percent cover, density, and species richness for perennial natives would be compared to baseline data taken prior to disturbance. Measurements for annual natives would be compared to measurements made from a nearby undisturbed reference area because variation in growth of annual plants can be substantial between years.

Quantitative monitoring would include line-point intercept, line intercept, or a modified AIM (Assessment, Inventory, and Monitoring) protocol, or some combination of these. Specific methods would be developed by the proponent or its contractors and approved by the BLM.

Transect locations would be randomly selected within both disturbance and reference areas. Transects must adequately represent the entirety of the site and enough transects must be measured to estimate success criteria within a given confidence level. If the mean for a given success criterion is less than the standard, a one-sample, one-tailed t-test would be performed. Failure to reject the null hypothesis that the restored area cover and density values are greater than or equal to the cover and density of the restoration area compared to the baseline data or reference site data would indicate that the site has been successfully restored.

Species richness is evaluated by comparing the total number of native perennial species on the site to the number of species found in the same surveyed area prior to disturbance or on the reference site. No statistical tests are performed on species richness data, as there is no measure of variance.

4.3 Reporting

An as-built report would be prepared and submitted to the BLM within 60 days of completion of initial restoration efforts. This as-built report would be considered the beginning of the reporting period. The as-built report would include:

- GIS maps of the re-vegetated areas
- Revegetation methods, numbers, and species of all out-planted individuals, areas, amounts, and species seeded
- Copies of seed tags
- Record of seed testing
- Photos before, during, and after revegetation work
- Dates of revegetation work
- Personnel involved on each date
- Problems encountered and how they were addressed
- Any other relevant information

4.4 Remediation for Non-Compliance with Maintenance, Monitoring, and Reporting

4.4.1 Reporting Frequency

The schedule for reporting is provided in **Table 9**.

Table 9 Monitoring and Reporting Timeframes

Tasks	Year 1	Year 2	Years 3 and 4	Year 5	Year 6
As-Built Report	60 days after completion of restoration	n/a	n/a	n/a	n/a
Date report submitted		n/a	n/a	n/a	n/a
Qualitative Monitoring					
Site inspection / visual assessment	Quarterly	Quarterly	Biannually	Annually	Annually

Table 9 Monitoring and Reporting Timeframes

Tasks	Year 1	Year 2	Years 3 and 4	Year 5	Year 6
Photo monitoring	Annually	Annually	Annually	Annually	Annually
Date Report Submitted					
Quantitative Monitoring					
Transect / plot monitoring	Annually	Annually	Annually	Annually	Annually
Date Report Submitted					

*All formal annual reports would be submitted before December 15 of the same year.
**Qualitative monitoring would be increased where Weed Risk Ratings are Moderate or High – weed surveys would be conducted prior to construction. This table would be revised as necessary.

4.4.2 Site Visits

Site visits would be coordinated with BLM periodically (particularly if sites are not meeting restoration criteria) and before site sign-off.

4.4.3 Deficiencies in Reporting

Reports not submitted in a timely manner may lead to longer monitoring time periods at the discretion of the BLM botanist.

4.4.4 Deficiencies in Compliance with Restoration Plan

If recommended remedial steps to meet restoration criteria are not taken in a timely manner, or other required components are not followed, one additional year of monitoring would be added for every year these requirements are not followed.

4.4.5 Sites with Moderate or High Weed Risk Rating

- Weed risk rating of Moderate (11-49) - An additional two years of monitoring would be added for every year weeds are not treated or reported appropriately.
- Weed risk rating of High (50-100) - An additional four years of monitoring would be added for every year weeds are not treated or reported appropriately.

5.0 Success Standards

Restoration would be considered successful if plant cover, density, and species richness of native perennial vegetation is equal to or exceeds a designated percentage of the values for these parameters in undisturbed reference areas. The standards required for the four land management designations are: 100% for R1, 80% for R2, 70% for R3, and 60% for R4. If these standards are met on a restored site in a six-year time period, the site may be released from further monitoring as long as cover, density, or diversity of weed species is not higher in the restoration areas than in reference areas for a minimum of two years prior to site release.

Success Standards

- Cover of Perennial Species (60% of reference site): This does not include cacti or yucca.

- Density of Perennial Species (60% of reference site): This does not include cacti or yucca.
- Richness of Perennial Species (60% of reference site): This does not include cacti or yucca.
- Number of Dominant Species (60% of reference site): This does not include cacti or yucca.
- Biocrust Cover and Richness (60% of reference site)
- Annual Species (60% of reference site)
- Cacti and yucca (80% survival)
- Non-native Species Cover (Compared to reference site)
- Non-native Species Richness (Compared to reference site)
- Resistance to non-native species
- Seedling recruitment
- Lack of significant erosion
- Evidence of wildlife use

Sites would be released at the discretion of the BLM botanist. Remedial actions to meet restoration plan criteria would be taken when sites are not progressing towards meeting criteria in the scheduled time period. Monitoring timeframes would be extended and may be intensified until restoration criteria are met.

6.0 Site Release

For sites larger than one acre (such as the proposed Project), restoration is considered successful and sites are released from monitoring based on the success standard outlined above. Portions of the Project that meet success criteria would be released as soon as they are met. Portions that do not meet success criteria would continue to be monitored until they meet criteria.

7.0 References

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Attachment A Best Management Practices for Cacti And Yucca Salvage and Transplanting

Best Management Practices for Cacti And Yucca Salvage and Transplanting

- Methods for Extraction, Handling, and Transplanting

    - All salvage activities will take place in fall, winter, or early spring to minimize plant stress. It is assumed that an experienced Vegetation Salvage Contractor will already have proven strategies for successful transplantation in hand, including proprietary techniques developed from their own experience; however, they will be provided a copy of Salvage, Stockpiling, and Final Transplanting of Cacti and Yucca (BLM 2013, Attachment 1) for guidance and reference, and all salvage methods must be consistent with these BLM guidelines. A summary of these measures is provided in this section below.

- Extraction Procedures

    - Yuccas will be extracted with heavy equipment (backhoes/front-end loaders), taking care not to damage roots, stems, or lower part of the plants. Salvaged yucca will be transplanted immediately. Large, widely-spaced yucca clones will inevitably break apart during extraction. These clones will be cleaned up by clipping the roots to approximately 1' length and then transplanted as individuals. Yuccas have extremely sharp and stiff leaves which can easily penetrate deeply into human flesh and potentially cause profound internal organ damage. Extreme care will be taken in handling this hazardous plant, including the use of eye protection and gloves. Yuccas will be handled using heavy machinery, using long pitchforks to help with moving and positioning. Salvage workers will keep a safe distance from any yucca elevated above head-level on machinery.

    - Cacti will be extracted by hand using conventional tools (shovels and picks). Cacti will be handled with long pitchforks, and loose soil will be shaken off of the root ball. Roots will be cleanly clipped to about the diameter of the plant, taking care to avoid lacerating the roots. Cacti will be transplanted immediately or stored under shade cloth to prevent sunburn. Cacti have sharp and vicious spines but are mostly a nuisance hazard. Heavy gloves are only moderately effective at blocking spines. Whenever practical, handling cacti will be performed with long pitchforks. Eye protection will be worn at all times while handling cacti.

- Transplanting to Plant Nurseries

    - The nursery will be prepared before transplanting begins. Parallel trenches will be dug into the salvaged topsoil with wide-enough spacing to accommodate loaders, backhoes and watering trucks. Each trench will be at least approximately 18" deep and 3' wide. Immediately before transplanting, each trench will be soaked deeply with water and allowed to drain. It is recommended to plant similar cactus species together, with individuals of similar size class together. This helps in controlling watering rates for different species and sizes of plants (Baker, pers. com.). Cactus and yucca will be transplanted directly into moist trenches, maintaining their original north-facing orientation. Yucca will be planted at least one foot apart. Long pitchforks will be used to hold plants in place while backfilling with trench soil. Soil will be carefully tamped down to reduce air pockets, and a shallow berm will be created around each plant for watering. Watering Guidelines are as follows:

        - Water thoroughly immediately after transplant;

- Water thoroughly 2 weeks after transplant;
- Water additionally as needed, but no more frequently than every two months to avoid root rot; and
- Remove or minimize any air pockets and assure proper soil compaction. Care should be taken to properly compact all soil around the roots of plants that are directly transplanted.

- Cacti will be extracted from the nurseries using hand tools, carefully shaking off loose soil and clipping roots to about the diameter of the plant. Transplanting holes will be dug approximately 1' deep and 2' wide. Immediately before transplanting each hole will be filled with water and allowed to drain. Cacti will be positioned within the holes, maintaining their original north-facing orientation. One worker will hold the cacti in place while the other worker carefully backfills with loose soil. Soil will be tamped down lightly, and a watering berm will be formed around each plant. Plants will be watered thoroughly after transplanting.

- For yuccas, transplanting holes will be dug approximately 2' deep and 3' wide or larger for clones and larger plants. Yuccas will be carefully extracted using backhoes or loaders, being careful to avoid damaging the roots and lower stems. Immediately before transplanting, the holes will be filled with water and allowed to drain. The holes will then be refilled with water and backfilled halfway with soil to create a muddy slurry. Yuccas will be placed into this muddy slurry, maintaining their original north-facing-orientation, and the remainder of the holes will then be backfilled. A watering berm will be formed around each plant, and each plant will then be watered again thoroughly. After two weeks, soil water moisture will be checked with a probe to determine if additional watering is needed. Transplanted cacti and yucca will be watered in this sequence:
  - Water thoroughly immediately after transplant;
  - Water thoroughly 2 weeks after transplant; and
  - Water additionally as needed, but no more frequently than every two months to avoid root rot.

Attachment B BLM-Approved Dust Palliatives/Soil Binders

BLM-Approved Dust Palliatives / Soil Binders		
	Water	**Synthetic Polymer Derivatives (FSB-1000, Pas Tex, Soil Sement)**
Attributes	• Agglomerates the surface particles • Readily available	• Binds surface particles because of polymers' adhesive properties • Stabilized product resists wash out from rain events • Can be tilled in to create a compact surface in sandier soils
Limitations	• Evaporates readily • Controls dust generally for less than a day • Generally the most expensive and labor intensive of the inorganic suppressants	• Difficult to maintain as a completely hard surface • Re-grading activity will cause the profile to break apart and destroy the products' bonding capacity
Application	• Frequency depends on temperature and humidity • Typically only effective from 1/2 to 12 hours	• Generally 1 to 2 treatments per year • Application rates vary significantly depending on the activity (traffic/non-traffic, soil conditions, etc.)
Origin	• Any potable water source	• By-product of adhesive or paint manufacturing process
Environmental Impact	• None	• Water quality impact: none • Freshwater aquatic impact: generally low • Plant impact: none

Appendix F – Weed Management Plan

Arida-Mohave Transmission Line Project

Integrated Weed Management Plan

October 2021

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Acronyms and Abbreviations

BLM	Bureau of Land Management
EPA	U. S. Environmental Protection Agency
GIS	Geographic Information System
GPS	Global Positioning System
kV	Kilovolt
NRS	Nevada Revised Statutes
PPE	Personal Protective Equipment
Project	Arida-Mohave Transmission Line Project
PUP	Pesticide Use Proposal
Reclamation	Bureau of Reclamation
ROW	Right-of-Way

1.0 Introduction

The goal of this Integrated Weed Management Plan (Plan) is to reduce the establishment and spread of weeds during construction, operation, maintenance, and decommissioning of the Project. The objectives of this plan include working with relevant entities to control weeds in the right of way (ROW), understanding the type and distribution of weeds in the ROW, and implementing effective control and monitoring efforts toward reducing the spread and establishment of weeds in the ROW.

Invasive, non-native plants, often referred to as "weeds", are considered undesirable and warrant effective management and control for a variety of reasons including competition with native and agricultural plant species, impacts to habitat function and capability, degradation of the aesthetic qualities and values of viewsheds and landscapes, and more. Nevada Revised Statutes (NRS) 555.005 defines a noxious plant as "any species of plant which, is, or is likely to be, detrimental or destructive and difficult to control or eradicate." As human presence and activity increases, the potential for spreading and establishing noxious and invasive plants increases.

Noxious weeds are plant species that spread into areas where they are not native and typically displace native vegetation or bring about changes in species composition, community structure, or ecosystem function. The NRS defines "noxious weed" as "any species of plant which is, or is likely to be, detrimental or destructive and difficult to control or eradicate" (NRS 555.005). The State of Nevada maintains a list of noxious weeds (**Attachment A**). The BLM manages all weeds on the state list on the lands that it manages. This list contains 47 species and is divided into three categories:

- Category A noxious weeds are generally not found or are limited in distribution throughout the state. Such weeds are subject to active exclusion from the state and active eradication wherever found.
- Category B noxious weeds are generally established in scattered populations in some counties of the State. Such weeds are subject to active exclusion where possible.
- Category C noxious weeds are generally established and generally widespread in many counties of the State.

1.1 Purpose

The purpose of this Plan is to describe the actions that the Project's Applicant (326FW 8me LLC) and its approved contractors would use to prevent, mitigate, and control the spread and establishment of noxious weeds during the construction of the Project. This plan has been developed in accordance with applicable federal and state regulations, stipulations, and standards for the control of noxious weeds and invasive species.

326FW 8me LLC and its approved contractors would be responsible for the control of noxious weeds for the lifetime of the Project, including

- Surveying for and treating noxious weeds during biologically appropriate times and before the noxious weeds have gone to seed.

- Noxious weeds that were common in the Project area prior to disturbance will be kept at levels (cover and density) less than or equal to pre-disturbance conditions. Non-native weeds that were not common or non-existent in the Project area prior to disturbance will be treated.

