



McDONALD·CARANO·WILSON^{LLP}

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Reply to: Las Vegas

March 25, 2016

Breanne Potter
Assistant Commission Secretary
Public Utilities Commission of Nevada
1150 East Williams Street
Carson City, Nevada 89701

Re: Docket No. 14-05006 - Application of ARES Nevada, LLC for a permit to construct two 230kV transmission facilities and ancillary facilities consisting of an Advanced Rail Storage Regulation Energy Management Project and other appurtenant electrical facilities, under the provisions of the Utility Environmental Protection Act

Dear Ms. Potter:

Enclosed for filing please find the application of ARES Nevada, LLC (“ARES”) for a permit to construct two 230kV transmission facilities and ancillary facilities consisting of an Advanced Rail Storage Regulation Energy Management Project and other appurtenant electrical facilities, under the provisions of the Utility Environmental Protection Act and pursuant to NRS 704.870. The documents comprising the application include:

1. PUCN Draft Notice;
2. Application for a permit to construct the facilities described above; and
3. Exhibits A-L, including the Public Notice and Proof of Publication.

Should you have any questions or concerns regarding this submission, please contact me directly at 702-873-4100.

Sincerely,

McDONALD·CARANO·WILSON^{LLP}


Curt R. Ledford

CRL/lj; enclosure

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PUBLIC UTILITIES COMMISSION OF NEVADA
DRAFT NOTICE
(Applications, Tariff Filings, Complaints, and Petitions)

Pursuant to Nevada Administrative Code (“NAC”) 703.162, the Commission requires that a draft notice be included with all applications, tariff filings, complaints and petitions. Please complete and include **ONE COPY** of this form with your filing. (Completion of this form may require the use of more than one page.)

A title that generally describes the relief requested (see NAC 703.160(4)(a)):

Application of ARES Nevada, LLC for authority under the provisions of the Utility Environmental Protection Act for a permit to construct two (2) 230 KV transmission lines and ancillary facilities comprising an Advanced Rail Energy Storage Regulation Energy Management facility and appurtenant substations and related electrical facilities within unincorporated counties of Nye and Clark, Nevada.

The name of the applicant, complainant, petitioner or the name of the agent for the applicant, complainant or petitioner (see NAC 703.160(4)(b)):

ARES Nevada, LLC

A brief description of the purpose of the filing or proceeding, including, without limitation, a clear and concise introductory statement that summarizes the relief requested or the type of proceeding scheduled **AND** the effect of the relief or proceeding upon consumers (see NAC 703.160(4)(c)):

See Public Notice of Application at Exhibit G.

A statement indicating whether a consumer session is required to be held pursuant to Nevada Revised Statute (“NRS”) 704.069(1)¹:

A consumer session is not required.

If the draft notice pertains to a tariff filing, please include the tariff number **AND** the section number(s) or schedule number(s) being revised.

N/A

¹ NRS 704.069 states in pertinent part:

1. The Commission shall conduct a consumer session to solicit comments from the public in any matter pending before the Commission pursuant to NRS 704.061 to 704.110 inclusive, in which:
 - (a) A public utility has filed a general rate application, an application to recover the increased cost of purchased fuel, purchased power, or natural gas purchased for resale or an application to clear its deferred accounts; and
 - (b) The changes proposed in the application will result in an increase in annual gross operating revenue, as certified by the applicant, in an amount that will exceed \$50,000 or 10 percent of the applicant’s annual gross operating revenue, whichever is less.

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BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

APPLICATION OF ARES NEVADA, LLC FOR A
PERMIT TO CONSTRUCT TWO 230 KV
TRANSMISSION FACILITIES AND ANCILLARY
FACILITIES CONSISTING OF AN ADVANCED
RAIL STORAGE REGULATION ENERGY
MANAGEMENT PROJECT AND OTHER
APPURTENANT ELECTRICAL FACILITIES,
UNDER THE PROVISIONS OF THE UTILITY
ENVIRONMENTAL PROTECTION ACT

Docket No. 14-05006

**APPLICATION OF ARES NEVADA, LLC FOR A PERMIT TO CONSTRUCT TWO 230
KV TRANSMISSION FACILITIES AND ANCILLARY FACILITIES CONSISTING OF
AN ADVANCED RAIL STORAGE REGULATION ENERGY MANAGEMENT
PROJECT AND OTHER APPURTENANT ELECTRICAL FACILITIES, UNDER THE
PROVISIONS OF THE UTILITY ENVIRONMENTAL PROTECTION ACT**

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 residents of this state if the proposed utility facility is constructed (NAC
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LIST OF EXHIBITS

- 1
- 2 Exhibit A General Project Location
- 3 Exhibit B Legal Description for the Project
- 4 Exhibit C Site Plan Drawings & Vicinity Maps
- 5 Exhibit D Layout Diagrams for the Project
- 6 Exhibit E Scaled Diagrams of the Structures & Technical Specs
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 - 8 1. Biological Assessment
 - 9 2. Environmental Assessment
 - 10 3. BLM Finding of No Significant Impact
 - 11 4. BLM Decision Record
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- 15 Exhibit J BLM ROW Grant and Letters of Support
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- 17 Exhibit L List of Permits, Licenses and Approvals
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BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

APPLICATION OF ARES NEVADA, LLC FOR A PERMIT TO CONSTRUCT TWO 230 KV TRANSMISSION FACILITIES AND ANCILLARY FACILITIES CONSISTING OF AN ADVANCED RAIL STORAGE REGULATION ENERGY MANAGEMENT PROJECT AND OTHER APPURTENANT ELECTRICAL FACILITIES, UNDER THE PROVISIONS OF THE UTILITY ENVIRONMENTAL PROTECTION ACT

Docket No. 14-05006

APPLICATION OF ARES NEVADA, LLC FOR A PERMIT TO CONSTRUCT TWO 230 KV TRANSMISSION FACILITIES AND ANCILLARY FACILITIES CONSISTING OF AN ADVANCED RAIL STORAGE REGULATION ENERGY MANAGEMENT PROJECT AND OTHER APPURTENANT ELECTRICAL FACILITIES, UNDER THE PROVISIONS OF THE UTILITY ENVIRONMENTAL PROTECTION ACT

Pursuant to the Nevada Utility Environmental Protection Act (“UEPA”), the provisions of Chapter 704 of the Nevada Revised Statutes (“NRS”), and Chapter 703 of the Nevada Administrative Code (“NAC”), ARES Nevada, LLC (“ARES” or “Applicant”) hereby files its Application with the Public Utilities Commission of Nevada (“Commission”) for a permit for construction of two 230 kilovolt (“kV”) transmission facilities and ancillary facilities consisting of an Advanced Rail Energy Storage Regulation Energy Management (“REM”) facility, and other appurtenant electrical facilities (the “Project”). This Application is being filed pursuant to NRS 704.870(2)(b) and NAC 703.423. ARES submits the following information in support of its Application.

I. INTRODUCTION

On October 31, 2013, ARES filed an Application for Transportation and Utility Systems and Facilities on Federal Lands (the “299 Application”) with the Southern Nevada District Office of the Bureau of Land Management (the “BLM”). On May 2, 2014, in accordance with the requirements of NRS 704.870, ARES filed its notice (“Notice”) that an application was submitted to a federal agency and that it would seek a permit to construct pursuant to UEPA, resulting in the opening of the instant docket. Applicant is aware that its original Application for

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1 Transportation and Utility Systems and Facilities on Federal Lands (“299 Application”) was filed
2 prior to Applicant’s 704.870(2)(a) Notice in this docket, and this fact was identified in
3 Applicant’s Notice filing on May 2, 2014. At the time, Applicant was generally unclear as to
4 whether the project would be UEPA-jurisdictional given such early stages of Project’s
5 development, but Applicant did file the Notice as soon as it was determined that the Project
6 would likely need a UEPA permit.

7 Pursuant to the National Environmental Policy Act (“NEPA”), the BLM has prepared an
8 Environmental Assessment (“EA”) of the Project, which was issued on or about February 24,
9 2015. NRS 704.870(2)(b) requires an application for a UEPA Permit to be filed within thirty
10 (30) days of the issuance of the final environmental assessment. Accordingly, ARES is now
11 timely submitting this Application in compliance with NRS 704.870(2)(b) and NAC 703.423.
12 ARES respectfully requests that the Commission find and determine that the Project satisfies the
13 requirements of NRS 704.890 and grant approval of this Application accordingly.

14 **II. INFORMATION REGARDING THE APPLICANT**

15 ARES Nevada, LLC is a Washington limited liability company, a wholly owned
16 subsidiary of ARES Corporate, a Washington limited liability company that specializes in the
17 development of an innovative rail energy storage regulation management system. The proposed
18 REM system is a gravity-based energy storage system that utilizes electric shuttle trains
19 operating on a single, steep-grade railroad track to store electric energy in the form of potential
20 energy. The goal of the Project is to assist in electricity supply management on a regional
21 electric grid. Electricity from Valley Electric Association, Inc. (“VEA”) is used to power the
22 locomotive uphill when power is abundant, and then, when energy is needed on the grid, the
23 locomotives descend the grade, with their motors operating as generators.

24 All correspondence related to this Application (copy of all pleadings, notices, orders and
25 discovery requests) should be sent to the undersigned agents:

26 Francesca Cava
27 Chief Operations Officer
28 ARES Nevada, LLC
854 Jimeno Road
Santa Barbara, CA 93103

1 Sylvia Harrison
2 Kathleen Drakulich
3 Curt R. Ledford
4 McDonald Carano Wilson LLP
5 100 West Liberty Street, 10th Floor
6 P.O. Box 2670
7 Reno, Nevada 89505-2670
8 kdrakulich@mcwlaw.com
9 sharrison@mcwlaw.com
10 cledford@mcwlaw.com
11 *Attorneys for ARES Nevada, LLC*

12 **III. RESPONSES TO REQUIRED DISCLOSURES**

13 The information required by NAC 703.423 is provided as follows:

14 1. NAC 703.423(1). Description of Location

15 **a. *A general description of the location of the proposed utility facility, including a regional map that identifies the location of the proposed utility facility (NAC 703.423(1)(a)).***

16 The two new transmission facilities will include a new 3,870 foot 230 kV transmission
17 line connecting a new substation to the existing VEA transmission line and a new 6,260 foot 230
18 kV transmission line connecting to VEA's Gamebird Switch Station. Additionally,
19 approximately 5,200 feet of existing VEA 230 kV transmission line will be removed.

20 The rail line corridor will be a permanent right of way ("ROW") approximately six miles
21 long, located on approximately 72 acres of BLM managed land in the Carpenter Canyon area
22 east of Nevada State Highway 160 and east of Pahrump, Nevada.