- Monitoring for and reporting to BLM on non-native and noxious weeds occurrence, spread, and treatment for the lifetime of the ROW.

- In the case of utility corridors with multiple ROWs, the ROW holders may coordinate to treat weeds in coordination with the BLM.

- A signed Pesticide Use Proposal (PUP) will be obtained by the proponent prior to any ground-disturbing activity. The proponent will submit a new PUP six months prior to their current PUP's expiration date.

1.2 Project Description

The Arida to Mohave 500kV Transmission Line Project (Project) would be an approximately 8.8-mile-long 500-kV transmission line between the new Arida Substation and the existing Mohave Substation near Laughlin, Nevada. A portion of the proposed line would cross federal land administered by two Department of Interior agencies, the Bureau of Land Management (BLM) and the Bureau of Reclamation (Reclamation). It would be constructed as a single-circuit 500 kilovolt (kV) line or a double-circuit 500kV line.

For about 4.0 miles of its total length, the Project would parallel the route of the existing Lugo-Mohave 500kV line. The approximately 7.2 miles of federal lands crossed by the line would include approximately 6.7 miles of BLM-managed federal lands and 0.5 miles administered by Reclamation. **Figure 1** shows the general location and **Figure 2** shows the proposed alignment of the Project.

1.3 Project Area

The Project area is located within the Mojave Basin and Range Level III Ecoregion and the Arid Valleys and Canyonlands Level IV Ecoregion (Bryce et al. 2003). The Arid Valleys and Canyonlands ecoregion includes steep canyons and bench lands below 2,000 feet elevation, as well as floodplains near the Colorado River. This is one of the hottest and driest ecoregions in Nevada, receiving only two to seven inches of rainfall per year. Rocky colluvial soils cover eroded slopes; deeper soils occur on benches and alluvial fans. Vegetation is a sparse, but diverse, shrub cover that includes creosote bush (*Larrea tridentata*), white brittlebush (*Encelia farinosa*), white bursage (*Ambrosia dumosa*), mesquite (*Prosopis* sp.), palo verde (*Parkinsonia* sp.), and occasional Sonoran desert elements, such as ocotillo (*Fouquieria splendens*). Along the Colorado River, non-native salt cedar (*Tamarix ramosissima*) is replacing native riparian vegetation, such as Fremont cottonwood (*Populus fremontii*) and willow (*Salix* sp.) (Bryce et al. 2003).

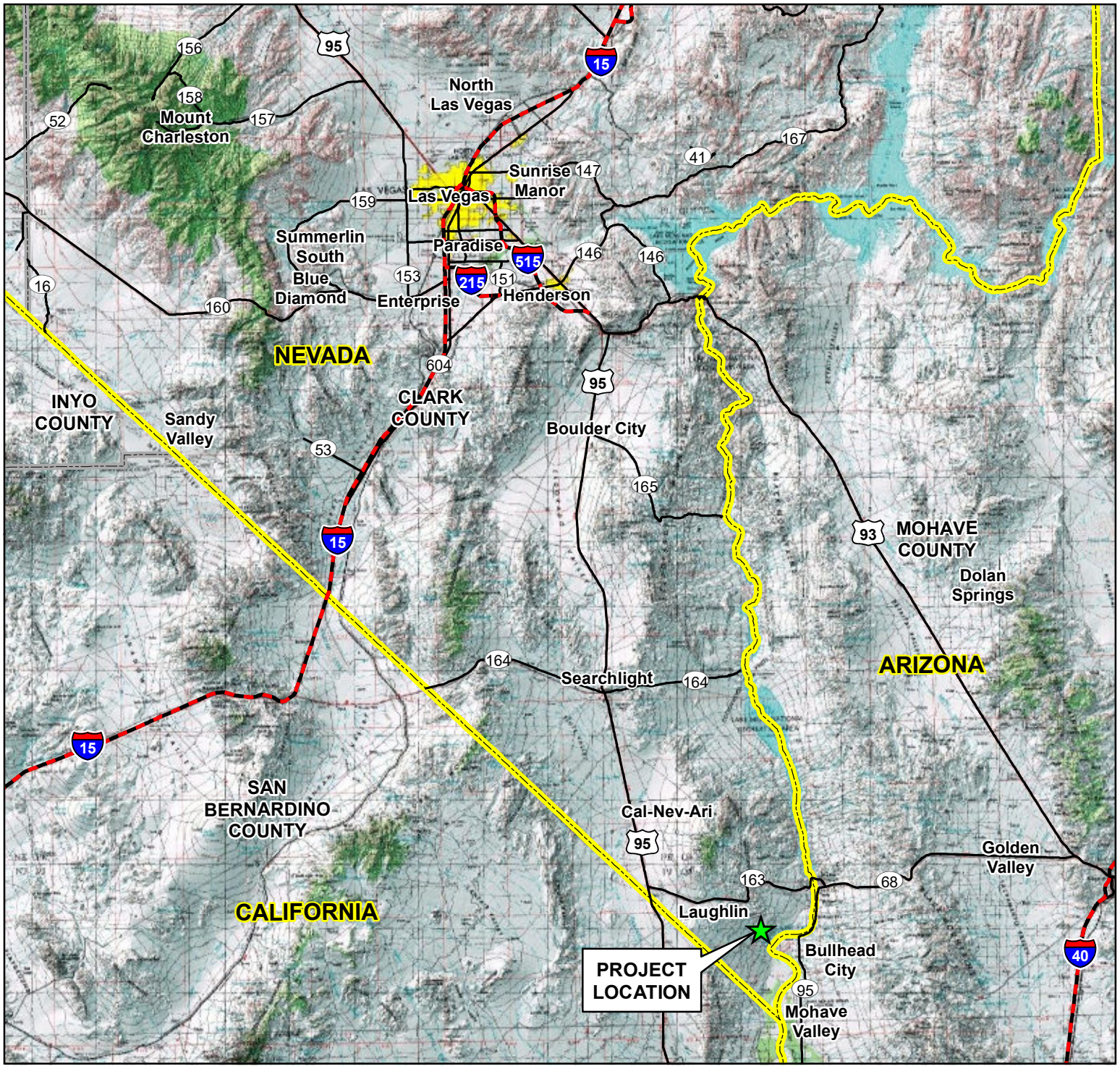
2.0 Weed Management

Weed management for the Project will include identification of problem areas, implementation of measures to prevent the spread and establishment of new weed occurrences, and application of appropriate measures to treat known occurrences of weeds. These steps toward effective weed management are described in the following sections.

The BLM has developed several checklists to aid in the documentation and reporting of weed management actions. These checklists are provided in attachments to this plan and include:

- Pre-Construction Checklist (**Attachment B**)
- Construction Checklist (**Attachment C**)

- Restoration Checklist (**Attachment D**)
- Operations and Maintenance Checklist (**Attachment E**)



ARIDA-MOHAVE TRANSMISSION LINE

FIGURE 1
PROJECT LOCATION

LEGEND

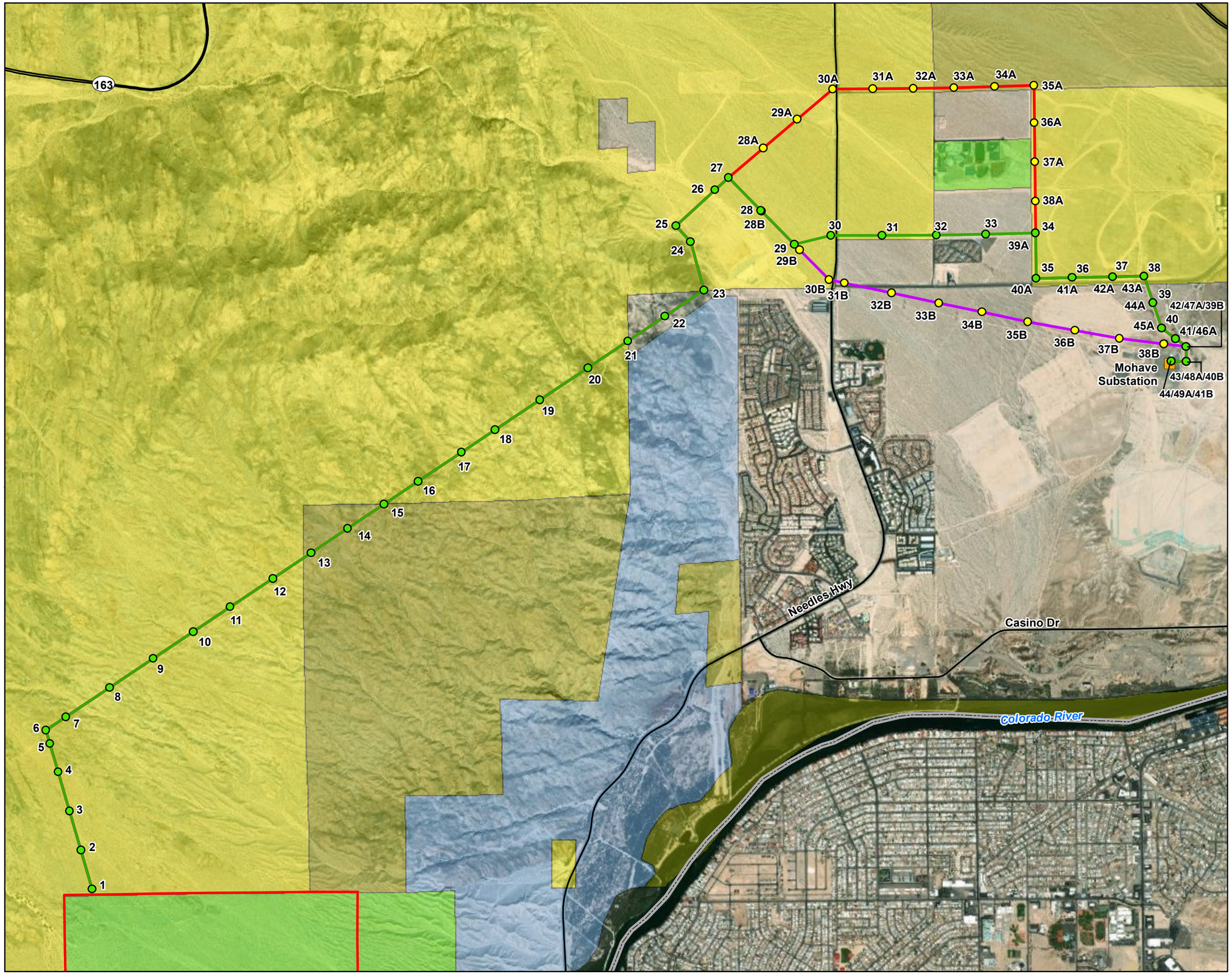
- Interstate
- US Route or State Highway
- State Boundary
- County Boundary

0 5 10 15 20
Miles

Data Sources: ADOT, BLM, CalTrans, ESRI, NDOT, USDA.
F:\\Arida\MXDs\Figure 1-1 Arida-Mohave Transmission Line 061020.mxd 6/10/2020 SJW

ARIDA-MOHAVE TRANSMISSION PROJECT

FIGURE 2
PROJECT OVERVIEW



LEGEND

- Existing Substation
- Major Road
- County Boundary

Proposed Project

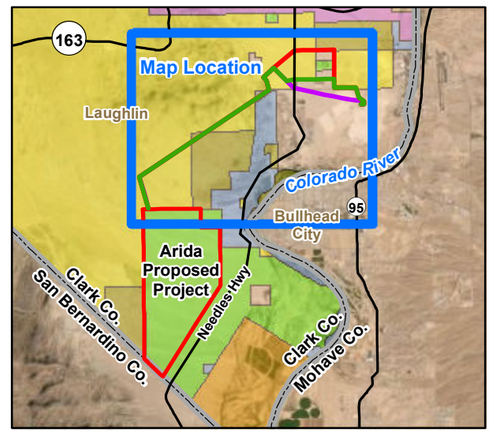
- Proposed Project Structure
- Route Option Structure
- Proposed Project Route
- Route Option A
- Route Option B
- Arida Proposed Project Site

Jurisdictional Land Ownership

- Bureau of Land Management Land
- Bureau of Reclamation Land
- State Land
- County Land
- Private Land (No Shading)

0 0.25 0.5 0.75 1
Miles

Data Sources: BLM, Clark Co., ESRI, NDOT, USDA.
F:\Projects\Arida\MXDs\Fig 2-1 Project Overview 102821.mxd
10/28/2021 SJW



2.1 Pre-Construction Weed Surveys

No detailed noxious weed surveys have been conducted in the Project area to date; however, an integrated vegetation survey was conducted in October 2020 and provides preliminary information of noxious weeds in the Project area (Heritage 2021).

Two of the noxious weed species listed in **Attachment A** were observed during the field survey (Sahara mustard and salt cedar). Several other non-native species that are not considered noxious weeds, including stork's bill (*Erodium cicutarium*), Mediterranean grass (*Schismus arabicus*), and red brome (*Bromus madritensis* ssp. *rubens*), were observed in the survey area. In general, non-native species were observed in and near disturbed areas such as roads and were not observed or were present at low density in undisturbed, native habitats.

Sahara mustard, a Category B species, was found at variable density across much of the survey area. It was abundant in disturbed areas, forming the dominant understory in some areas. In hilly, undisturbed areas, Sahara mustard was observed primarily along the main access road and downstream of the road in most washes. It was not present in some washes, present at low density in some washes, and was a dominant component of the understory in a few washes. Sahara mustard was a common but not dominant component of the understory on the open bajadas. Sahara mustard was generally not present in undisturbed native habitats away from the roads and washes. Infestations of Sahara mustard were not mapped because it has occupied the majority of the survey area.

Salt cedar was present in the hilly areas but was limited to occasional individuals in some of the larger washes. The individuals observed were generally older (as opposed to newer seedlings), smaller (no more than two meters in height), and do not appear to be spreading. Salt cedar was not observed in disturbed areas or on the bajada.

Prior to construction, a detailed weed survey would be conducted. The Project site, including the ROWs for the transmission line and access roads, would be surveyed for noxious weeds before surface disturbing activities begin. The survey would focus on identifying and mapping occurrences of Nevada state-listed weed species (**Attachment A**) but would also note other non-native species that are present in the survey area.

The results of the weed survey would contribute to the identification of problem areas within the Project site. The weed survey would feature botanists walking parallel transects, searching for weeds on both sides of each transect. Identified weed occurrences would be described to species, assigned a ground cover rating, and individuals would be counted or estimated, as appropriate. The location of identified weed occurrences would be recorded using a hand-held global positioning system (GPS) unit and all recorded occurrences would be mapped using geographic information system (GIS) software. All identified weed occurrences would be marked in the field, either by flagging, pin flags, or other means to indicate to construction personnel that such areas are to be avoided until appropriately treated.

2.2 Preventative Measures

The prevention of weed establishment is the most effective weed management practice. Preventing or reducing the potential for weed establishment reduces additional efforts, costs, and time invested in subsequent weed control or eradication measures. Several measures have proven to be effective toward preventing the spread and establishment of weeds on projects where surface disturbing activities are proposed. The following preventative measures would be implemented:

- Vehicles and equipment will be inspected upon entry to ensure cleanliness.

- All materials used during reclamation, revegetation, and installation of stormwater/erosion control measures would be certified as weed-free.
- Vehicle travel in the Project area would be restricted to designated roads and established overland travel routes.
- Disturbance areas would be limited to the smallest area needed for construction.
- The environmental training would include a section on weed spread and colonization.

2.3 Treatment Measures

Treatment methods are necessary to control and eradicate known invasive and noxious weed occurrences. Treatment methods include a variety of approaches such as mechanical, chemical, and biological controls. The most appropriate and effective weed treatment measures will be determined following the assessment of existing weed populations in the Project area. **Attachment F** contains a table identifying weed species, treatment methods, and timing of treatment and monitoring, to be completed after the weed assessment.

Chemical treatments involve the use and application of herbicides. The use of herbicides is highly regulated and involves a variety of specific protocols, safety measures, and precautions for eliminating, reducing, and mitigating for uncontrolled releases. The possible use of herbicides as a treatment method is described in additional detail in **Section 3**.

The Project area is located in suitable and occupied desert tortoise habitats. As such, the application of herbicides may be permitted, although a PUP would need to be submitted to the BLM prior to herbicide use. Herbicides and herbicide formulations approved for use in desert tortoise habitat are listed in **Attachment G** and **Attachment H**, respectively.

Mechanical treatments include the use of physical means to remove plants, reproductive parts, or propagules. Mechanical treatments include manual methods (pulling weed plants from the soil), use of hand tools and hand-held power tools, mowing, and more aggressive efforts that involve removing above and below ground plant structures. The designation of the appropriate mechanical treatment will depend on variables including season, plant life stage, weed species, size and population of each occurrence, and more. The weed management contractor will coordinate with the appropriate agencies before implementing any weed treatment methods.

Biological treatments include the use of plants and animals (particularly insects) that parasitize, ingest, or out compete weed species. Based on the weed species expected to occur in the Project area and other factors, biological controls are not expected to be a viable or appropriate alternative for treating weed occurrences.

3.0 Herbicide Application, Handling, Spills, and Cleanup

This section describes requirements for herbicide applicator training, herbicide application and handling, and spills / cleanup.

3.1 Herbicide Applicator Training

All herbicide applicators will also be required to undergo the standard health and safety training for all Project workers. The following requirements for herbicide applicator training will be implemented as part of the Project.

- All herbicide applicators will be required to complete pesticide certification training and have a current Certified Pesticide Applicator's License administered by the State of Nevada.

- Prior to applying herbicides, all applicators will be informed if and where there is a known occurrence or suitable habitat for protected species or other sensitive resource in the area. Sensitive areas would be clearly marked and would be considered avoidance areas unless otherwise coordinated with the BLM.

- Herbicide applicators will be provided with all terms and conditions related to weed treatment and pesticide use.

- All contractors responsible for herbicide use, transport, application, and control at the site will hold the appropriate certifications. Such certifications would be made available as requested. Contractors transporting herbicides to the site would have legible material safety data sheets (MSDSs) and labels on site. All herbicide spills and inadvertent releases would be reported in accordance with all applicable laws and regulations.

3.2 Herbicide Application and Handling

Weed management contractors and personnel that are responsible for applying herbicides will obtain all required federal, state, or local agency permits and would hold all necessary certifications and have received all relevant training. Permits may include terms and conditions that are not included in this weed management plan. A licensed contractor would apply herbicides in accordance with all applicable laws, regulations, and permit stipulations, including U.S. Environmental Protection Agency (EPA) label instructions. A PUP must be obtained from BLM prior to herbicide application. A PUP template is contained in **Attachment I**.

If faced with any of the following scenarios, herbicide application will be suspended until such conditions no longer exist:

- Wind velocities in excess of 10 miles per hour (mph) during application of liquid herbicides and 15 mph during application of dry herbicides;
- Snow or ice present on weed foliage; or
- Precipitation is occurring or imminent.

For weed infestations readily accessible and passable by vehicle, vehicle-mounted applicators will be used. Manual application methods will be used in weed occurrences that are relatively small, inaccessible by established road or ROW, or in rough terrain. All herbicide applicators, spreaders, and sprayers would be calibrated before each use to ensure applications rates and procedures are appropriately implemented.

Herbicide transport and handling will follow these methods:

- No herbicides would be stored on site.
- Only the quantity of herbicide expected for each day's use would be transported into the area.
- Herbicide concentrate would be transported in approved containers in a controlled manner so as to prevent spills. Concentrate would be positioned in delivery or work vehicles securely and separated from the driving compartment, food, clothing, and safety equipment.
- Herbicide mixing would be conducted at an off-site location or within a designated controlled space. All mixing would take place over a drip/spill containment device and at a distance more than 200 feet from open or flowing water, wetlands, or other sensitive resources.

- Herbicides would not be applied to areas of open or flowing water, wetlands, or other sensitive resources unless authorized by the BLM.
- All equipment and containers used for herbicide storage, application, and transport would inspected for leaks or damage.
- Emptied herbicide containers would be disposed of in accordance with instructions provided on the label.

3.3 Pesticide Spills and Cleanup

All spills and inadvertent releases of herbicides will be addressed immediately upon detection. Spill response kits approved for the potential spill size would be readily available in herbicide contractor vehicles and in daily on-site herbicide storage areas.

Spill response will vary depending on conditions, including location, amount of spill, area impacted by spill, type of herbicide spilled, and more. For each spill, the following procedures will be implemented.

- Disseminate the appropriate on-site and agency notifications of a spill.
- Secure the affected area barring pedestrian and vehicle traffic.
- All spill response personnel would don the appropriate personal protective equipment (PPE) prior to entering the spill containment area. Personnel, while wearing the appropriate PPE and equipped with the necessary tools and equipment, would stop the herbicide leak or release.
- All materials associated with spill response, including the released herbicide, affected soils and plants, absorptive material, clothing, and PPE would be removed and containerized according to appropriate regulations and procedures.
- All generated spill response containers would be transported, following appropriate regulations, and disposed of legally at an approved disposal facility.

4.0 Monitoring

Monitoring is the repeated collection and assessment of information toward evaluating attainment of a resource management object. If management objectives are not being met, weed control measures will be scrutinized and modified to improve their effectiveness. Effective monitoring will increase the likelihood of timely detection and control of weed occurrences in the Project area.

Weed monitoring will be conducted by qualified biologists and other appropriately trained personnel. All parts of the Project area that are subject to surface disturbance will be monitored for weeds. Monitoring will occur when weed species are most likely to be detected and can be easily identified. New or previously unidentified weed infestations identified during monitoring would be described, their locations recorded using a hand-held GPS unit, and reported to the BLM's weed specialist.

4.1 Ongoing Monitoring

Weed monitoring will occur on an ongoing basis during construction of the Project. Qualified and appropriately trained personnel will use the results of the initial weed inventory to monitor known weed occurrences and would observe activity areas for opportunistic (new or expanding) weed occurrences.

4.2 Post Construction

Post-construction weed monitoring will begin immediately following each completed activity that includes surface disturbance. Weed monitoring will occur at all disturbed sites at least twice a year

(March and September) for an estimated five years or until restoration efforts are deemed complete. A detailed monitoring schedule is provided in the Restoration Plan. The goal of weed monitoring is to ensure no net increase in weed species or overall weed cover relative to the baseline conditions on BLM lands. Identified weed occurrences would be noted and recorded in the same manner as was described for the weed inventory. A monitoring report will be submitted to the BLM's weed specialist. The report would help determine whether success criteria are being met. Adaptive management strategies would be implemented if necessary.

4.3 Monitoring of Known Infestation Areas

Known occurrences of weed infestations will be evaluated on a regular basis. Evaluations will determine if noteworthy changes have occurred at each infestation, particularly if the density of weeds or the area covered by an infestation has changed dramatically. At a minimum, annual monitoring is recommended for each known infestation. A brief summary will be prepared for each annual monitoring effort and would include sufficient detail to allow for an evaluation of the effectiveness of the weed management program, including weed infestation identification, weed monitoring, and weed control.

4.4 Reporting

Monitoring reports will describe results of surveys and evaluate monitoring results to determine if success standards are being met and if not, to determine what adaptive control measures should be implemented and the rationale for the use of these measures and evaluation of the success of these measures. A detailed reporting schedule is contained in the Restoration Plan.

5.0 References

Bryce, S. A., A. J. Woods, J. D. Morefield, J. M. Omernik, T. R. McKay, G. K. Brackley, R. K. Hall, D. K. Higgins, D. C. McMorran, K. E. Vargas, E. B. Petersen, D. C. Zamudio, and J. A. Comstock. 2003. Ecoregions of Nevada (color poster with map, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey (map scale 1:1,350,000). Retrieved on March 18, 2016 from http://newftp.epa.gov/EPADataCommons/ORD/Ecoregions/nv/nv_front.pdf.

Heritage Environmental Consultants. 2021. Arida-Mohave Transmission Line Project, Integrated Vegetation Survey Report. January 2021.

Attachment A Nevada Noxious Weed List

Table A-1 Nevada Noxious Weed List

Common Name	Scientific Name	Category*
African mustard (Sahara mustard)	*Brassica tournefortii*	B
African rue	*Peganum harmala*	A
Austrian fieldcress	*Rorippa austriaca*	A
Black henbane	*Hyoscyamus niger*	A
Camelthorn	*Alhagi maurorum*	A
Canada thistle	*Cirsium arvense*	C
Common crupina	*Crupina vulgaris*	A
Common St. Johnswort	*Hypercum perforatum*	A
Crimson fountaingrass	*Pennisetum setaceum*	A
Dalmatian toadflax	*Linaria dalmatica*	A
Diffuse knapweed	*Centaurea diffusa*	B
Dyer's woad	*Isatis tinctoria*	A
Eurasian watermilfoil	*Myriophyllum spicatum*	A
Giant reed	*Arundo donax*	A
Giant salvinia	*Salvinia molesta*	A
Goatsrue	*Galega officinalis*	A
Hoary cress	*Cardaria draba*	C
Horsenettle	*Solanum carolinense*	B
Houndstongue	*Cynoglossum officinale*	A
Hydrilla	*Hydrilla verticillata*	A
Iberian starthistle	*Centaurea iberica*	A
Johnson grass	*Sorghum halepense*	C
Leafy spurge	*Euphorbia esula*	B
Malta starthistle	*Centaurea melitensis*	A
Mayweed chamomile	*Anthemis cotula*	A
Mediterranean sage	*Salvia aethiopis*	A
Medusahead	*Taeniatherum caput-medusae*	B
Musk thistle	*Carduus nutans*	B
Perennial pepperweed	*Lepidium latifolium*	C
Perennial sowthistle	*Sonchus arvensis*	A
Poison hemlock	*Conium maculatum*	C
Puncture vine	*Tribulus terrestris*	C
Purple loosestrife	*Lythrum salicaria*	A
Purple starthistle	*Centaurea calcitrapa*	A
Rush skeletonweed	*Chondrilla juncea*	A
Russian knapweed	*Acroptilon repens*	B
Salt cedar (tamarisk)	*Tamarix* spp.	C
Scotch thistle	*Onopordum acanthium*	B
Silverleaf nightshade	*Solanum elaegnifolium*	B
Spotted knapweed	*Centaurea biebersteinii*	A

Table A-1 Nevada Noxious Weed List

Common Name	Scientific Name	Category*
Squarrose star knapweed	*Centaurea virgata* var. *squarrosa*	A
Sulfur cinquefoil	*Potentilla recta*	A
Swainsonpea	*Sphaerophysa salsula*	A
Syrian beancaper	*Zygophyllum fabago*	A
Water hemlock	*Cicuta* spp.	C
Yellow starthistle	*Centaurea solsitialis*	A
Yellow toadflax	*Linaria vulgaris*	A

* Category definitions:
A: Weeds not found or limited in distribution throughout the state; actively excluded from the state and actively eradicated where found; control required by the state in all infestations.
B: Weeds established in scattered populations in some counties of the state; actively excluded where possible; control required by the state in areas where populations are not well established or previously unknown to occur.
C: Weeds currently established and generally widespread in many counties of the state; abatement at the discretion of the State Quarantine Officer.