23 The alignment of the Project, including the facilities and maintenance area and
24 transmission, is contained within Township 21 South, Range 54 East, Sections 1, 2, and 12;
25 Township 21 South, Range 55 East, Sections 6 and 7; Township 20 South, Range 55 East,
26 Sections 22, 27, 28, 31, 32 and 33; and Township 20 South, Range 54 East, Sections 34 and 35.
27 The ROW will intersect and become part of the existing VEA 230 kV transmission line at the
28 southwest, or down-slope end, of the alignment, utilizing new and existing VEA infrastructure to
connect to Gamebird Switch Station. A new transmission interconnection will be added to
connect directly to the Gamebird Switch Station. New transmission facilities required to serve
the Project will be constructed by VEA within the existing Gamebird Switch Station right-of-
way. The Project will be generally visible from Nevada Highway 160 and Tecopa Road, and

1 may also be visible from certain residential areas located in Southern Pahrump, at a distance of
2 approximately three (3) miles. The general location of the Project is shown on Exhibit A.

3 ***b. A legal description of the site of the proposed utility facility, with the***
4 ***exception of electric lines, gas transmission lines, and water and wastewater***
5 ***lines, for which only a detailed description of the site is required (NAC***
6 ***703.423(1)(b)).***

7 The complete legal description of the Project site, new interconnection and ARES
8 substation is provided in Exhibit B.

9 ***c. Appropriately scaled site plan drawings of the proposed utility facility, vicinity***
10 ***maps, and routing maps (NAC 703.423(1)(c)).***

11 Scaled site plan drawings and maps of the Project location and surrounding vicinity are
12 provided in Exhibit C.

13 2. NAC 703.423(2). Description of Facility

14 ***a. The size and nature of the proposed utility facility (NAC 703.423(2)(a)).***

15 This Project will include: (1) A new electrical substation (the “ARES Substation”) within
16 the Project footprint; (2) A new 3,870 foot 230 kV transmission line connecting the ARES
17 Substation to the existing VEA transmission line; (3) A new 6,260 foot 230 kV transmission line
18 connecting to VEA’s Gamebird Switch Station; (4) removal of approximately 5,200 feet of
19 existing 230 kV transmission line; (5) a new 5.5 mile rail line for the REM Project; and (6)
20 associated ancillary facilities, including inverters, switchgear, grounding, conduits, electrical
21 wiring, protective relaying systems, circuits, primary and secondary telecommunication systems,
22 an operations building, and related equipment appurtenant to the safe, reliable and cost-effective
23 operation of these new and existing facilities. The final footprint for the Project will include 72
24 acres of BLM managed land.

25 The REM facility is a 50 megawatt (MW) gravity-based energy storage system that can
26 assist in transmission system stability and reliability and electricity supply management on the
27 regional electrical transmission grid. The REM facility will provide approximately 12.5 MW
28 hours of fast-response energy storage to assist in balancing electrical supply. The REM facility
does not meet the definition of a “railroad” under 49 CFR 209, and thus the Federal Railroad

1 Administration has not exerted jurisdiction over the rail line and related equipment. The system
2 will respond to commands directly from the California Independent System Operator
3 (“CAISO”). The locomotive will stop generally at mid-elevation along the track until a
4 command is received. The frequency of the locomotive travel along the system will be
5 dependent on the energy supply and demand on the grid. Likewise, the speed at which the
6 locomotive(s) will be traveling when in motion will vary depending on the energy supply and
7 demand upon the grid. Although each shuttle has the potential to reach 25 miles per hour, the
8 average speed for each will be 18.8 miles per hour. Rapid detection and remediation of failures
9 via redundant speed, location, thermal, visual, and vibration sensors, will operate on each shuttle
10 for safety control. Each locomotive will have three redundant breaking systems. BLM’s
11 requirement for road crossings is the inclusion of warning signage.

12 For commercial operation timing, based upon current CAISO interconnection processes,
13 ARES anticipates receiving a Notice to Proceed from BLM by or near June, 2017. Construction
14 is planned to begin Q4 2017 – Q1 2018, and last approximately eight months. Operations should
15 commence by early 2019.

16 ***b. The natural resources that will be used during the construction and***
17 ***operation of the proposed utility facility (NAC 703.423(2)(b)).***

18 During the construction of the Project, water will be used to control dust and minimize
19 impacts to air and soils. Water use will be relatively minimal, and all water will be trucked in
20 from a commercial vendor or purchased locally from other sources. The amount of water
21 required has not yet been determined and will be dependent on the timing (seasonal), phasing
22 (acres of exposed soil), and length of the construction phase. An initial estimation of the amount
23 of water to be used could be 30 gallons per acre per day for vegetation removal, 5,000 gallons
24 per acre per day for grading operations, and 200 to 400 gallons per day for unpaved haul roads.
25 The amount of water used will be the minimum necessary to control dust per BLM and USFWS
26 desert tortoise protective stipulations (standing water is not permitted).

27 The track-side overhead catenary line transmission poles will be those removed from the
28 sections of existing 230kV transmission line to be upgraded.

1 Sand, gravel and other materials generated from cut and fill activities within the Project
2 will be used for road construction to the extent possible. All necessary materials not collected
3 from the site will be purchased from a permitted commercial source.

4 Topsoil will be reused wherever possible for re-vegetation of temporarily disturbed areas.
5 All other natural resources will be incorporated into the materials used in the Project itself (e.g.
6 concrete, steel, etc.)

7 ***c. Layout diagrams of the structures at the proposed utility facility and its***
8 ***associated equipment (NAC 703.423(2)(c)).***

9 Layout diagrams of the structures are included in Exhibit D.

10 ***d. Scaled diagrams of the structures at the proposed utility facility***
11 ***(NAC 703.423(2)(d)).***

12 Scaled diagrams of the structures, along with technical specifications of the utility
13 facilities themselves, are included Exhibit E.

14 ***e. A statement concerning whether the proposed utility facility is an electric***
15 ***generating plant or the associated facilities of an electric generating plant***
16 ***that uses renewable energy as its primary source of energy to generate***
17 ***electricity.***

18 The Project is not an electric generating plant or the associated facilities of an electric
19 generating plant that uses renewable energy as its primary source of energy to generate
20 electricity. The REM facility does not produce more energy than is introduced into its system.
21 The REM facility is a 50 MW gravity-based energy storage system. The REM facility is
22 designed to balance variable energy demands and renewable energy contributions across an
23 electrical grid system.

24 3. NAC 703.423(3) A Copy and Summary of Environmental Studies

25 A Biological Assessment, Environmental Assessment, BLM Finding of No
26 Significant Impact, and BLM Decision Record are included in Exhibit F.
27 [with subparts]

28 4. NAC 703.423(4). Reasonable Alternative Locations.

ARES considered an alignment for the Project in the area of Wheeler Wash, northwest of
the Project. During analysis, this site was determined to be infeasible for the following
engineering, logistical and economic reasons:

1 • **Flood Control** – Due to the topography of the area, extensive flood control
2 measures would have been required to control and divert runoff from the Spring Mountains.
3 Additional infrastructure and coordination with the Town of Pahrump and Nye County would
4 have been required as well, due to the potentially modified runoff patterns which would drain
5 into the Town of Pahrump. The negative economic impact on the Town and County could have
6 been significant. This area is also adjacent to FEMA designated Zone AO: Areas subject to
7 inundation by 1% annual chance shallow flooding (usually sheet flow on sloping terrain) where
8 average depths are between one and three feet. Average flood depths derived from detailed
9 hydraulic analyses are shown in this zone. Some Zone AOs have been designated in areas with
10 high flood velocities such as alluvial fans and washes.

11 • **Slope** – The variability in the slope would have required extensive cut and fill
12 actions to achieve the steady slope required for efficient operation of the REM system. This
13 variability in slope would have also required a longer rail corridor than the 5.5 miles proposed
14 for the Pahrump South (Action) location.

15 • **Species of Concern** – Approximately six miles of this Project would lie within
16 high value desert tortoise habitat. The site is also adjacent to the Nye County proposed Mojave
17 Desert Tortoise Habitat Conservation Area (requested by the County as part of the BLM
18 Resource Management Plan revision). If this area becomes established, there may be a higher
19 density of desert tortoise in the area than in surrounding areas.

20 • **Transmission** – The extent of transmission infrastructure upgrades required for
21 the construction of the Wheeler Wash alternative would have been much greater and
22 economically infeasible for both ARES and VEA.

23 The proposed location does not have similar concerns related to flood control and desert
24 tortoise habitat. Similarly, less impact upon the land related to cut-and-fill and transmission
25 expansion is achieved at the proposed location. For these reasons, the proposed location is best
26 suited for the Project.

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5. NAC 703.421(5). Proof of Public Notice

A copy of the Public Notice is included as Exhibit G.

The Proof of Publication is included as Exhibit H.

6. NAC 703.423(6). Proof of Submittal to the Nevada State Clearinghouse

A copy of proof of service to the Nevada State Clearinghouse is attached as Exhibit I.

7. NAC 703.423(7) Probable Effect on Environment; (NRS 704.890(1)(a))

a. A reference to any studies described in Subsection 3, if applicable (NAC 703.423(7)(a)).

Multiple exploratory and environmental analysis surveys were conducted by ARES and their contractors during 2014. These surveys included botanical surveys, desert tortoise presence/absence surveys, preliminary alignment measurements, and a potential construction contractor on-site meeting. Desert tortoise surveys were conducted along the entire proposed ROW in May, September, and October of 2014. One live tortoise was observed, and multiple burrows were identified. Native plant surveys were conducted for the entire proposed ROW during the period April 27 – May 25, 2014.

A Class III cultural survey was conducted during the period November 4 – 8, 2014. Sixteen cultural resources projects had been conducted within one mile of the Project area and six previously recorded archaeological sites have been documented within one mile of the Project area; however, none of the sites are located within the Project’s area of potential effect. The Class III archaeological survey did not locate any cultural materials.

In July 2014, an aerial survey of the proposed alignment was conducted in order to develop a more refined alignment and aid in the development of the initial engineering drawings. The exact centerline will be chosen via engineering surveys prior to construction to best implement design criteria, minimize environmental impacts, and satisfy the mitigation measures in the Right-of-Way grant offer, Finding of No Significant Impact and Decision Record.

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b. An environmental statement that includes:

(1) The name, qualifications, professions, and contact information of each person with primary responsibility for the preparation of the environmental statement (NAC 703.423(7)(b)(1)).