Attachment B Pre-Construction Checklist

Table B-1 Pre-Construction Checklist

Action	Date Conducted	Date Reported to BLM	Check
Inventory and flag major weed populations.			
Pre-treat high-risk sites for weed establishment and spread before implementation.			
Flag and avoid areas with weed species that are not widespread in the work area.			
Locate, flag, and use weed-free project staging areas.			
Identify off-site locations where equipment can be cleaned and post this information in accessible locations.			
Provide pre-work training on invasive plants and prevention BMPs to staff and contractors. Training will include: • Field identification of weeds • Reproductive biology of weeds • Ecological and economic impacts of weeds • Invasive plant prevention BMPs • Inspection and cleaning protocols for vehicles, equipment, tools, and gear • How to report occurrences for invasive plants			
Provide invasive plant identification guides, prevention BMPs, activity, and cleaning and inspection checklists to staff and contractors. Provide these resources in other languages when appropriate. Also have these resources available at highly visible locations.			
Report any new weed species occurrences to the Authorized Officer immediately (within 3 days).			
Report to BLM.			

Attachment C Construction Checklist

Table C-1 Construction Checklist

Action	Date Conducted	Date Reported to BLM	Check
Inspect, document, and monitor weed establishment at access roads, cleaning sites, and all disturbed areas; control infestations to prevent spread within the project area.			
Avoid travel through areas with major weed populations.			
Avoid using water for dust abatement in areas where there are weed infestations. Document where dust abatement occurs.			
Inspect vehicle and equipment undercarriages and tires for mud, dirt, plant materials, and seeds before entering public lands. If vehicle or equipment is not clean, it must be sent to an approved off-site location for cleaning.			
Ensure soil and plant materials are removed from tools, vehicles, equipment, clothing, boots and gear before entering and leaving a worksite.			
Contain and manage water runoff, which may carry soil, seeds and plant material. Silt fences installed along perimeters of worksites can aid in preventing the spread of infested materials.			
Report any new weed species occurrences to the Authorized Officer immediately (within 3 days).			
Report to BLM.			

Attachment D Restoration Checklist

Table D-1 Restoration Checklist

Action	Date Conducted	Date Reported to BLM	Check
Include weed prevention measures, including project inspection and documentation, in restoration plans.			
Submit records of annual monitoring and treatment of weeds to BLM - bond return is dependent on timely reporting.			
Maintain stockpiled, uninfested soils (if relevant) in a weed-free condition.			
Revegetate temporary disturbance areas in a manner that optimizes plant establishment for each specific project site. Revegetation may include topsoil replacement, planting, seeding, and weed-free mulching, as necessary (see restoration plan).			
Inspect seed and straw mulch to be used for site rehabilitation (for wattles, straw bales, etc.) and certify that they are free of weed seed and propagules.			
Use only certified weed-free, native seed for restoration.			
Report any new weed species occurrences to the Authorized Officer immediately (within 3 days).			
Report to BLM.			

Attachment E Operations and Maintenance Checklist

Table E-1 Operations and Maintenance Checklist

Action	Date Conducted	Date Reported to BLM	Check
Conduct regular monitoring and treatment of weeds, as needed.			
Submit records of annual monitoring and treatment of weeds to BLM - bond return is dependent on timely reporting.			
Report any new weed species occurrences to the Authorized Officer immediately (within 3 days).			
Report to BLM.			

Attachment F Weeds and Treatment Methods

Table F-1 Weeds and Treatment Methods

Weed[1]	Methodology[2]	Treatment[3]	Timing[4]

[1] Common and scientific names of weed on or adjacent to site
[2] Chemical, mechanical; eradication, control, etc.
[3] Type of herbicide and adjuvent proposed for treating this weed
[4] What time(s) of year does monitoring / treatment need to take place

Attachment G BLM Approved Herbicides

Table G-1 BLM Approved Herbicides

For use in desert tortoise habitat without additional consultation, April 4, 2019[1]

Active Ingredient	Trade Name	Manufacturer	EPA Reg. Number
Aminopyralid	Milestone	Dow AgroSciences	62719-519
Aminopyralid + Clopyralid	Sendero	Dow AgroSciences	62719-645
Aminopyralid + Metsulfuron methyl	Chaparral	Dow AgroSciences	62719-597
	Opensight	Dow AgroSciences	62719-597
Clopyralid	Alligare Clopyralid 3	Alligare, LLC	81927-14
	CleanSlate	Nufarm Americas Inc.	228-491
	Pyramid R&P	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-94
	Reclaim	Dow AgroSciences	62719-83
	Spur	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-89
	Stinger	Dow AgroSciences	62719-73
	Transline	Dow AgroSciences	62719-259
Glyphosate	Accord Concentrate	Dow AgroSciences	62719-324
	Accord SP	Dow AgroSciences	62719-322
	Accord XRT	Dow AgroSciences	62719-517
	Accord XRT II	Dow AgroSciences	62719-556
	Alligare Dryphosate 75SG	Alligare, LLC	81927-60
	Alligare Glyphosate 4 PLUS	Alligare, LLC	81927-9
	Alligare Glyphosate 5.4	Alligare, LLC	81927-8
	Aqua Neat	Nufarm Americas Inc.	228-365
	Aqua Star	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-59
	Aquamaster	Monsanto	524-343
	AquaPro Aquatic Herbicide	SePRO Corporation	62719-324-67690
	Buccaneer	Tenkoz	55467-10
	Buccaneer Plus	Tenkoz	55467-9
	Credit Xtreme	Nufarm Americas Inc.	71368-81
	Foresters	Nufarm Americas Inc.	228-381
	Gly Star Gold	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-61
	Gly Star Original	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-60
	Gly Star Plus	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-61
	Gly Star Pro	Albaugh, LLC (Albuagh, Inc/Agri Star)	42750-61
	Gly-4	Universal Crop Protection Alliance	42750-60-72693
	Gly-4 Plus	Universal Crop Protection Alliance	72693-1
	Gly-4 Plus	Universal Crop Protection Alliance	42750-61-72693
	GlyphoMate 41	PBI/Gordon Corporation	2217-847
	Glypro	Dow AgroSciences	62719-324
	Glypro Plus	Dow AgroSciences	62719-322
	Honcho	Monsanto	524-445

Table G-1 BLM Approved Herbicides

For use in desert tortoise habitat without additional consultation, April 4, 2019[1]

Active Ingredient	Trade Name	Manufacturer	EPA Reg. Number
	Honcho Plus	Monsanto	524-454
	Imitator Aquatic	Drexel Chemical Company	19713-623
	Imitator DA	Drexel Chemical Company	19713-586
	Imitator Plus	Drexel Chemical Company	19713-526
	KleenUp Pro	Loveland Products, Inc.	34704-890
	Mad Dog Plus	Loveland Products, Inc.	34704-890
	Makaze	Loveland Products, Inc.	34704-890
	Mirage	Loveland Products Inc.	34704-889
	Mirage Herbicide	UAP-Platte Chem. Co.	524-445-34704
	Mirage Plus	Loveland Products Inc.	34704-890
	Rattler	Helena Agri-Enterprises, LLC (Helena Chemical Company)	524-445-5905
	Razor	Nufarm Americas Inc.	228-366
	Razor Pro	Nufarm Americas Inc.	228-366
	Rodeo	Dow AgroSciences	62719-324
	Roundup Custom	Monsanto	524-343
	Roundup Original	Monsanto	524-445
	Roundup Original II	Monsanto	524-454
	Roundup Original II CA	Monsanto	524-475
	Roundup PROMAX	Monsanto	524-579
	Roundup PRO	Monsanto	524-475
	Roundup PRO Concentrate	Monsanto	524-529
	Roundup PRO Dry	Monsanto	524-505
	Showdown	Helena Agri-Enterprises, LLC (Helena Chemical Company)	71368-25-5905
Imazapic	Alligare Panoramic 2SL	Alligare, LLC	66222-141-81927
	Nufarm Imazapic 2SL	Nufarm Americas Inc.	71368-99
	Open Range G	Wilbur-Ellis Co., LLC (Wilbur-Ellis Co.)	2935-557
	Plateau	BASF Corporation	241-365
Imazapyr	Alligare Ecomazapyr 2SL	Alligare, LLC	81927-22
	Alligare Imazapyr 4SL	Alligare, LLC	81927-24
	Alligare Rotary 2 SL	Alligare, LLC	
	Arsenal	BASF Corporation	241-346
	Arsenal Applicators Conc.	BASF Corporation	241-299
	Arsenal PowerLine	BASF Corporation	241-431
	Chopper	BASF Corporation	241-296
	EZ-JECT Copperhead Herbicide Shells	EZ-JECT, Inc.	83220-2
	Habitat	BASF Corporation	241-426

Table G-1 BLM Approved Herbicides

For use in desert tortoise habitat without additional consultation, April 4, 2019[1]

Active Ingredient	Trade Name	Manufacturer	EPA Reg. Number
	Habitat Herbicide	SePRO	241-426-67690
	Polaris	Nufarm Americas Inc.	228-534
	Polaris AC	Nufarm Americas Inc.	241-299-228
	Polaris AC	Nufarm Americas Inc.	228-480
	Polaris AC Complete	Nufarm Americas Inc.	228-570
	Polaris AQ	Nufarm Americas Inc.	241-426-228
	Polaris Herbicide	Nufarm Americas Inc.	241-346-228
	Polaris RR	Nufarm Americas Inc.	241-273-228
	Polaris SP	Nufarm Americas Inc.	228-536
	Polaris SP	Nufarm Americas Inc.	241-296-228
	SSI Maxim Arsenal 0.5G	SSI Maxim Co., Inc.	34913-23
	SSI Maxim Arsenal 5.0 G	SSI Maxim Co., Inc.	34913-24
	Stalker	BASF Corporation	241-398
Imazapyr + Metsulfuron methyl	Lineage Clearstand	Bayer Environmental Science	432-1578
	Lineage Clearstand	DuPont Crop Protection	352-766
Metsulfuron methyl	Alligare MSM 60	Alligare, LLC	81927-7
	AmTide MSM 60DF Herbicide	AmTide, LLC	83851-3
	Cimarron MAX - Part A	Bayer Environmental Science	432-1555
	Cimarron MAX - Part A	DuPont Crop Protection	352-615
	Escort XP	Bayer Environmental Science	432-1549
	Escort XP	DuPont Crop Protection	352-439
	Patriot	Nufarm Americas Inc.	228-391
	PureStand	Nufarm Americas Inc.	71368-38
	Rometsol	Rotam North America, Inc.	831000-2-83979
Rimsulfuron	Alligare Laramie 25DF	Alligare, LLC	81927-57
	Hinge	Rotam Borth America, Inc.	83100-40-83979
	Matrix SG	Dupont Crop Protection	352-768

[1] Typical procedures for weed treatments include pre-treatment surveys for desert tortoise (during active season, if required), development of treatment recommendations, implementation of treatments, and monitoring of treatment areas. Herbicide treatments include the use of backpack sprayers, low pressure truck mounted power sprayers, and other handheld devices by an applicator using a plant targeting application approach. Aerial application of imazapic or rimsulfuron may be utilized to treat annual grass. For all other herbicides, there will be no broadcast applications. Treatment sites may utilize one or all of these methods as needed for the target species.

Attachment H BLM Approved Herbicide Formulations

Table H-1 BLM Approved Herbicide Formulations

For use in desert tortoise habitat without additional consultation, April 4, 2019

Trade Name	Type	Label Rate	Typical Rate
Methylated Spray Oil Concentrate	Methylated seed oil	32 oz/a	16-32 oz/a
Kinetic	Silicone based	64 oz/100 gal	6-32 oz/ 100 gal
Optima	Non-ionic surfactant	128 oz/100 gal	32-128 oz/ 100 gal
Activator 90	Surfactant	16-64 oz/ 100 gal	16-64 oz/ 100 gal
Mark It	Dye	12-32 oz/ 100 gal	16-32 oz/ 100 gal
Red River NIS	Non-ionic surfactant	8-32 oz/ 100 gal	8-32 oz/ 100 gal
Highlight	Dye	N/A	1 quart/ 100 gal
JLB	Crop Oil	N/A	N/A
Induce	Non-ionic surfactant	8-48 oz/ 100 gal	8-48 oz/ 100 gal
Red River 90	Non-ionic surfactant	64 oz/ 100 gal	16-64 oz/ 100 gal
Alligare 90	Non-ionic surfactant	N/A	16-64 oz/ 100 gal
Alligare Surface	Non-ionic surfactant	N/A	16-64 oz/ 100 gal

Attachment I BLM Pesticide Use Proposal Template

UNITED STATE DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

PESTICIDE USE PROPOSAL

STATE: DATE:

COUNTY: PROPOSAL NUMBER:

DISTRICT: NEPA DOC #:

DURATION OF PROPOSAL: DECISION #:

LOCATION:

ORIGINATOR – NAME:

ORIGINATOR – COMPANY:

ORIGINATOR – CONTACT INFORMATION:

PROPOSAL PREPARER - NAME:

PROPOSAL PREPARER – COMPANY:

PROPOSAL PREPARER – CONTACT INFORMATION:

I. APPLICATION INFORMATION

Item #	*Trade Name*	*Common Name*	*EPA Reg. No.*	*Manufacturer*	*Formulation (Liquid or Granular*	*Method of Application*
1						
2						
3						
4						
5						

MAXIMUM RATE OF APPLICATION – AS STATED IN THE NEPA DECISION

Pounds Active Ingredient or Acid Equivalent: _____

MAXIMUM RATE OF APPLICATION – AS STATED ON THE LABEL

Formulated Product: _____

Pounds Active Ingredient or Acid Equivalent: _____

INTENDED RATE OF APPLICATION

Formulated Product: _____

Pounds Active Ingredient or Acid Equivalent: _____

APPLICATION DATE(S): _____

NUMBER OF APPLICATIONS: _____

II. PEST

Specific Pest	*Reason for the Proposed Application*

III. DESIRED RESULTS OF THE APPLICATION – LINKED TO THE OBJECTIVES OF THE APPLICATION

IV. APPLICATION SITE DESCRIPTION

ESTIMATED NUMBER OF ACRES: _____

GENERAL DESCRIPTION: [Describe land type or use, size, stage of growth of target species, soil characteristics, and any additional information that may be important in describing the area to be treated.]

V. SENSITIVE ASPECTS AND PRECAUTIONS [Describe sensitive areas – marsh, endangered, threatened, candidate, and sensitive species habitat – and distance to application site. List measures to be taken to avoid impact to these areas]

VI. NON-TARGET VEGETATION [Describe potential immediate and cumulative impacts to non-target pests in project area as a result of the pesticide application. Identify any planned mitigation measures that will be employed – BE GENERAL, SPECIFICS DISCUSSED IN THE NEPA DOC]

VII. INTEGRATED PEST MANAGEMENT PRACTICES CONSIDERED IN THE OVERALL PROJECT

VIII. SIGNATURES

Pesticide Use Proposal's Originator: _____ Date: _____

Company: _____

Certified Pesticide Applicator: _____ Date: _____

License Number: _____

Certifying Organization: _____

Field Office Pesticide/Noxious Weed Coordinator: _____ Date: _____

Field Office Manager: _____ Date: _____

BLM State Pesticide Coordinator: _____ Date: _____

Deputy State Director: _____ Date: _____

Concur or Approved
Not Concur or Disapproved

Concur or Approved With Modifications

Any changes (modifications) to this proposal by the State Pesticide Coordinator will be listed in an attached memo to the manager requesting approval from the Deputy State Director.

Appendix G – Raven Control Plan

Arida-Mohave Transmission Line Project

Raven Control Plan

October 2021

Table of Contents

Figures

Acronyms and Abbreviations

APLIC	Avian Power Line Interaction Committee
BLM	Bureau of Land Management
kV	kilovolt
MBTA	Migratory Bird Treaty Act
mph	Miles per Hour
Project	Arida-Mohave Transmission Line Project
RCP	Raven Control Plan
Reclamation	Bureau of Reclamation
USFWS	U.S. Fish and Wildlife Service
WEAP	Worker Environmental Awareness Program

1.0 Introduction

1.1 Background

This Raven Control Plan (RCP) lists procedures the proposed Arida-Mohave Transmission Line Project (Project) would follow for the protection of wildlife species, such as the desert tortoise, from predation by ravens that may be attracted to the Project during construction or operation. The RCP is being submitted to the United States Fish and Wildlife Service (USFWS), Bureau of Land Management (BLM), and Bureau of Reclamation (Reclamation) for approval prior to implementation. Once approved, the Applicant will be responsible for implementing the plan for the entire Project. This RCP addresses activities that would occur during construction, operation, maintenance, and decommissioning of the Project regarding control of ravens as a nuisance species.

The Mojave desert tortoise (*Gopherus agassizii*) is a federally-listed threatened species under the Endangered Species Act known to occur in and around the Project area. The Project area is not located in designated Critical Habitat for the desert tortoise. This RCP has been developed as a mitigation measure to reduce the effects of common raven (*Corvus corax*) and other avian predation on the desert tortoise and other native wildlife species that could be caused by increased human presence, the addition of potential roost and nest site structures, and increased availability of water sources during construction.

Avian predators such as the common raven, loggerhead shrike (*Lanius ludovicianus*), and American kestrel (*Falco sparverius*) may be drawn to the Project area due to the increase in potential food sources (such as refuse and garbage cans during construction) and an increase in nesting/perching areas (such as transmission line structures). References to “common ravens” in this RCP should be interpreted to mean common ravens and other avian scavengers. Avian predators drawn to the Project area may forage nearby. An increase in avian predators within a project area is a known secondary negative effect on the desert tortoise (USFWS 2011). Implementing this RCP is intended to reduce this potential effect.

1.2 Purpose of this Plan

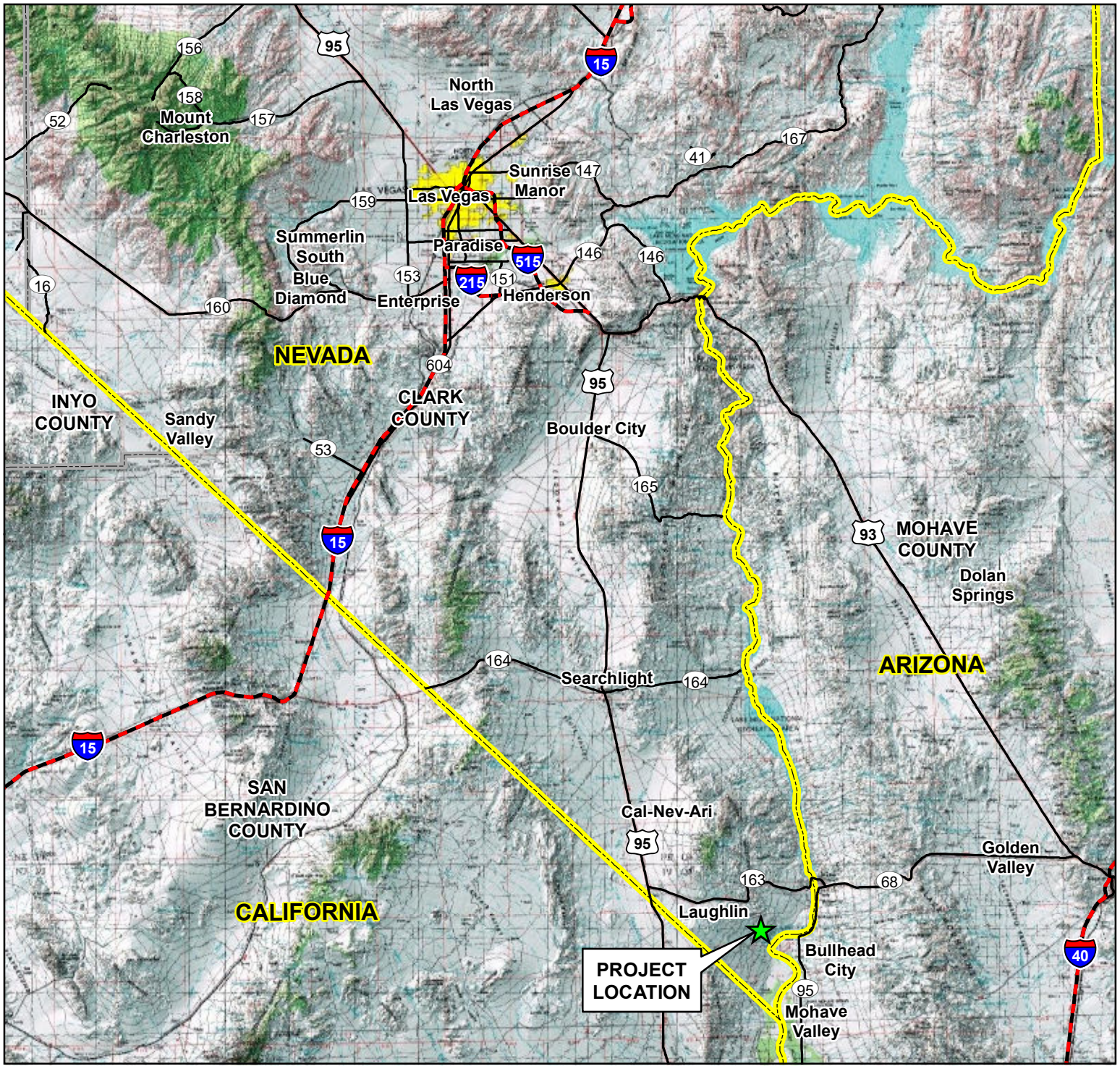
The purpose of this RCP is to offset direct and indirect environmental effects to the desert tortoise and other wildlife from Project development by implementing specific measures designed to limit wildlife attractions and discourage avian and other scavengers that may prey on wildlife (including sensitive species) in and around the Project area. This includes, but is not limited to, collecting and disposing of all litter and trash found or produced at the site, as well as limiting the availability of water during construction. All management personnel will be familiar with the RCP. The Project Applicant and their approved contractors would be responsible for implementing all aspects of this RCP. This RCP is applicable to all phases of the Project.

1.3 Project Description

326FW 8me, LLC (Applicant), a subsidiary of 8minute Solar Energy LLC, is entering into an agreement with the BLM and Reclamation for right-of-way (ROW) grants on federal lands for up to 50 years for the purpose of constructing, operating and maintaining, and eventual decommissioning of a 500-kilovolt (kV) transmission line.

The Project would be an approximately 8.8-mile-long (7.2 miles on federal lands, 1.6 miles on private lands) 500-kV transmission line between the new Arida Substation and the existing Mohave Substation near Laughlin, Nevada. It would be constructed as a single-circuit 500 kilovolt (kV) line or a double-circuit 500kV line.

For about 4.0 miles of its total length and almost half of the portion that would cross federal lands, the Project would parallel the route of the existing Lugo-Mohave 500kV line. The approximately 7.2 miles of federal lands crossed by the line would include approximately 6.7 miles of BLM-managed federal lands and 0.5 miles administered by Reclamation. **Figure 1** shows the general location and **Figure 2** shows the proposed alignment of the Project.



ARIDA-MOHAVE TRANSMISSION LINE

FIGURE 1
PROJECT LOCATION

LEGEND

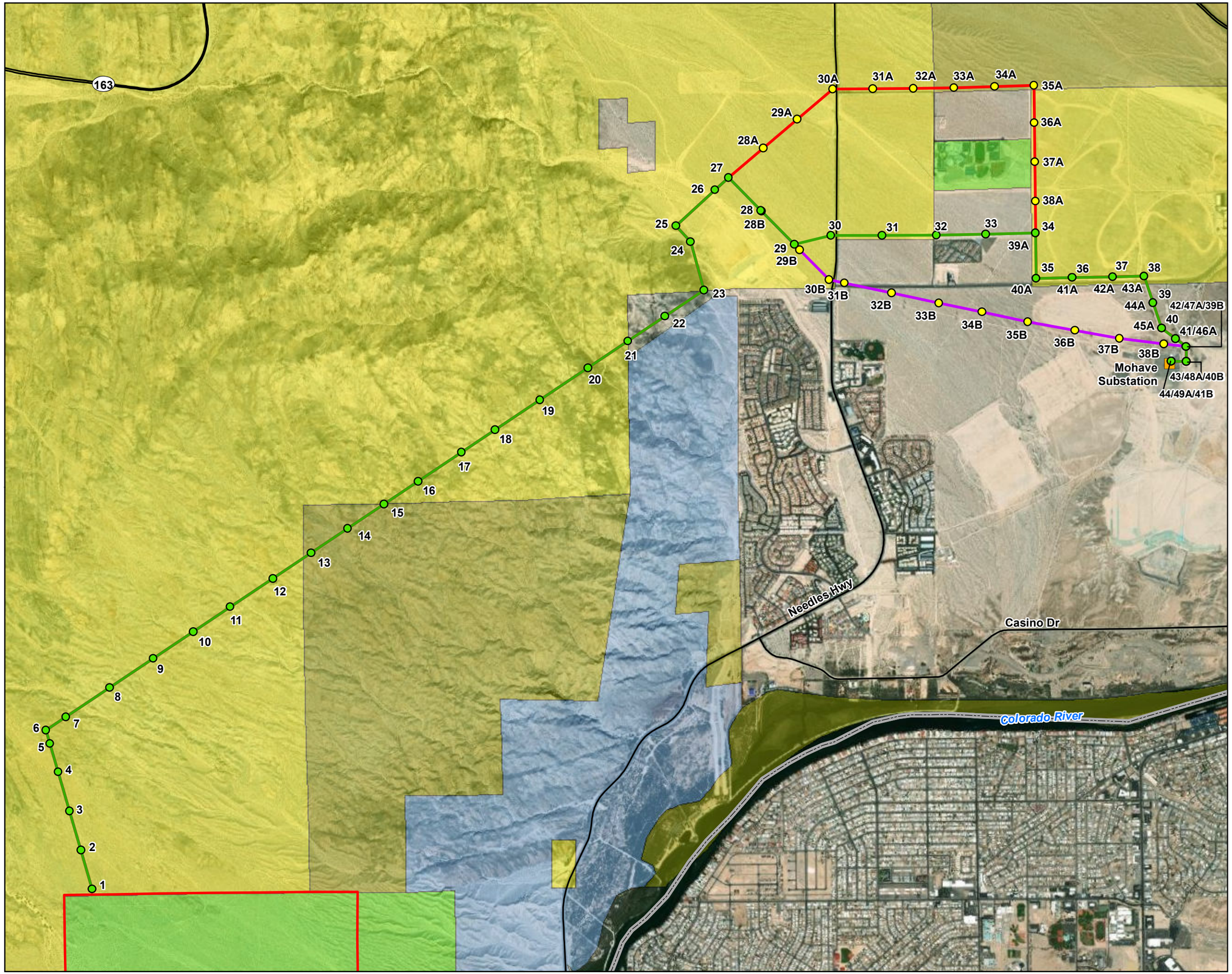
- Interstate
- US Route or State Highway
- State Boundary
- County Boundary