The following persons had responsibility for the preparation of the EA:

<p>Erika Balderson, NEPA Project Manager, Biologist, (702) 304-9830, Erika@becnv.com</p>	<p>Mark Chandler, BLM Realty Specialist, Renewable Energy Coordination Office, (702) 515-5000, MChandle@BLM.gov.</p>
<p>Nancy Christ, Former Planning and Environmental Coordinator, BLM Renewable Energy Coordination Office, ycnan123@hotmail.com. Melanie Cota, Wildlife Biologist, BLM Pahrump Field Office, (702) 515-5233, MCota@BLM.gov.</p>	<p>Eileen Christensen, Principal Geologist, (702) 304-9830, Eileen@becnv.com. Fred Edwards, Botanist, BLM Range and Forestry Program Lead, (702) 515-5022, Fred_S_Edwards@BLM.gov.</p>
<p>Matthew Edwards, PhD, RPA, Principal Investigator, Archaeologist, (801) 322-4307, Medwards@swca.com.</p>	<p>Susan Farkas, BLM Planning and Environmental Coordinator, (702) 515-5223, Susan_Farkas@BLM.gov.</p>
<p>Nicollee Gaddis, Planning and Environmental Coordinator, BLM Renewable Energy Coordination Office, (702) 515-5136, NGaddis@BLM.gov.</p>	<p>Brenda Gilbert, Former Renewable Program Manager, (530) 550-8760, BGilbert@TruckeeRiverWC.org.</p>
<p>Greg Helseth, BLM Nevada State Renewable Energy Coordination Office Director, (702) 515-5173, Gregory_Helseth@BLM.gov.</p>	<p>Vanessa Hice, BLM Assistant Field Manager, Lands Division, (702) 515-5088, VHice@BLM.gov.</p>
<p>Jennifer Hill, Former Biological Resource Specialist, (702) 866-5927, jenniehill15@gmail.com.</p>	<p>Krystal Johnson, Wild Horse and Burrow Specialist, BLM Lands Division, (702) 515-5000.</p>
<p>Richard Nelson, Technical Oversight and Resource Coordinator, (702) 304-9830, Richard@becnv.com.</p>	<p>Sarah Page, MA, RPA, Archaeologist, Project Director, (801) 743-7800, Sarah.Page@HDRInc.com.</p>
<p></p>	<p></p>

1 2 3	Erica Pionke, BLM Realty Specialist, (702) 515-5059, EPionke@BLM.gov .	Boris Poff, PhD, District Hydrologist, (702) 515-5154, BPoff@BLM.gov .
4 5	Danny Rakestraw, Biological Resource Specialist, (702) 304-9830, Danny@BECNV.com .	Kurt Rautenstrauch, PhD, Transmission Infrastructure Specialist, (702) 938-6033, Kurt.Rautenstrauch@HDRInc.com .
6 7 8	Mariah Rivero, Community Development and Outreach Coordinator, (702) 304-9830.	Mark Slaughter, BLM Supervisor of Natural Resources, (702) 515-5195, MSlaughter@BLM.gov .

(2) *The name, qualifications, professions, and contact information of each person who has provided comments or input in the preparation of the environmental statement (NAC 703. 723(7)(b)(2)).*

The following persons provided comments on the EA:

12 13 14	Leo Blundo, Pahrump resident, contact information unknown.	Michael Burroughs, Wildlife Biologist, US Fish and Wildlife Service, (702) 515-5242, Michael_Burroughs@fws.gov .
15 16 17	Judy Bundorf, interested public, 1800 Sterling Point Court, Henderson, Nevada 89012.	Laura Cunningham, Basin and Range Watch, PO Box 70, Beatty, Nevada 89003.
18 19 20	Kevin Emmerich, Basin and Range Watch, PO Box 70, Beatty, Nevada 89003.	Kevin Gullette, Economic Development Manager, Clark County Department of Comprehensive Planning, (702) 455-4722, Kevin.Gullette@ClarkCountyNV.gov .
21 22 23	Brad Hardenbrook, Supervisory Habitat Biologist, Nevada Department of Wildlife, (702) 486-5127, BHrdnbrk@NDOW.org .	Mark Silverstein, Principal Planner, Clark County Department of Aviation, (702) 261-5709, marksi@mccarran.com .
24 25 26 27	Cheech Smialek, Chief Inspector, Federal Railroad Administration, Region 7, 916-414-2330, Anthony.Smialek@dot.gov .	Jared Tasko, Senior Planner, Clark County Department of Comprehensive Planning, (702) 455-5620, JTasko@ClarkCountyNV.gov .

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23 **(4) A description of the following (NAC 703.423(7)(b)(4)).**

24 **(i) The environmental characteristics of the project area existing at the**
25 **time the application or amended application is filed with the**
26 **Commission.**

26 The Project site is located in the Pahrump Valley, which lies in the southwestern portion
27 of the Great Basin, within the Basin and Range physiographic province. The Pahrump Valley is
28 a horst and graben system. The only USFWS noted endangered, threatened, proposed, or

1 candidate species known to occur in the vicinity of the Project area is the state and federally
2 threatened Desert Tortoise. There are no perennial streams within the Project area; there are a
3 number of ephemeral washes. Land cover types occurring within the potentially affected area of
4 the proposed Project area are North American Warm Desert Pavement, Inter-Mountain Basins
5 Semi-Desert Shrub Steppe, and Mojave Mid-Elevation Mixed Desert Scrub communities and are
6 generally widespread and present throughout the entire Mojave Ecoregion. No noxious weeds
7 were observed during field surveys. More details on the environmental characteristics pertaining
8 to the Project site can be found in the EA in Exhibit F.

9 ***(ii) The environmental impacts that the construction and operation of***
10 ***the proposed utility facility will have on the project area before***
11 ***mitigation.***

12 The Project would contribute marginally to the decline of native plant communities and
13 animals in the area through the long-term removal of 72 acres and short-term removal of 106
14 acres of habitat (the 106 acres will be restored following construction). Construction will
15 contribute to a slight increase in dust and noise in the area. The dust will be controlled with
16 water (or a BLM-approved palliative) and noise will be mitigated by operating only during
17 daylight hours when most people are active. However, the Project will have almost no dust or
18 noise impact during operations. It should have minimal impact to recreation and recreational
19 access, since the land will remain largely open, the roads will be provided with rail crossing
20 signs, and Loop Boundary Road will be straightened to only cross the railbed once, rather than
21 the three times it would if it remained unchanged. The Project will have little effect on wildfires,
22 other than to possibly act as a fire break. In the realm of climate change, it will contribute engine
23 exhaust products during construction, almost none (mainly from employee travel) during
24 operations phase, and will produce no emissions while storing and releasing energy. It will
25 provide a significant positive impact to the community in terms of grid stabilization, construction
26 jobs, full-time jobs during the operational phase, and economic multiplier, as more particularly
27 described below in Subsection 12 below.

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(iii) The environmental impacts that the construction and operation of the proposed utility facility will have on the project area after mitigation.

As part of standard operating procedures, standard mitigation measures will be implemented throughout the construction and operation of the Project in order to reduce potential adverse environmental impacts. Most impacts are short term and generally occur during the construction period. Project design and implementation of site-specific or selectively recommended mitigation measures will minimize the effect of the Project where the potential for long-term adverse impacts may occur.

Standard rail crossings will be installed where the rail line crosses dirt roads to maintain access to public lands. The Carpenter Canyon road crossing, which is frequently utilized based on the condition of the road, will include flashing lights as well as warning signs. Other minor crossings will include signage, but not lighting. To further improve public safety by minimizing track crossings, Loop Boundary Road, which, as currently aligned, would cross the rail corridor in multiple locations at the northeast end of the corridor, will be rerouted to reduce the necessary crossings from three to one, and still allow public access to the upper elevations of Carpenter Canyon. The rail system will be operated to minimize blocking the Carpenter Canyon road crossing for extended periods. Much of the rail line will be at or near grade level, but there will be areas where the embankment will be built up and a tortoise passage installed between the ties and under the two rails, to allow desert tortoise (and other smaller wildlife) to cross the rail line unimpeded by the rails. There will be no culverts or passage ways large enough to accommodate large animals or humans. A catenary power line to allow easy and safe passage by wild horses, burros and other large animals. Tortoise escape passages will be installed approximately every mile to allow the tortoise to exit from between the rails should one find itself in that position. Final spacing of the tortoise escape passages will be determined based on consultation with BLM resource specialists.

Any deaths or injuries of desert tortoises shall be investigated as thoroughly as possible to determine the cause. The US Fish and Wildlife Service (“USFWS”) and Nevada Department of Wildlife (“NDOW”) must be verbally informed immediately and within five business days in



1 writing. A written assessment report shall be submitted annually to the USFWS outlining the
2 operation and maintenance activities that occurred over the past year. This report will include
3 frequency of implementation of minimization measures, biological observations, and general
4 success of each of the minimization measures. All deaths, injuries, and illnesses of endangered
5 or threatened species within the Project area, whether associated with Project activities or not,
6 will be summarized in the annual report. The report is due April 1 of each year.

7 Remote monitoring of the rail corridor will be installed to protect and monitor the system
8 for maintenance issues and from outside interference. ARES will install a remote monitoring
9 system at the facility to monitor the rail line and potentially the tortoise crossings, as well as
10 provide an on-site security officer to monitor the support facilities 24 hours a day, 365 days a
11 year.

12 BLM-approved weed control measures and best management practices will be used to
13 avoid or mitigate any weed infestations, if necessary. Should the use of herbicides be requested
14 by the BLM on potential future occurrences of weeds, only those which are in accordance with
15 the USFWS biological opinion, or subsequent to further Section 7 consultation, will be employed
16 to avoid possible harm to threatened or endangered species such as the desert tortoise. Only
17 certified weed-free straw bales will be used on site, if required. Re-vegetation areas and growth
18 will be monitored for the presence of noxious weeds throughout the life of the Project.

19 The operator or any contractor company working for the operator will be required by the
20 Occupational Safety and Health Administration (OSHA) regulations to have Material Safety
21 Data Sheets (MSDS) available for all chemicals, compounds, or substances that are used or
22 anticipated to be encountered during the course of construction and operations. All chemicals
23 would be handled in an appropriate manner to prevent leaks or spills in the environment.
24 Because the Project operations would comply with all applicable federal and state laws
25 concerning hazardous materials and the operator's spill prevention and clean up procedures, and
26 only limited amounts of hazardous materials will be on site, no impacts from hazardous or solid
27 waste are anticipated. However, Project mitigation plans will specifically address hazardous and
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1 solid waste handling, spill and leak prevention and handling procedures, and clean up processes
2 and procedures for petroleum, oil, lubricants, and other materials that may be used on site.