0 5 10 15 20
Miles

Data Sources: ADOT, BLM, CalTrans, ESRI, NDOT, USDA.
F:\\Arida\MXDs\Figure 1-1 Arida-Mohave Transmission Line 061020.mxd 6/10/2020 SJW

ARIDA-MOJAVE TRANSMISSION PROJECT

FIGURE 2
PROJECT OVERVIEW



LEGEND

- Existing Substation
- Major Road
- County Boundary

Proposed Project

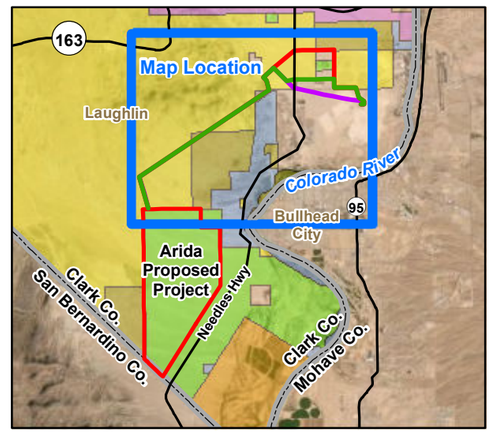
- Proposed Project Structure
- Route Option Structure
- Proposed Project Route
- Route Option A
- Route Option B
- Arida Proposed Project Site

Jurisdictional Land Ownership

- Bureau of Land Management Land
- Bureau of Reclamation Land
- State Land
- County Land
- Private Land (No Shading)

0 0.25 0.5 0.75 1
Miles

Data Sources: BLM, Clark Co., ESRI, NDOT, USDA.
F:\Projects\Arida\MXDs\Fig 2-1 Project Overview 102821.mxd
10/28/2021 SJW



2.0 Raven Management

The raven management measures provided in this section are based in part on the BLM's Common Raven Management Plan for Energy Development (BLM 2014), as well as relevant scientific literature. These measures were designed to discourage the presence of common ravens and other avian scavengers by limiting the availability of anthropogenic (human-caused) food and water resources, as well as roost and nest site opportunities related to the Project. Implementing the raven management measures will be the responsibility of the Project owners and the Environmental and Construction managers. The Worker Environmental Awareness Program (WEAP) will be implemented during construction, O&M, and decommissioning, which will include review of all the raven management measures described below.

2.1 Reduce Access to Anthropogenic Food and Water Resources

Ravens are opportunistic feeders with a varied diet and are known to make long-distance flights of up to 65 kilometers in a single day and several hundred kilometers over multiple days in search of food and water (Engel and Young 1992, Boarman 2003). Currently, garbage associated with existing land uses in the nearby towns of Laughlin, Nevada and Bullhead City, Arizona provides a consistent local source of food for ravens.

Project construction activities are likely to attract ravens. To prevent the addition of food and water subsidies, as well as to avoid attracting ravens to the Project area, the Applicant would implement the measures listed in the remainder of this section.

2.1.1 Garbage Management

All garbage associated with the Project during construction, O&M, and decommissioning will be contained in secure receptacles to prevent the introduction of food resources that could potentially attract or support ravens, coyotes, and other predators or scavengers. Secure, wildlife-proof self-closing waste bins will be used for all organic waste. To reduce the possibility of ravens or other scavengers, such as coyotes, ripping into bags and exposing the garbage, plastic bags containing garbage will not be left out for pickup. All such waste material must be in secure waste bins or dumpsters at all times.

2.1.2 Prohibitions on Intentionally Feeding Ravens

Project personnel will be prohibited from intentionally feeding ravens and other wildlife on or near the Project site. The WEAP will inform Project personnel that they are prohibited from intentionally feeding ravens and will explain why feeding wildlife is detrimental to wildlife, including sensitive species, in and around the Project area.

2.1.3 Limit Availability of Water

Water is a valuable resource in the desert and is very limited, especially during the late spring and summer. In order to ensure that Project activities do not create an unnatural water source, water will be used in a manner that does not result in ponding or puddling, excluding storm water detention/retention basins (should they be needed), which would be designed to eliminate standing water within several days after even the worst expected storm events.

Truck cleaning areas will be kept free of standing water. Water used for dust suppression will be applied at a rate that does not cause ponding or puddling. Personnel will immediately remove (drain or fill) areas of ponding or puddling water.

2.2 Discourage Nesting

To discourage nesting on Project structures, the Applicant will implement the following measures.

- Limiting raptor enhancement measures. Transmission line construction will meet the Avian Power Line Interaction Committee (APLIC) guidelines (APLIC 2006, 2012) that are intended to prevent avian mortality and discourage or eliminate the potential for raptor nests that could also be used by ravens.
- Utility and building structures. Acquire a Migratory Bird Treaty Act (MBTA) Depredation Permit in order to remove any raven nests that are found on Project infrastructure. The USFWS will be consulted on any nest removal.
- Hazing. Unless implemented properly, hazing could have unintended consequences. Therefore, hazing will be implemented only under the direction of USFWS in situations where it is considered the best course of action.
- Structure removal following decommissioning. Elevated structures including utility poles will be removed when the Project is decommissioned.
- Perch deterrents. To reduce perching along segments of the transmission line, perch deterrents may be installed during construction. Anti-perching and nesting devices are important tools for reducing the risk of avian electrocution and keeping the entire electrical system running smoothly. These deterrents also eliminate the use of transmission lines and transmission line towers as hunting perches for raptors, limiting the predation of other avian species or animals that use surrounding vegetation for foraging and nesting. Exact locations of perch deterrent poles will be determined in consultation with wildlife agencies prior to construction of the Project.
- Annual inspections. Inspections of transmission line structures where raptors and corvids might nest will be conducted annually during the breeding season. Inactive nests are not protected by MBTA and their removal will be conducted prior to the next breeding season. Should nesting become a long-term issue, alternate measures to discourage nesting should be implemented. Prior to removing or relocating any nests, facility personnel will consult with USFWS and when necessary, proper permissions from USFWS will be obtained. Nests will be removed for the life of the Project.

2.3 Discourage Roosting

Transmission line structures or substations can provide roosting opportunities in areas where such opportunities are otherwise limited. Elevated roost locations offer ravens a view of their surroundings and prey below. If ravens are strongly attracted to the site by available food or water, it will be difficult to eliminate or control perching on Project structures or nearby existing transmission line towers. Ravens can be very persistent, and even if Project design features effectively discourage perching on the site, ravens attracted to the area could likely find other perching opportunities nearby. Anti-perching activities, therefore, are more focused on preventing activities that attract ravens to the site (Boarman 2002), which include:

- Roost prevention as a contingency. To avoid the introduction of new roost and nest locations for ravens (and consequently non-target avian species), the Applicant will ensure perch enhancements are not installed. The transmission line will be monitored to identify frequently used locations. Contingency measures will be implemented on a case-by-case basis, in consultation with BLM, if it becomes apparent that a particular location is favorable for daytime perches or evening roosting. This could include, for example, installation of triangles, plastic owls, or spikes to discourage nesting, per APLIC Guidelines (APLIC 2006).

- Structure removal. All elevated Project structures will be removed when the Project is decommissioned.
- Limit speeds to under 25 mph. This will reduce the potential for roadkill, which attracts scavengers and increases roosting.

3.0 Monitoring and Reporting

3.1 Monitoring

Raven monitoring will be conducted following the construction of the Project. The objective is to characterize raven presence in and around the Project and to monitor abundance and behavior in those areas over time, as well as to identify local sources of human-created resources and raven activity relative to the Project.

Raven monitoring will consist of driving surveys along roads in and around the Project. Roads will be driven slowly (10 mph or less). Binoculars and spotting scopes will be used to observe raven activity within 2 kilometers of the site. All raven observations will be documented, including date, time, location, habitat, number of individuals, and behavior, as well as locations of occupied and potential nests. Survey visits will occur monthly during the breeding season (February to August) the year following completion of construction for a total of 3 years and once annually thereafter for the duration of Project operation. Each survey visit will last two days. Each day, the survey route will be driven once in the early morning (starting 30 minutes prior to sunrise), a second time at midday (starting between noon and 2 p.m.), and a third time in the evening (completed within one hour following sunset).

If a raven or other avian scavenger nest is located, it will be monitored for signs of desert tortoise predation, if accessible. Desert tortoise mortality monitoring will then occur and will cover a 30-meter radius from the nest location. This area will be walked with 10-meter belt-transects. The location of all desert tortoise carcasses or other sign of predation will be mapped, photographed, and reported to the USFWS within 48 hours if dead tortoises are found. Transects will be walked twice per month for as long as the nest remains active.

Incidental raven or nest sightings may also be provided by biologists conducting clearance surveys, monitoring construction activity, monitoring environmental compliance, translocating desert tortoises, and monitoring translocated desert tortoises. Biologists will be instructed to document raven observations during those surveys. Incidental raven or desert tortoise observations will be included in the monitoring reports.

3.2 Reporting

The Applicant will submit monitoring summary reports to the BLM, Reclamation, and USFWS on an annual basis. The reports will include:

- The number and behavior of observed ravens
- Raven nest and perch locations
- Results of the management techniques
- The observed effectiveness of the techniques in minimizing raven presence
- Suggestions for improving raven management
- Wildlife mortality attributed to predators

Observations of raven predation of desert tortoise (including sign) and occupied raven nests will be reported to the designated contacts at the BLM, Reclamation, and USFWS by an electronic mail message within two days of the observation.

3.3 Adaptive Management

The agencies would review the results of raven control efforts and, in cooperation with the Project owners, determine if changes in the plan are warranted following the first year of commercial operation of the Project. If the agencies determine that the raven management program is effective and the potential for ravens to adversely affect the local wildlife population is less than significant, then raven monitoring and reporting may be discontinued. Components of the RCP, such as preventing access to anthropogenic food and water resources, preventing nesting, and discouraging roosting will remain in effect throughout the lifetime of the Project.

4.0 References

Avian Power Line Interaction Committee. 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, California.

. 2012. *Reducing Avian Collisions with Power Lines: The State of the Art in 2012.* Washington, D.C. and Sacramento, CA: Edison Electric Institute and Avian Power Line Interaction Committee.

Boarman, W. I. 2003. Managing a subsidized predator population: reducing common raven predation on desert tortoises. Environmental Management. 32:205-217.

Boarman, W. I. 2002. Reducing Predation by Common Ravens on Desert Tortoises in the Mojave and Colorado Deserts. Prepared for the United States Bureau of Land Management. United States Geological Survey Western Ecological Research Center. San Diego, California.

Bureau of Land Management. 2019. Southern Nevada Nesting Bird Management Plan 2019. U.S. DOI, BLM Southern Nevada District, Las Vegas, Nevada. 21 pages.

Bureau of Land Management. 2014. Common Raven Management Plan for Energy Development within the BLM Southern Nevada District.

Engel, K. A. and L. S. Young. 1992. Movements and habitat use by Common Ravens from roost sites in southwestern Idaho. Journal of Wildlife Management 56: 596-602.

U.S. Fish and Wildlife Service (USFWS). 2011. *Revised Recovery Plan for the Mojave Population of the Desert Tortoise (Gopherus agassizii).* Region 8, Pacific Southwest Region, USFWS, Sacramento, CA. May 6, 10. https://www.fws.gov/nevada/desert_tortoise/documents/recovery_plan/RRP%20for%20the%20Mojave%20Desert%20Tortoise%20-%20May%202011.pdf

Appendix H – Comments Received and Responses

Comment #	Location	Reviewer Comment	Response
General Public Comment – March 11, 2022			
1	EA – General EA – Appendix D Figures	Our family is familiar with this proposed area because we are off road enthusiasts. Where is the proposed new Arida substation near the California Border? How many miles is this proposed substation from the Aha Macav Road and Needles Highway in Nevada? How close are the proposed transmission lines and proposed Arida substation from the remote petrogliphs approximately 5 miles from Needles Highway and the Dead Mountain restricted area? Is Representative Titus aware of this proposal as she is planning leglislation to designate BLM land in this area as part of a new National Monument? We have observed gopherus agassizii many times while offroading but have also observed endangered big horn sheep in and around the power line roads that exist in the proposed area, west and southwest of the Laughlin neighborhoods. Did the environmental impact survey specifically research the endangered big horn sheep in this area? The map provided by the BLM on the website was helpful but lacked a mileage scale. Would the BLM in the future please include a mileage scale with GPS maps? We would be happy to escort any BLM officials to these areas near the proposed Arida-Mohave Transmission line.	The Arida-Mohave Transmission line originates on Bureau of Land Management (BLM) land north of the Clark County land boundary. The Arida-Mohave Transmission line traverses BLM, Bureau of Reclamation, and private lands for approximately 8.8 miles and terminates at the Mohave Substation. The Arida-Mohave Transmission line is not located within the currently proposed national monument boundary. At its closest point, it is approximately 3 miles from the California border and the Dead Mountain Wilderness. The desert bighorn sheep has been added to the discussion of sensitive species within the EA in Section 3.3. We appreciate your time in providing comment regarding this Project.
General Public Comment – March 12, 2022			
2	EA – General FONSI – General	I fully support this project. The Laughlin township and this project is located close to existing transmission lines and critical switch stations to deliver renewable energy throughout Nevada and the west. The proximity of this project to another 240,000 acres of potential renewable energy lands that are currently located in the proposed Avi Kwa Ame National Monument makes carving out those lands from the monument a critical action. Losing those 240,000 acres for renewable energy generation would be a tragedy.	We appreciate your time in providing comment regarding this Project.
General Public Comment – March 31, 2022			
3	EA – General	I have reviewed this EA and it is generally excellent. Kudos to those who prepared it. While I strongly support the development of solar, wind, and other alternative energy sources, and therefore respect the need for this proposed action, I am concerned that BLM Nevada has not done the type of large-scale planning that occurred years ago with BLM California. This planning took a holistic, comprehensive look at the Mojave desert landscape and proactively determined where such development was or was not appropriate. In stark contrast, BLM Nevada seems to be doing the opposite; letting ad hoc, reactive proposals drive BLM's workload without a reasonable landscape roadmap. I believe that this is not responsible nor consistent with BLM's FLPMA mandates of managing for "sustained yield" of renewable resources and to prevent the "undue degradation" of public resources. Of course, my concern about this lack of appropriate landscape planning cannot be resolved through this current proposed action because it is simply one of those many ad hoc projects.	Thank you for your comment. The EA mentions in Section 3.11 that no desert tortoise individuals or sign were observed during surveys of the proposed line. This is due, in part, to marginal local habitat within the action area supporting low densities of desert tortoise. The terms and conditions included in the biological opinion address specific measures to minimize potential impacts to the species. Adherence to these measures will be

Comment #	Location	Reviewer Comment	Response
		Among many other resources and native species, the ESA threatened Mojave desert tortoises suffer unnecessary adverse impacts in terms of habitat loss, degradation, and fragmentation because of this BLM Nevada failure to proactively plan at a landscape scale. Despite being ESA listed in 1990, these tortoises continue to rapidly decline over most of their historic range. Please see the attachment for further details. Linear projects, like this proposed action, tend to be more harmful to tortoises compared to those in discrete, local venues. I know that BLM always promises in its NEPA documents to fully protect tortoises, but the science proves that BLM is not keeping these promises because the tortoise populations in their care keep spiraling downward. This status quo is broken and must change. Please see the other attachment related to needed BLM cultural reforms. I hope that my input is helpful. Thank you very much for your consideration.	mandatory throughout the duration of the ROW. We appreciate your time in providing comment regarding this Project.
General Public Comment – March 31, 2022 (Letter to Secretary Haaland; DraftEA-1-500249597.pdf)			
4		General comment and recommendations for BLM	Comment noted.
Nevada Division of Water Resources – March 16, 2022 (E2022-307 DWR Comment)			
5	EA – General	___No comment on this project __X__Proposal supported as written	We appreciate your time in providing comment regarding this Project.
6	EA – General	• Compliance with Nevada water law is required. • All waters of the State belong to the public and may be appropriated for beneficial use pursuant to the provisions of NRS Chapters 533 and 534 and not otherwise.	The Project will follow all Nevada water laws.
7	EA – Water for Construction Projects	Ensure that any water used on a project for any manner of use shall be provided by an established utility or under permit or temporary change application or waiver issued by the State Engineer's Office with a manner of use acceptable for suggested project's water needs.	The Project will follow all Nevada water laws.
Nevada State Historic Preservation Office – March 30, 2022 (E2022-307 SHPO Comment)			
8	EA – Cultural Resources, Page 29-30	BLM's consultation with the Nevada State Historic Preservation Office (SHPO) is incomplete. The discussion on pages 29-30 concerning the effect of the undertaking on historic properties does not include a completed consultation with the SHPO. The consultation should either be completed and our questions of December 21, 2021 addressed or Draft EA be updated to inform the public that consultation is continuing.	The BLM has finalized consultation with the SHPO (letter dated 07/22/22) regarding the effects on historic properties. The SHPO and BLM have concurred that this undertaking will result in **No Adverse Effect** on historic properties. The EA has been updated reflecting the finalized consultation.
Nevada Department of Wildlife – March 31, 2022 (E2022-307 NDOW Comment)			
9	EA – General	<u>Page 2, Conformance Summary, 3rd line:</u> It is unclear why endangered and threatened species, both of which are under the umbrella of Special Status Species as described in BLM Manual 6840 are emphasized.	USFWS requires that all threatened an endangered species, including the desert tortoise, are emphasized/analyzed for projects that warrant "May Affect" determinations for the species in question. Projects that impact >20 acres, like this one, automatically qualify for direct consultation with USFWS to further analyze and address potential impacts to the desert tortoise.
10		<u>Page 2, Other Federal, State, and Local Agency Involvement:</u> It is unclear which NDOW office was contacted as stated later in the Summary of Consultation on EA page 44.	NDOW was not contacted for consultation purposes for this project and the document has been revised.

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11		Page 4, Proposed Action, 1st paragraph, 2nd line: The line reads the ROW application is for approximately 6.0 miles across federal lands whereas the following bulleted descriptions collectively tabulate to approximately 7.3 miles and previously on page 1 in Purpose and Need section, 7.2 miles are stated.	The total transmission line is approximately 8.8 miles. The federal lands crossed is approximately 7.2 miles (6.7 miles on BLM and 0.5 miles on Bureau of Reclamation). The document will be updated as needed to consistently reflect approximately 8.8 miles total and approximately 7.2 miles federal lands.
12		Page 4, Proposed Action, 2nd bullet: Segment paralleling ROW for existing Lugo-Mohave 500kV Line on SCE's co-managed land would parallel a line that has an ~170' ROW. While we admit we are not engineers is this enough of a buffer to fully encapsulate the proposed transmission line, considering it has a 200' ROW for the rest of its course on BLM and Reclamation land where the line would not share the ROW with an existing line?	The proposed 200' ROW for the proposed line would abut the 170' ROW for the existing line. The two lines would not share ROW. Coordination with SCE engineers has occurred for appropriate distances between transmission lines.
13		Page 4, Proposed Action, 3rd bullet: The SCE's approved Eldorado-Mohave segment of the recent Eldorado-Lugo-Mohave Series Capacitor project is potentially crossed by the proposed Arida-Mohave Transmission alignment from roughly poles 23 to 27 (Figure 2-1). It would be helpful if additional narrative assisted in better understanding of the relationship between the two projects.	The Arida-Mohave Transmission line is not associated with the Eldorado-Lugo-Mohave Series Capacitor. The transmission lines will be parallel for a large portion of the proposed Arida-Mohave Transmission line route and the Arida-Mohave line will cross the SCE line. Crossings of this line and other utility lines would be coordinated with each individual utility.
14		Page 6, General Facility Description, Design, and Operation, Transmission Line: The description of the structure type used is a "500kV line and would use H-frame or single steel pole structures." We appreciate avoidance of using lattice-style structures. However, in our experience, non-vertical features of structures, whether H-frame or monopole design would have been known to support nesting ravens and provide perch sites for raptorial birds. What deterrents would be in place to preclude raven and raptor use? In referring to Figures 2-2 and 2-3, a possible deterrent design may be the inverted Y affixed to cross members of the guyed-V structures used on NV Energy's ON Line project. We will be happy to further discuss this deterrent as well as others with the BLM and 326FW 8me LLC as this project progresses.	The mitigation measures identified in the Raven Control Plan Sections 4.4.1 - 4.4.3 (appended to the EA as Appendix G) would be implemented as needed and would include deterrents based upon and consistent with the best available science.
15		Page 9, Pre-Construction Surveys and Standards, Environmental Pre-Construction Surveys: The beginning two paragraphs seem duplicative.	Comment noted. Edits have been made to clarify these paragraphs.
16		Page 31, Section 3.3, BLM Sensitive Wildlife Species, 1st paragraph: BLM sensitive species potentially frequenting or impacted by the Project is not adequately presented. Our records indicated analyses may be warranted for the following known to occur or potential to frequent the project area. This list includes: western burrowing owl, bald eagle, Bendire's thrasher, Crissal thrasher, golden eagle, peregrine falcon, big brown bat, big free-tailed bat, Nelson (desert) bighorn sheep, Brazilian free-tailed bat, California leaf-nosed bat, California myotis, canyon bat, cave mytosis, fringed mytosis, hoary bat, little brown bat, long-eared myotis, long-legged myotis, pallid bat, spotted bat, Townsend's big-eared bat, western small-footed myotis, Yuma myotis, desert horned lizard, desert iguana, desert rosy boa, ring-necked snake, and sensitive species identified in Section 3.12 on EA page 42. Additionally, referring to the 1998 Resource Management Plan for a complete list may not account for use of the current list of BLM sensitive species as cited on EA page 45.	It has been determined that additional analysis for and minimization measures specific to the species listed within this comment would not significantly alter the footprint of the proposed action. Due the low acreage that would be directly impacted by the action within the ROW, mitigation and minimization measures implemented for desert tortoise and those listed within the Raven Control Plan will serve as an umbrella of protections for sensitive species outside of the original analysis within the EA.
17		Page 51, Appendix A, Fish and Wildlife, Excluding Federally Listed Species: Item 11.3 – Thank you for including this as a standard stipulation and standard, although the wording suggests referral to a past version of NDOW's Gila monster guidance that has since been updated; the present version is attached. Suggest the sentence to read, "If any Gila monsters are encountered during project construction, they must be reported immediately to the Nevada Department of Wildlife at (702) 486-5127."	Thank you for your comment. The suggested language is what is included in Item 11.3.

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18		Appendix E – Site Restoration Plan: We are pleased to see the site restoration plan included, although it looks like a draft in progress. Perhaps out of the scope of the Project EA, we are very much interested in better understanding when certain treatments like mowing are favored over others described on page 5, and circumstances under which cactus and yucca will be "cut or ground down to 18 inches." When is it possible to salvage cacti and yucca instead of cutting or grinding?	The definitions on page 5 are general BLM standards. Mowing would not be directly applicable to a transmission line project such as the proposed Project. However, the current restoration plan format encourages proponents to limit grading and clearing to the extent feasible, so overland travel could be used in some project components (for example, line tensioning or pull sites).
Desert Tortoise Council – March 29, 2022			
19	EA – General	We appreciate this opportunity to provide comments on the above-referenced project. Given the location of the proposed project in habitats likely occupied by Mojave desert tortoise (*Gopherus agassizii*) (synonymous with Agassiz's desert tortoise), our comments pertain to enhancing protection of this species during activities funded, authorized, or carried out by the Bureau of Land Management (BLM), which we assume will be added to the Decision Record for this project as needed. Please accept, carefully review, and include in the relevant project file the Council's following comments and attachments for the proposed project. Also, please note that BLM failed to inform us of this project despite a specific request to be considered an Affected Interest[1] ([1]https://www.dropbox.com/s/xx5wmxcae1c1cju/BLM%20Southern%20Nevada%20District%20Managers%20Council%20as%20an%20Affected%20Interest.11-7-2019.pdf?dl=0); rather we were informed of this project by a third party, not the BLM. Mojave desert tortoise is now on the list of the world's most endangered tortoises and freshwater turtles. It is in the top 50 species. The International Union for Conservation of Nature's (IUCN) Species Survival Commission, Tortoise and Freshwater Turtle Specialist Group, now considers Mojave desert tortoise to be Critically Endangered (Berry et al. 2021). As such, it is a "species that possess an extremely high risk of extinction as a result of rapid population declines of 80 to more than 90 percent over the previous 10 years (or three generations), a current population size of fewer than 50 individuals, or other factors." It is one of three turtle and tortoise species in the United States to be critically endangered. Unless otherwise noted, the referenced page numbers are from the undated Draft Environmental Assessment (DEA), titled "Arida – Mohave Transmission Line, Case File Number N-99777, 326FW 8me LLC." The project is described on page 1 as follows: "Proposed Action, which consists of an approximately 8.8-mile 500kV transmission line between the proposed Arida Substation and the existing Mohave Substation near Laughlin, Nevada referred to as the Arida – Mohave Transmission Line (A-M Transmission Line, A-M Project, or Project). 326FW 8me LLC, a subsidiary of 8minute Solar Energy (the Applicant), has applied for a right-of-way (ROW) for the approximately 7.2 miles of the Project that would cross federal land. Approximately 6.7 miles would cross federal lands managed by the Bureau of Land Management (BLM) and approximately 0.5 miles would cross federal lands managed by the Bureau of Reclamation (Reclamation)."	Thank you for your comment.
20		• On page 47, we note that "Standard Stipulations and Mitigation Measures" are listed but the document does not reference the source of these protective measures. We note with regards to the stipulation 2.1.1., "A speed limit of **25** miles per hour shall be required for all vehicles travelling on existing roads [emphasis added]," we often see 15 miles per hour as a standard BLM stipulation, and for this project recommend that, unless otherwise posted, the speed limit on unimproved roads shall be 15 miles per hour. • On page 47, stipulation 2.2. states that "All drivers must check underneath vehicles and equipment before moving to ensure no tortoise has taken cover underneath parked vehicles," but fails to give direction to drivers if tortoises are found. Therefore, we recommend that the following wording, or something similar, be added to the stipulation: "Tortoises are not to be handled by unauthorized construction personnel, so if a tortoise is found, the vehicle should remain motionless until an authorized biologist arrives to assess the situation and remove the tortoise(s) from harm's way." With regards to these stipulations, we are a bit concerned that the only protective measure referenced in this section is the speed limit given above. Although the terms and conditions are referenced as being in the attached Biological Opinion, someone reading the text of the DEA may get the wrong impression that these are the only stipulations. Standard stipulations include tortoise awareness programs for all construction workers; staking all impact areas and confining impacts to the staked areas; prohibitions against littering and proper disposal of trash to prevent subsidies to ravens and other tortoise predators; prohibitions	The EA mentions in Section 3.11 that no desert tortoise individuals or sign were observed during surveys of the proposed line. This is due, in part, to marginal local habitat within the action area supporting low densities of desert tortoise. The terms and conditions included in the biological opinion address specific measures to minimize potential impacts to the species. Adherence to these measures will be mandatory throughout the duration of the ROW.