3 Water for drinking, sanitary purposes, and dust mitigation during construction will be
4 obtained off site and transported to the site.

5 8. NAC 703.423(8) An Explanation of the Extent to Which the Proposed Utility
6 Facility is Needed to Ensure Reliable Utility Service to Customers in this State;
7 NRS 704.890(1)(b)

8 The Project will not emit greenhouse gases, therefore the Commission need not find and
9 determine the extent to which the proposed utility facility is needed to ensure reliable utility
10 service to customers in Nevada pursuant to NRS 704.890(1)(b). Notwithstanding, the Project
11 will address current and future grid reliability and stability issues, in accordance with Federal
12 Energy Regulatory Commission (FERC) objectives. The Project is designed to balance variable
13 energy demands and renewable energy contributions across an electrical grid system, without
14 emitting any greenhouse gases when operating.

15 9. NAC 703.423(9) An Explanation of How the Need for the Proposed Utility
16 Facility Balances any Adverse Effects on the Environment; NRS 704.890(1)(c)

17 Renewable resources are often intermittent resources. The Project's REM facility is
18 designed to provide grid security and reliability, support the increased use of renewable
19 technologies, and to provide an energy storage solution that does not rely on water. ARES's
20 mission is to enable the electric grid to integrate unprecedented amounts of clean,
21 environmentally responsible, renewable energy while maintaining the reliable electric service
22 necessary to power growth and prosperity. As such, the Project is developed keeping a light
23 footprint on the environment. The Project will achieve its mission while ensuring minimal
24 impacts on the native plant and animal community through the implementation of mitigation
25 measures and continued coordination with the BLM and USFWS on Project design and
26 construction. Therefore, the need for this facility balances the minimal adverse impact upon the
27 environment.

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1 10. NAC 703.423(10) An Explanation of How the Proposed Utility Facility
2 Represents the Minimum Adverse Effect on the Environment; NRS 704.890(1)(d)

3 The Las Vegas and Pahrump Field Offices interdisciplinary review and analysis of the
4 EA determined the Project would not result in any significant impacts to the quality of the human
5 environment based on criteria established by regulations, policy and analysis. The BLM
6 concluded the proposed action is not a major Federal action and will result in no significant
7 impacts to the environment, individually or cumulatively with other actions in the general area.
8 No environmental effects meet the definition of significance in context or intensity and do not
9 exceed those effects described in applicable land use plans.

10 The Project is a site-specific action directly involving 75 acres of BLM managed public
11 land in Clark and Nye Counties, Nevada, that does not, in and of itself, have international,
12 national, regional, or state-wide importance. The effects of the action are relatively local, and are
13 not applicable on a national scale since no nationally significant resources or values are present
14 or involved in the Project.

15 ***(a) The state of available technology (NAC 703.423(10)(a)).***

16 The ARES Project uses no new technology, from the use of standard rail tracks, to the
17 use and reuse of existing transmission infrastructure. The railway infrastructure will adhere to
18 minimum standards per the Recommended Practices in the American Railway Engineering &
19 Maintenance-of-Way Association (AREMA) Manual of Railway Engineering (latest); the
20 maximum engineering standards will be based on those recommended in the publication
21 “Guidelines to Best Practices for Heavy Haul Railway Operations - Infrastructure Construction
22 and Maintenance Issues,” published in 2009 by the International Heavy Haul Association
23 (IHHA). Track construction uses common construction equipment such as boom trucks, low-bed
24 trucks, high-lifts, rubber-tired loaders, rubber-tired hydraulic cranes, and dozers, plus specialized
25 equipment such as tie distributing spreaders, rail threaders, a portable rail welding machine, and
26 tamping and ballast handling/dressing equipment.

27 The catenary power distribution line will be designed in accordance with the published
28 standards of the Rural Utility Services (RUS) as a Distribution System. The line will consist of

1 wooden poles less than 50 feet (15.2 meters), spaced at approximately 325 foot (99 meters)
2 intervals, carrying 4-wire 24.9kV circuits in a wishbone cross arm configuration supporting four
3 - 954 Aluminum Conductor Composite Core (ACCC) wires as well as an optical ground wire
4 (OPGW) for facilities communication requirements. Span lengths will vary in areas presenting
5 terrain restrictions. An average sag of ten feet below pole connection can be assumed, but will
6 vary depending on span lengths. The power distribution poles will be wood with brown
7 fiberglass cross arms supporting ACCC wire. An average sag of ten feet below pole connection
8 can be assumed, but will vary depending on span lengths. The design, construction, operation
9 and maintenance of the interconnection line will meet or exceed the requirements of the National
10 Electrical Safety Code (NESC), U.S. Department of Labor, Occupational Safety and Health
11 Standards and ARES's requirements for safety. All structures will be pre-fabricated modular and
12 steel frame buildings on reinforced concrete foundations. The transmission lines will be Avian
13 Power Line Interaction Committee (APLIC) compliant (Suggested Practices for Avian Protection
14 on Power Lines [2006], Reducing Avian Collisions with Power Lines [2012], and Avian
15 Protection Plan Guidelines [2005]). All of the above is readily-available, or "off the shelf,"
16 technology.

17 ***(b) The nature of various alternatives (NAC 703.423(10)(b)).***

18 ARES explored a proposed alternative site, as described in Subsection 4 above. (NAC
19 703.423(4). The nature of these concerns are also described above.

20 ARES also explored a second alternative, which included the same Project components
21 of the Project, but instead located the operations, maintenance and control facilities and the
22 ARES Substation in a configuration that placed the Maintenance Building at the end of a
23 relatively short rail spur, avoiding the need for a secondary parallel rail spur and reducing the
24 total area of impact slightly. This configuration and location also maintained a straight rail
25 alignment within the southern portion of the main rail alignment. The alternative would have
26 located the operations and control facilities and the ARES Substation adjacent to the
27 maintenance facility on a concrete pad that would be smaller than the area required for the
28 Project.

1 The slight modification in the location of these facilities under the second alternative
2 decreases the length of the interconnection between the ARES Substation and existing VEA 230
3 kV transmission line by approximately 65 feet, and reduces the length of new road needed to
4 access the facilities by approximately 450 feet. The Maintenance Building would be sited
5 between 225 and 335 feet within the eastern boundary of the 368 Energy Corridor; the control
6 building would be between 110 and 165 feet within the eastern boundary of the 368 Energy
7 Corridor. However, this alternative places these structures within the Congressionally-
8 designated Section 368 West-wide Energy Corridor (Section 368 of the Energy Policy Act of
9 2005, 42 U.S.C. § 15926) boundary, which has been designated for linear energy-based
10 infrastructure development, which created a conflict.

11 Finally, ARES explored fencing the entire rail corridor. The installation of fencing
12 around the rail corridor was determined to be too significant of a disruption to tortoise, horse,
13 burro, and other large mammal movements. Additionally, the approximately 12 miles of fencing
14 it would require would increase the amount of disturbance to existing vegetation, visual impacts,
15 public access, and increase the time and cost of construction. It was determined the rail corridor
16 could be crossed safely, eliminating the need for fencing.

17 *(c) The economics of various alternatives (NAC 703.423(10)(c)).*

18 The economics of the first alternative would have magnified the costs of the Project
19 significantly, as more-particularly described in Subsection 4 above (NAC 703.423(4)). The
20 economics on the second alternative vary insignificantly compared to the selected action.
21 However, the location of site type facilities within the 368 Energy Corridor made this alternative
22 infeasible based on BLM review.

23 11. NAC 703.423(11) An Explanation of How the Location of the Proposed Utility
24 Facility Conforms to Applicable State and Local Laws and Regulations; NRS
704.890(1)(e)

25 In accordance with NRS 704.890(1)(e), the Project does not violate federal, state, or local law
26 or requirements imposed for the protection of the environment. The Project is in conformance
27 with the following management objectives and directions of the 1998 BLM Las Vegas RMP/EIS
28 as amended:

1 **Objective AR-1.** “Ensure that actions occurring on BLM-administered lands do not violate
2 local, state, tribal and Federal air quality laws, regulations, and standards.”

3 **Objective LD-2.** “All public lands within the planning area, unless otherwise classified,
4 segregated or withdrawn, and with the exception of Areas of Critical Environmental Concern and
5 Wilderness Study Areas, are available at the discretion of the agency, for land use leases and
6 permits under Section 302 of Federal Land Policy and Management Act.”

7 **Objective LG-1.** “Provide for continued grazing of domestic livestock on public lands,
8 consistent with law, regulation established standards and guidelines and policy on areas open to
9 livestock grazing.”

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

14 **Management Direction RW-1-h.** “All public land within the planning area, except as stated
15 in RW-1-c through RW-1-g, are available at the discretion of the agency for rights-of-way under
16 the authority of the FLPMA.”

17 **Objective WHB-1.** “In Herd Management Areas not constrained by desert tortoise
18 restrictions (see Maps 2-1 and 2-7), manage for healthy, genetically viable herds of wild horses
19 and/or burros in a natural, thriving ecological balance with other rangeland uses.”

20 **Objective WHB-2.** “Maintain the wild, free-roaming character of the wild horses and burros
21 on the public lands.

22 The EA has been prepared in accordance with the following statutes and implementing
23 regulations, policies and procedures:

- 24 • The National Environmental Policy Act of 1969, as amended (PL 91-190, 42 USC 4321
25 *(et seq.)*)
- 26 ○ 40 Code of Federal Regulations (CFR) 1500 (*et seq.*). Council on Environmental
27 Quality (CEQ) Regulations for Implementing the Procedural Provisions of the
28 National Environmental Policy Act
 - Considering Cumulative Effects under the National Environmental Policy Act
[CEQ 1997]

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- U.S. Department of the Interior (USDO I) requirements (Departmental Manual 516, Environmental Quality [USDO I 2007])
- BLM NEPA Handbook (H-1790 1) (BLM 2008)
- The Federal Land Policy and Management Act of 1976 (PL 94 579, 43 USC 1761 *et seq.*)
 - 43 CFR 2800, Rights-of-Way, Principles and Procedures; Rights-of-Ways under the Federal Land Policy and Management Act and the Mineral Leasing Act; Final Rule, April 22, 2005
- The 2005 Energy Policy Act; The National Energy Policy, Executive Order 13212 - Actions To Expedite Energy-Related Projects
- The Endangered Species Act of 1973, as amended (ESA) (16 United States Code [USC] Section 1531)
 - The Migratory Bird Treaty Act of 1918, as amended (MBTA; 16 USC 703 *et seq.*):
 - Bald and golden Eagle Protection Act (16 USC 668 *et seq.*)
- National Historic Preservation Act (36 CFR 800)
 - Nevada State Historic Preservation Office, required consultation under 36 CFR 800
- Federal Water Pollution Control Act (Clean Water Act) Section 404, as amended (33 U.S.C. §1251 *et seq.* (1972)
- Utility Environmental Protection Act (UEPA Permit) (NRS 704.820 to 704.900) Avian Protection Plan Guidelines, 2005

(a) All permits, licenses, and approvals the applicant has obtained, including copies thereof (NAC 703.423(11)(a)).

ARES currently does not hold any permits, licenses, or approvals, other than the BLM right-of-way grant and Nye County and VEA Letters of Support included as Exhibit J. On February 13, 2014, ARES delivered NDOW notice of intent to construct an energy development project to pursuant to NRS 701.600 – NRS 701.640. The costs estimated for the Project was \$3,895.36, and ARES delivered a check to NDOW in that amount on or around February 13, 2014. Copies of the NDOW application and evidence of the cost recovery account are included in Exhibit K.

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(b) All permits, licenses and approvals the applicant is in the process of obtaining to commence construction of the proposed utility facility. The applicant must provide an estimated timelines for obtaining these permits, licenses, and approvals (NAC 703.423(11)(b)).

Pursuant to NRS 704.890(1)(e), all permits, licenses, and approvals that are needed prior to construction of the Project, as well as the estimated date of completion, are listed in Exhibit L.

12. (NAC 703.423(12) An Explanation of How the Proposed Utility Facility will Serve the Public Interest; NRS 704.890(1)(f)

(a) The economic benefits that the proposed utility facility will bring to the applicant and this state (NAC 703.423(12)(a)).

ARES facilities are designed to provide grid security and reliability, support the increased use of renewable technologies, and to provide an energy storage solution that does not rely on water. ARES will bid into the daily CAISO ancillary services market to stabilize renewable energy contributions.

The direct economic impacts of the construction phase will depend on the dollar value and quantity of materials available for purchase locally, as well as personal income and employment. The majority of construction materials, much of which is highly technical, with the exception of natural resources, such as sand, gravel, stone, and concrete products, will likely be imported and have minimal impact on the local economy. Labor accounts for a significant portion of total construction costs. As more construction workers spend their wages and salaries for household consumption in the local area, the positive impacts associated with these jobs increases. As many as 100 to 125 full time prevailing wage construction workers are expected to be on site during construction, which is expected to last up to six months. ARES anticipates hiring a Pahrump, Nevada, based construction company with locally-based employees. Thus, the personal income, jobs, increased sales by local suppliers of construction goods and services, and other direct economic benefits associated with the Project are likely to stay within the Town of Pahrump. Similarly, indirect benefits, including local secondary consumer and supply-chain goods and services would be expected. Also, the hiring of a local, established company, will limit the negative impacts on community services and local government an in-migration of new workers may affect.

1 During the operation of the facility 15 to 16 competitively paid full time workers are
2 expected to be on site during the facility's 24 hour, seven days per week operation. Anticipated
3 benefits associated with these long-term jobs include personal income, new jobs, and business
4 expenditures. Indirect benefits would include expansion of the local supply chain providing
5 goods and services in support of direct suppliers to the Project. Additionally, the new project
6 would amount to a diversification of the local economy in the energy industry that would be
7 consistent with one of the four target industry sectors identified in both the County's
8 Comprehensive Economic Development Strategy (CEDS) document and with the Governor's
9 Office of Economic Development Strategy.

10 The local governments would experience an increase in property tax revenues. Materials
11 will be sourced locally to the extent possible (technical equipment may have limited
12 distributors), to reduce shipping costs and impacts. In addition, the presence of the Project, its
13 personnel, and their contribution to local business and taxes may help to jumpstart or lend
14 credence to other projects, such as the Great Basin College, or the Public Safety Center, and
15 could create a synergistic effect to help growth in other areas such as a park, or the Pahrump
16 truck bypass route. It would also provide an outstanding example of sustainable development and
17 possibly convince other developers to build sustainably.

18 On both a local and a regional scale, socio-economics stands to benefit from the ultimate
19 purpose for the Project – energy regulation management, which promotes a secure and reliable
20 electrical power service for residents, business, and industry.

21 ***(b) The nature of the probable effect on the environment in this state if the***
22 ***proposed utility facility is constructed (NAC 703.423(12)(b)).***

23 The nature of the effects on the environment, both before and after mitigation, are more
24 particularly described in Subsection 7 above (NAC 703.424(7)).

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1 **IV. CONCLUSION AND REQUEST FOR RELIEF**

2 Based upon the Application and any other amendment or supplement thereto, and
3 pursuant to NRS 704.870 and NRS 704.890, ARES respectfully requests the Commission
4 approve and issue a permit to construct under UEPA for the Project. ARES reserves the right to
5 amend and supplement this Application as permitted and contemplated pursuant to NRS 704.820
6 to 704.900 and NAC 703.415 to 703.427.

7 DATED: This 25th day of March, 2016.

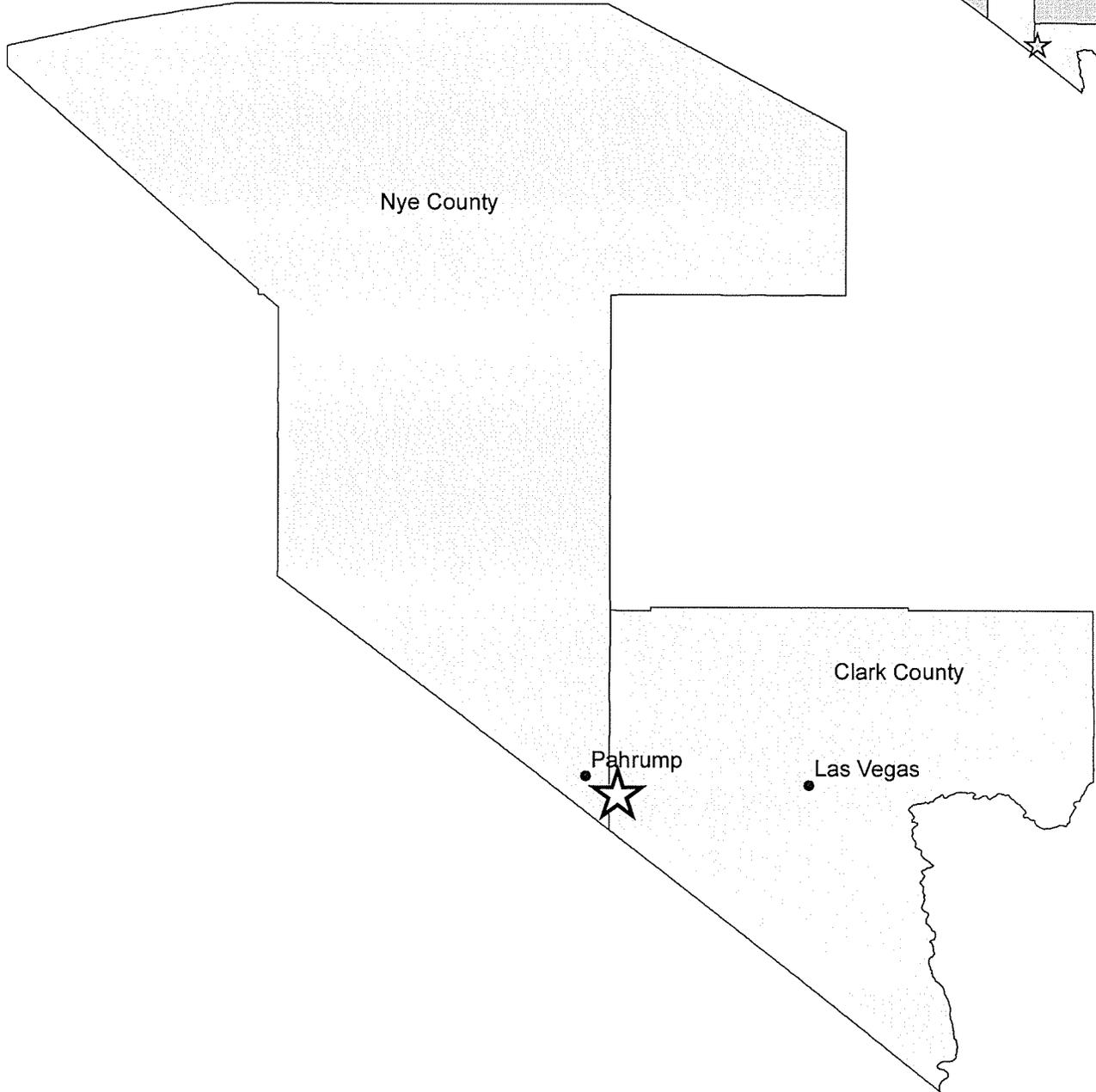
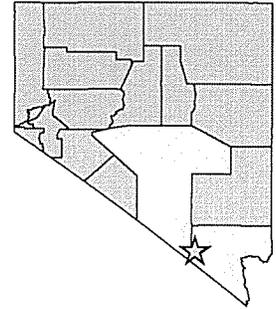
8 MCDONALD CARANO WILSON LLP

9
10 By 

Sylvia Harrison
Kathleen Drakulich
Curt R. Ledford
100 West Liberty Street, 10th Floor
P.O. Box 2670
Reno, Nevada 89505-2670
Attorneys for ARES Nevada, LLC

EXHIBIT A

ARES REM Site Location in Nevada



0 25 50 100 Miles



EXHIBIT B

EXHIBIT B – Legal Description of the Site

Rail Line Corridor Legal Land Description

Township and Range	Section	Aliquot Part
T. 20 South, R. 55 East	22	Begins in SW ¼ of the NE ¼, running southwest through the NW ¼ of the SE ¼, NE ¼ of the SW ¼, and SE ¼ of the SW ¼, to the SW ¼ of the SW ¼; then
T. 20 South, R. 55 East	27	NW ¼ of the NW ¼ of the NW ¼; then
T. 20 South, R. 55 East	28	NE ¼ of the NE ¼, running southwest through the SE ¼ of the NE ¼, SW ¼ of the NE ¼, NW ¼ of the NW ¼ of the SE ¼, NE ¼ of the SW ¼, and NW ¼ of the SE ¼ of the SW ¼, to the SW ¼ of the SW ¼, then
T. 20 South, R. 55 East	33	NW ¼ of the NW ¼ of the NW ¼; then
T. 20 South, R. 55 East	32	NE ¼ of the NE ¼, running southwest through the SW ¼ of the NE ¼, and NE ¼ of the SW ¼, SE¼ of the NW¼ of the SW¼, to the SW ¼ of the SW ¼, then
T. 20 South, R. 55 East	31	SE ¼ of the SE ¼ of the SE ¼, then
T. 21 South, R. 55 East	06	NE ¼ of the NE ¼, running southwest through the SW ¼ of the NE ¼, NE ¼ of the SW ¼, and NW¼ of the SE¼ of the SW¼, to SW ¼ of the SW ¼, then
T. 21 South, R. 55 East	07	NW ¼ of the NW ¼ of the NW ¼, then
T. 21 South, R. 54 East	12	NE ¼ of the NE ¼ of the NE ¼.
T. 21 South, R. 54 East – <i>maintenance siding and spur line</i>	01	SE ¼ of the SE ¼.