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		against pets and firearms on the worksite; prohibitions against handling tortoises, and procedures identified when tortoises are encountered; procedures for reporting injured and dead tortoises; etc. We recommend that this section be substantially expanded to include these measures so the reader, perhaps including the proponent, better understands the full scope of protective measures. We note that some of these measures do appear in Appendix B but feel that it would be appropriate to emphasize them here as well.	The measures on page 47 in Appendix A are BLM's standard stipulations. These measures have been revised and are consistent with current BLM guidance. Additional measures for the desert tortoise are included in the applicant proposed measures in Appendix B. The specific stipulations for the Project will be included within the EA as part of the final BLM right-of-way grant following the conclusion of formal consultation with the USFWS.
21		Among the Applicant Proposed Mitigation and Best Management Practices (BMPs) reported on page 57, we see the following: "Biological monitors or biologists approved to handle and relocate tortoises will be present to relocate all tortoises in harm's way to outside the permitted ROW." We ask that the BMP clarify whether all tortoises must be relocated to BLM lands. It is our understanding that tortoises cannot be relocated to private lands where the project is funded, authorized, or carried out by the BLM. Yet, there may be extensive stretches of the project where only private lands occur, so please clarify this issue for the benefit of the proponent. We ask that the following BMP on page 57 be modified with the bold wording as follows: "Biological monitors or biologists approved to handle and relocate tortoises will be present **during all authorized activities** to relocate all tortoises in harm's way to outside the permitted ROW." As given above, it is also important to clarify if tortoises can be relocated to private lands or must be restricted to BLM lands.	Clarification has been added to this measure to indicate tortoises would be relocated to federal land.
22		With regards to the following BMP on page 57, "Revegetation of areas disturbed by construction activities would be done in accordance with the Site Reclamation Plan, and seed mixes will be composed of native plant species," we offer in the footnote a recent document funded by the Council (Abella and Berry 2016[2]) to help inform the proponent of available restoration techniques in arid habitats occupied by tortoises. [2]https://www.dropbox.com/s/nx1b5m2b5ehya12/%23Abella%20and%20Berry%202016.pdf?dl=0	Thank you for providing reference to this document.
23		Also on page 57, we read: "The Applicant will implement the Raven Management Plan (BLM 2014) developed by the BLM for portions of the Proposed Project on BLM-administered lands." We note that for this and all other protective measures, the proponent cannot restrict implementing measures to BLM-managed lands, only. Where the BLM funds, authorizes, or carries out any portion of a given project, the *entire* project becomes "federalized," and all terms and conditions identified in the Biological Opinion must be implemented throughout the project, including private lands. So, this sentence needs to read (change appears in italics): "The Applicant will implement the Raven Management Plan (BLM 2014) developed by the BLM *in all project areas*." The second sentence of this same BMP reads: "The Applicant will inspect transmission structures annually for nesting ravens and other predatory birds and report observations of nests to the BLM and the Service." Common ravens are likely to nest in the area from about February through August. This BMP needs to clarify the timing of the surveys; annual inspections in November, for example, may find nests but that would be too late to make a difference. These inspections need to occur during the raven nesting period and the proponent needs to secure a depredation permit that will allow them to remove nests, including those that contain eggs. Although surveys during the breeding season for the first three years is identified in the raven management plan given in Appendix G, it is unclear that annual surveys after the third year will also be performed during the breeding season, so please clarify. We request that annual surveys for nesting ravens be conducted beyond the first three years of the project, and suggest this effort be combined with the annual maintenance survey of the transmission line and scheduled during the raven nesting season. Reporting nests to the agencies without removing the nests seems ineffectual, and may result in sufficient delays that the young ravens will have fledged by the time permission to remove the nests is acquired. Consequently, the BMP should require that when nests are found, they should be removed.	The raven control measures are described in more detail in the Raven Control Plan appended to the EA (Appendix G).

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24		We appreciate this opportunity to provide comments on this project and trust they will help protect tortoises during any resulting authorized activities. Herein, we reiterate that the Desert Tortoise Council wants to be identified as an Affected Interest for this and all other projects funded, authorized, or carried out by the BLM that may affect species of desert tortoises, and that any subsequent environmental documentation for this project is provided to us at the contact information listed above. Additionally, we ask that you respond in an email that you have received this comment letter so we can be sure our concerns have been registered with the appropriate personnel and office for this project.	We appreciate your time in providing comment regarding this Project.
Basin and Range Watch – March 30, 2022			
25		**Purpose and Need:** The project should consider limiting this line to a 230 kV project in order to reduce connected actions such as a proliferation of utility-scale solar projects that do harm to recreation and conservation goals on public lands.	We appreciate your time in providing comment regarding this Project. Any future projects that would require use of the 500kV line would require separate NEPA analysis.
26		**Alternatives based on Visual Class:** An alternative should be considered for a smaller transmission line. It would appear that a 230 kV line could accommodate this project. The National Environmental Policy Act directs the BLM to *"study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources;…"* (NEPA Sec102(2)(E)) The project area is designated as a Visual Resource Class III (VRM Class III): *The **VRM Class III Objective**: To partially retain the existing character of the landscape. Allowed Level of Change: The level of change to the characteristic landscape should be moderate. Management activities may attract attention, but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.* This project will be visible from the Needles Highway, the Dead Mountains Wilderness Area in adjacent California and the Laughlin Special Recreation Management Area. In 2018, the Bureau of Land Management cancelled the revision of the Southern Nevada Resource Management Plan. An RMP revision could at least consider upgrading the VRM Class to VRM Class II. The objective for VRM Class II is to: *retain the existing character of the landscape. Allowed Level of Change: The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.* The BLM failed to consider an alternative that would bury parts of this transmission line to maintain the visual landscape.	The Arida-Mohave Transmission line will parallel an existing 500kV transmission line for much of the proposed route. A smaller line would follow the same route but it is likely that a smaller line would require additional poles, which would result in an increase in disturbance.
27		The BLM should consider am alternative to bury part of this transmission line on the 3 miles that would be topographically feasible to do so. There are already roads that previously disturbed the site. Under the Federal Land Management Policy Act (FLPMA) Section 103, Item 8: *"BLM (8) the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use;"* Burying this line will cost the applicant more money, but that is a reasonable expense to protect public land resources. It would also reduce wildfire risk caused by transmission failures. Wildfires have been documented in the area. There are 500 kV lines that have been buried as referenced in the below article: Engineering a 500-kV Underground System | T&D World (tdworld.com)	The line is being built in an area with multiple existing overhead 500kV lines. Undergrounding the line would not be appropriate where suggested under or through the stormwater detention basin managed by Clark County Flood Control District.

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28		**Mitigation measures:** *3.1.7 Biocrust Salvage - Significant stands of biological crust must be salvaged either by hand or with very small equipment (small backhoe or similar). The crust would be placed dry in plastic buckets and kept dry until ready to place back on the soil surface. It is not anticipated that biocrust would be encountered within disturbance areas. Biocrust surveys would be conducted concurrently with cacti and yucca surveys prior to construction.* We are not aware of any long-term proven successful transplantation of biological soil crust.	Research into techniques to successful salvage and store biocrust are ongoing, and current best management practices are being used for salvage and storage. Biocrust salvage will only be used in temporary disturbance areas, therefore, storage should be short-term and is expected, at minimum, to reestablish soil with more organic material on the surface of temporarily disturbed areas.
29		**Subsidized Predators:** The EA fails to mention how long 8minute Energy would be required to monitor raven use. This monitoring should go on for the life of the project. Equally, the entire transmission line should be monitored throughout the operation for bird mortality. How will any raven nests be removed from transmission infrastructure?	The Raven Control Plan is located in Appendix G. There are methods identified for raven management in Section 2.0 and Section 3.0 identifies the monitoring and reporting protocols. Monitoring will occur for 3 years following completion of construction.
30		**Migratory Birds:** The Environmental Assessment should address the possibility of migrating songbirds and waterbirds possibly colliding with the transmission line. The project is not far from the Colorado River and has the potential to harm many species. Some endangered birds such as the Southwestern willow flycatcher could be harmed.	The standard stipulations in Appendix A and design features in Appendix B address transmission line and tower design to meet the Avian Power Line Interaction Committee (APLIC) practices and guidance.
31		**Bald and Golden Eagles:** Southern Nevada has a high density of nesting golden eagles in mountain ranges in the desert, and bald eagles forage along the Colorado River. Nesting surveys should be undertaken, and specific mitigation for collision mortality should be developed. The EA should provide more information on potential impacts to bald and golden eagles. What were the results of any surveys that were conducted?	The standard stipulations in Appendix A and design features in Appendix B address transmission line and tower design to meet the Avian Power Line Interaction Committee (APLIC) practices and guidance. Information on Bald and Golden eagles has been added to the EA in Section 3.3.
32		**Wildlife:** The EA fails to mention impacts to desert kit fox, American badger and desert bighorn sheep. There should be more information on how these and other species would be impacted.	Information on these species has been added to the EA.
33		Desert Tortoise: The EA fails to discuss the density of desert tortoise and results of surveys. There is no Fish and Wildlife Service biological opinion referenced or posted on the eplanning site. The same really goes for all species.	The EA states that surveys for desert tortoise were conducted along the transmission line route and that no desert tortoise sign or live individuals were observed. A separate Biological Opinion was not prepared – as mentioned in the EA, the Project on federal lands will comply with measures identified in the BLM's Programmatic Biological Opinion (PBO) and the portion of the Project on private lands will comply with measures identified in the Clark County Multi-Species Habitat Conservation Plan (MSHCP) to minimize effects on desert tortoise and other sensitive species.

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34		Gila monsters are likely to be present in this area. A Gila Monster Relocation Protocol should be developed so that any disturbed individuals are not put in harms way. Excavation activities may dig up a Gila monster in its burrow, as these species spend 90% of their time underground. Proper relocation methods should be followed, in consultation with the Nevada Division of Wildlife.	The EA states that NDOW protocols for Gila monster would be followed. Appendix A Item 11.3 indicates: "If any Gila monsters are encountered during project construction, they must be reported immediately to the Nevada Department of Wildlife at (702) 486-5127."
35		**Deferred Plans:** The Weed management Plan, Raven Management Plan, Decommissioning Plan, Site Reclamation Plan, Traffic management Plan, Hazardous Waste Management Plan, and Emergency Response Plan should be undertaken now before the final decision, so that the public may review these.	The weed, raven, and restoration plans have been developed and are appended to the EA (Appendices E, F, and G). Other plans will be developed by the construction contractor based on the final design and schedule.
36		**Conclusion:** The transmission project is very large for the need of this project and a smaller transmission line alternative should be considered.	The Arida-Mohave Transmission line will parallel an existing 500kV transmission line for much of the proposed route. A smaller line would follow the same route, but it is likely that a smaller line would require additional poles, which would result in an increase in disturbance.
National Parks Conservation Association – March 31, 2022			
37	EA – Chapter 1, page 1 Chapter 2, page 4	On behalf of the National Parks Conservation Association, I write to provide comments on the proposed Arida-Mojave Transmission Line Project (Project). The BLM's press release on this Project states that the purpose of the Project is to deliver renewable energy from the "future Arida Solar Project located on land owned by Clark County": "The proposed transmission line would deliver renewable energy from the future Arida Solar Project located on land owned by Clark County and would parallel portions of the existing Lugo-Mohave 500kV Line to the regional electric grid via its interconnection to the Mohave Substation on private land managed by Southern California Edison near Laughlin." However, the FONSI document, in at least two places (pasted below), references the Project being potentially related to "future projects" by 8minute Solar Energy, expanding the scope of the Project and making it inconsistent with what the Project was advertised as: "The Proposed Action would deliver renewable energy from the proposed Arida Solar Project located on lands owned and managed by Clark County to the regional electric grid via its interconnection to the Mohave Substation. The Proposed Action could also interconnect renewable energy from future projects developed by 8minute Solar Energy to the regional electric grid." page 1 "The No Action Alternative would result in renewable energy from the proposed Arida Solar Project and possibly other future projects developed by 8minute Solar Energy not being delivered to the regional electric grid at the Mohave Substation." page 4 For numerous reasons that many organizations (and tribes) previously communicated to BLM regarding the inappropriateness of the 8minute Solar Energy's recently proposed "Angora" solar project, which would not be on Clark County lands but instead on BLM and Bureau of Reclamation lands, we write to urge the BLM focus the scope of the transmission line to delivering power from Clark County lands. BLM could do this by clarifying that the transmission line could support "future projects located on County Lands," or by removing the references to "future projects." As many organizations and tribes, including the Fort Mojave, Inter-tribal Association of Arizona, and Inter-tribal Council of Nevada, have stated to BLM in letters and resolutions, industrial development on federal BLM and BOR lands within the proposed Avi Kwa Ame National Monument boundary would be	We appreciate your time in providing comment regarding this Project. Language in the Environmental Assessment has been revised.

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		highly inappropriate. As the BLM likely knows, the national monument boundary was modified through negotiations involving the Fort Mojave Indian Tribe, Laughlin Town Advisory Board, and many others and the resulting compromise and agreement that allowed the Arida-Mojave Transmission Line Project and Arida Solar Project to advance without any overlap of the monument. In other words, a compromise was reached that supports solar development (Arida and the transmission line) and specifically benefits 8minute Solar Energy Company. In disregard to this compromise, the Company subsequently submitted an application to the BLM for the proposed "Angora" Solar Project, which the company unilaterally decided to site within the monument boundary and which would use this Arida-Mojave Transmission Line. That attempt to subvert a compromise and agreement is yet another reason why BLM should focus the Project to only delivering power from projects developed on County lands, consistent with the BLM's press release on this matter. Thank you for your consideration.	