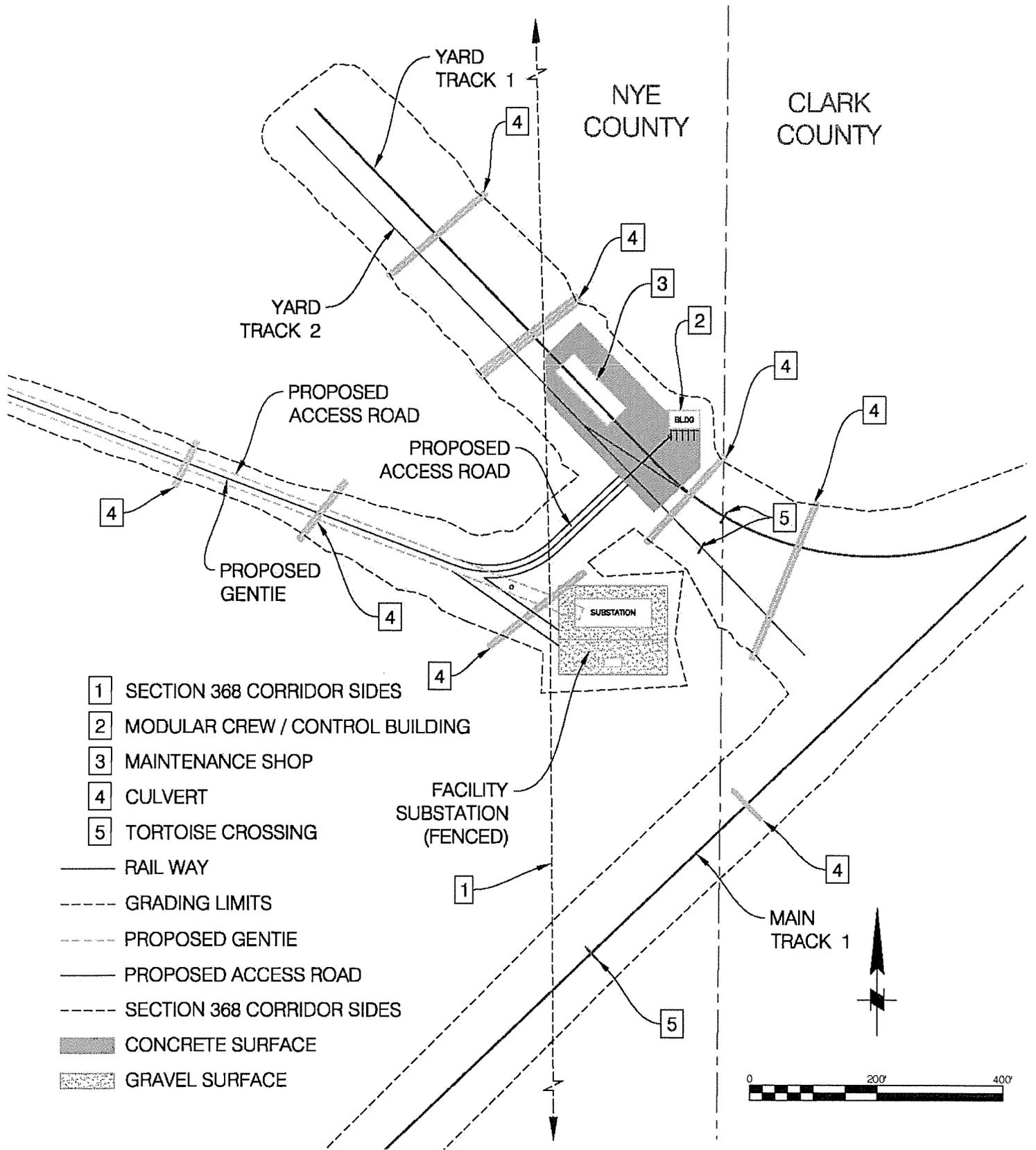
Operation, Control, Substation and Maintenance Facilities Legal Land Description

Township and Range	Section	Aliquot Part
T. 21 South, R. 54 East – <i>maintenance and control buildings</i>	01	SE ¼ of the SE ¼, of the SE ¼.
T. 21 South, R. 54 East – <i>ARES substation</i>	12	NE ¼ of the NE ¼, of the NE ¼.

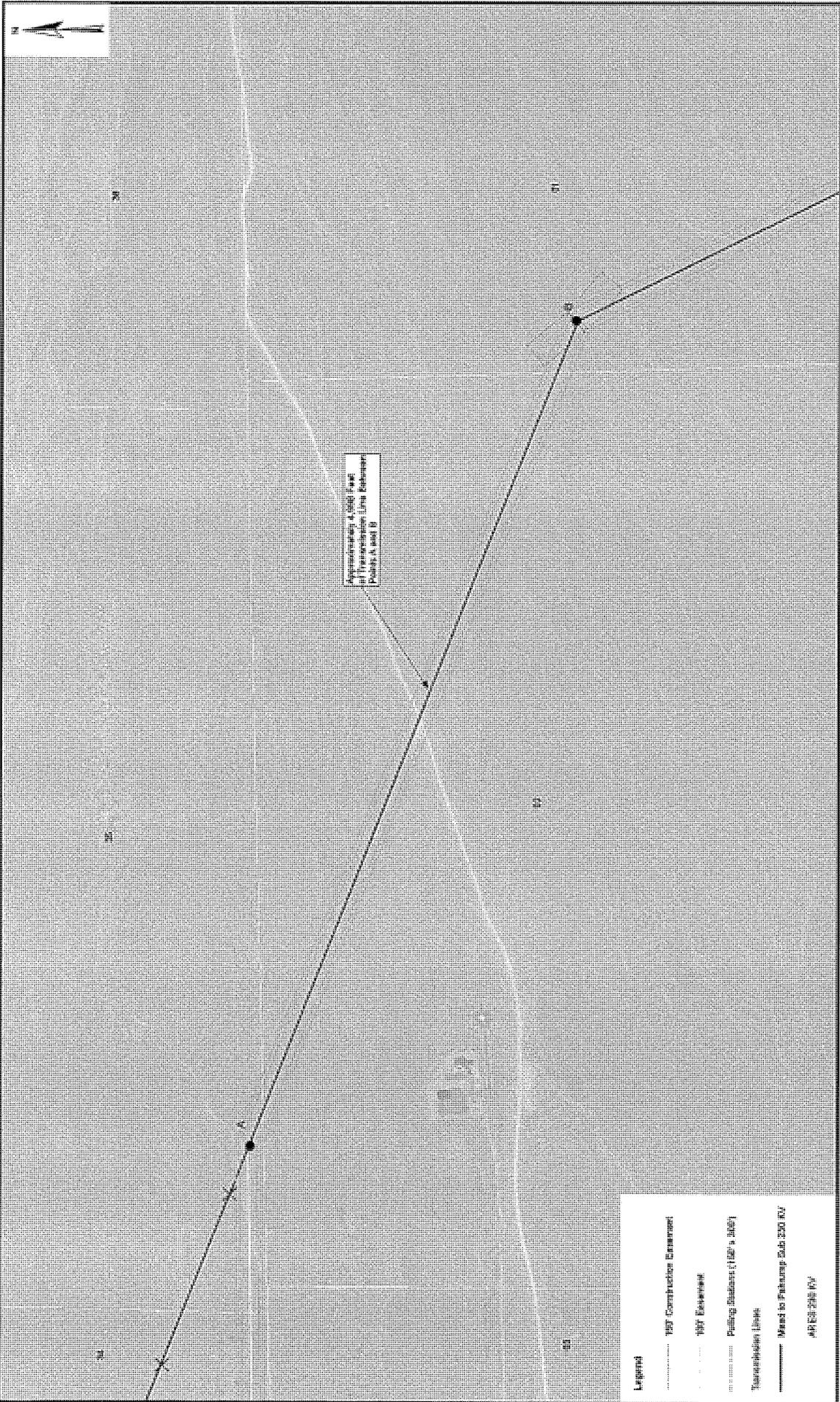
Transmission Interconnection Line Legal Land Description

Township and Range	Section	Aliquot Part
New Interconnection Connecting ARES Substation to Existing Line		
T. 21 South, R. 54 East	12	Running northwest from the NE ¼ of the NE ¼, of the NE ¼, through
T. 21 South, R. 54 East	01	S ½ of the SE ¼ of the SE ¼, SW ¼ of the SE ¼, N ½ of the SE ¼ of the SW ¼, to the SE ¼ of the NW ¼ of the SW ¼.

EXHIBIT C



DETAIL - YARD TRACK



Approximate location of Single Phase of Transmission Line Rehabilitation Project A and B

- Legend**
- NOT Construction Completed
 - NOT Elected
 - Paving Stations (100' x 300')
 - Transmission Lines
 - Mains to Pahrump Sub 230 KV
- ARES 230 KV**

DATE	8/28/14
DESIGNED	HDR/TPZ
ENGINEER	HDR/TPZ
APPROVED	HDR/TPZ
SCALE	AS SHOWN
FILE NO.	AR-18-11 DMC
SHEET NO.	3

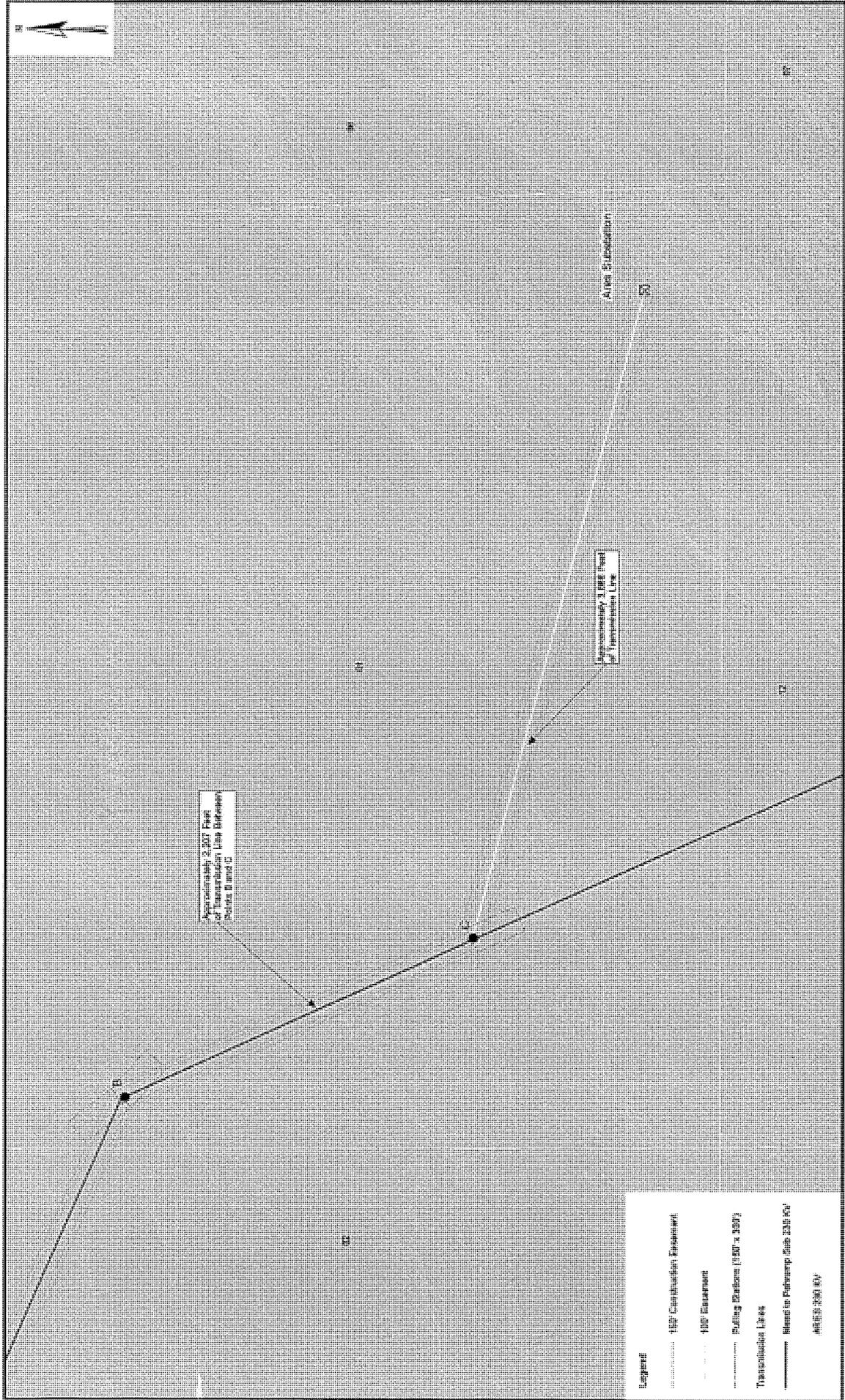
VALLEY ELECTRIC ASSOCIATION
PAHRUMP, NEVADA



REV	DATE	BY	REVISION
1	8/28/14	ANS/TPZ	REVISED FOR

HDR

ARES 230 KV TRANSMISSION LINE
SHEET 03



Legend

- 4000' Contour Interval
- 100' Contour Interval
- Existing Station (1907 & 1907)
- Transmission Lines
- Head to Pahump Sub 230 KV
- AREA STATION

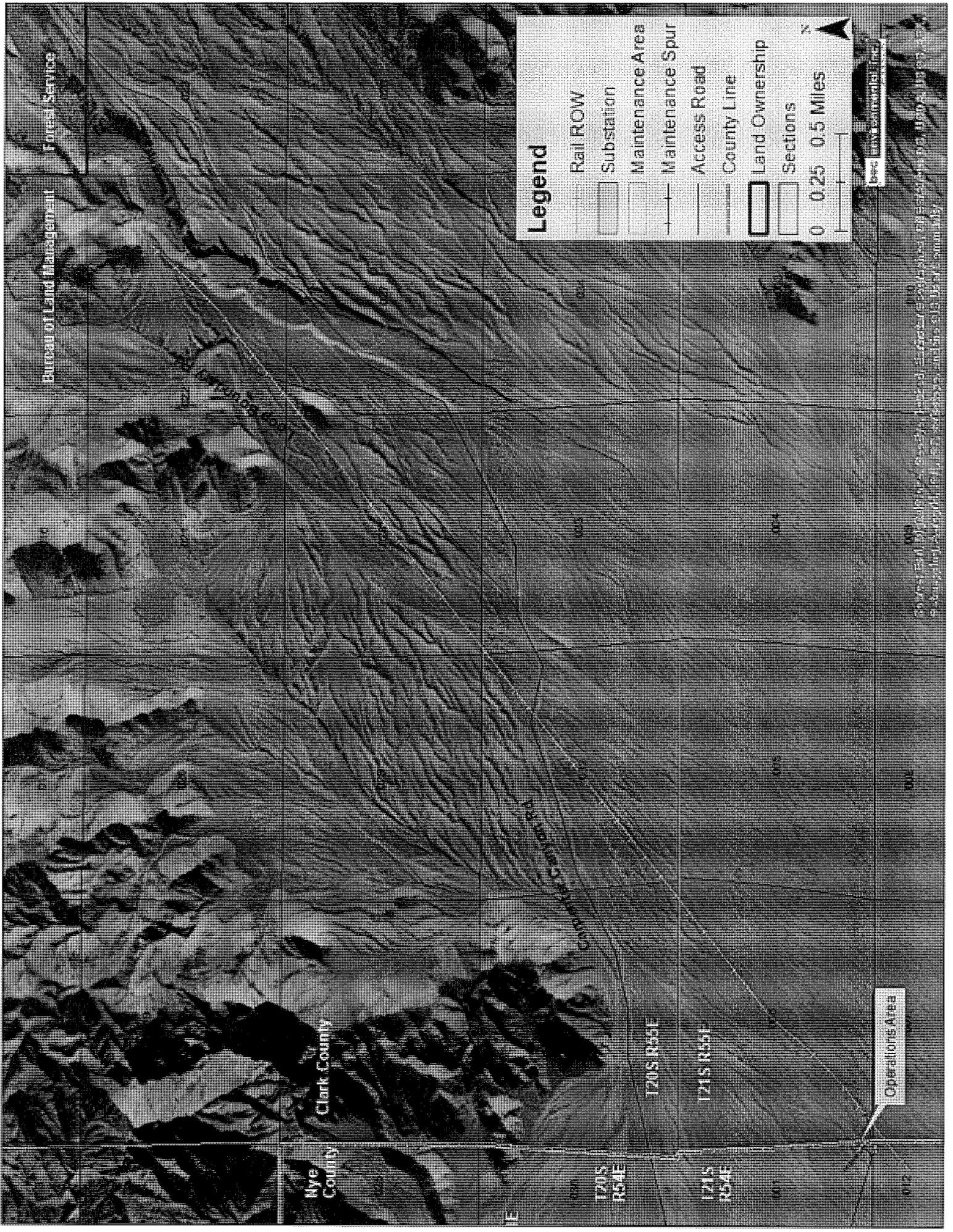
DATE	8/28/14	DWG	
DESIGNED	HBR/TP2	CHECKED	HBR/TP2
APPROVED	HBR/JDC	SCALE	AS SHOWN
PROJECT NO. 14-10-11-006		SHEET NO. 1	

VALLEY ELECTRIC ASSOCIATION
PAHRUMP, NEVADA



DATE	8/20/14	BY	HBR
DESIGNED	HBR/TP2	CHECKED	HBR/TP2
APPROVED	HBR/JDC	SCALE	AS SHOWN

FDR



Bureau of Land Management

Forest Service

Nye
County

Clark
County

1E

T20S
R54E

T20S R55E

T21S
R54E

T21S R55E

Operators Area

Comstock Canyon Road

W 138th St

W 137th St

W 136th St

W 135th St

W 134th St

W 133rd St

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© 2000, East of the Rockies Survey, Inc. All Rights Reserved. This map is a reproduction of a map created by East of the Rockies Survey, Inc. in 1998. All other rights reserved. This map is not to be used for any other purpose without the express written consent of East of the Rockies Survey, Inc.

Scale: Environmental Inc.

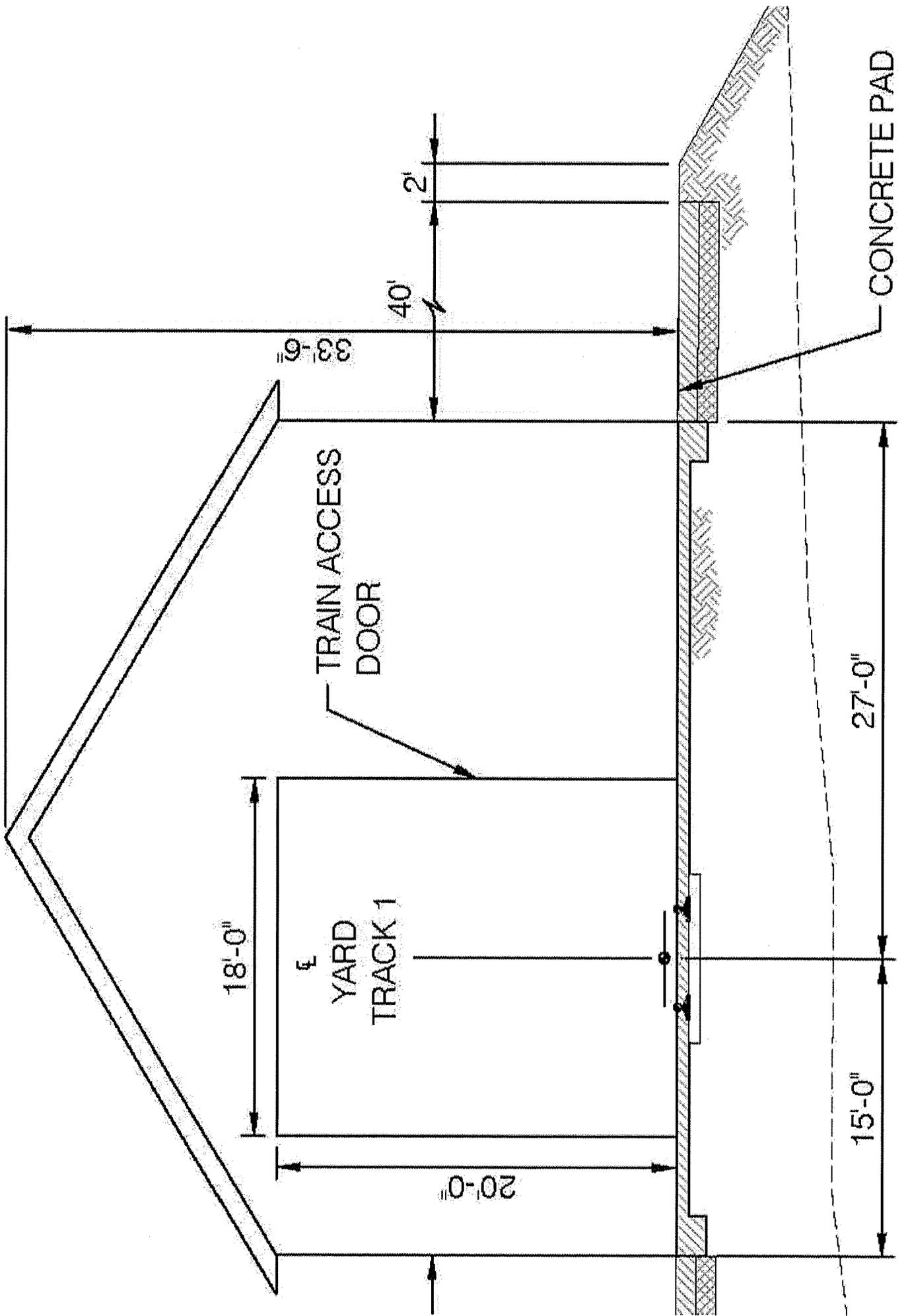
Legend

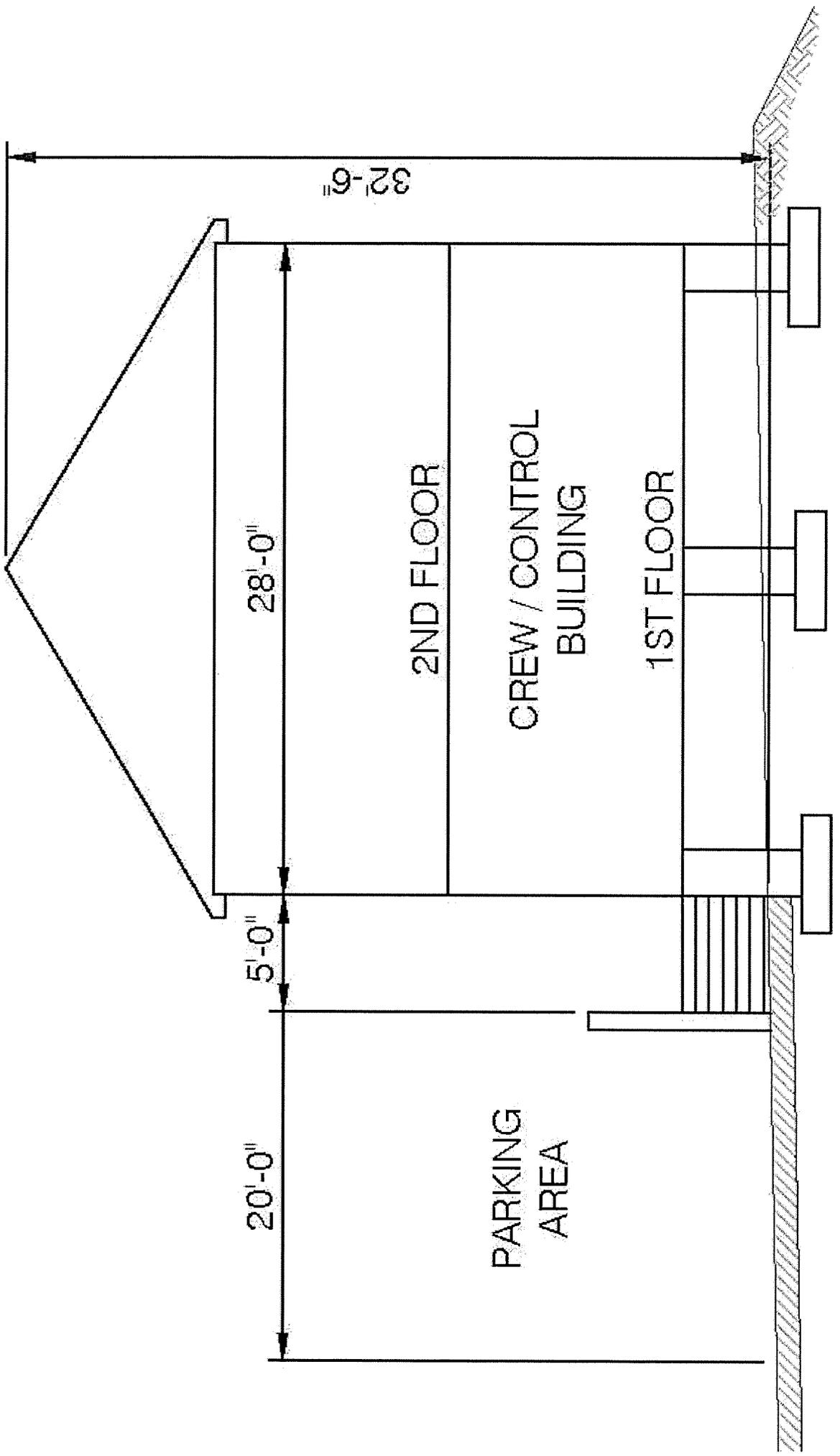
- Rail ROW
- Substation
- Maintenance Area
- Maintenance Spur
- Access Road
- County Line
- Land Ownership
- Sections

0 0.25 0.5 Miles

Scale: Environmental Inc.

EXHIBIT D





32'-6"

28'-0"

2ND FLOOR

CREW / CONTROL
BUILDING

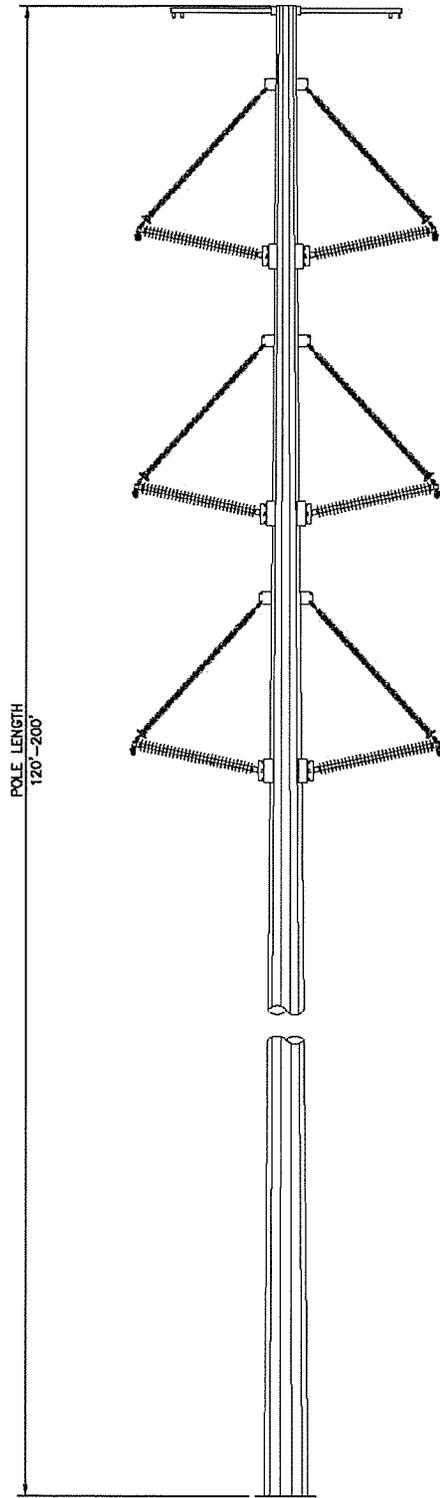
1ST FLOOR

5'-0"

20'-0"

PARKING
AREA

EXHIBIT E



PROJECT TITLE VALLEY ELECTRIC ASSOCIATION
ARES - GAMEBIRD

SHEET TITLE
TYPICAL DOUBLE CIRCUIT TANGENT

PROJECT NUMBER
236840

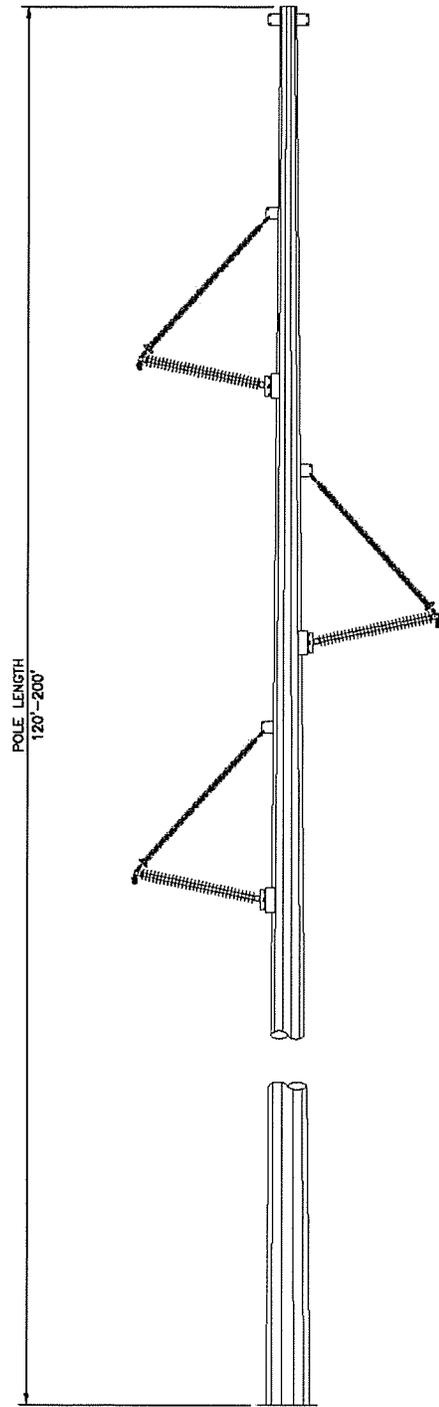
PROJECT MANAGER
J. CARLSON

DATE
08/05/2014

REFERENCE SHEET
-

REFERENCE DOCUMENT
-

EXHIBIT NUMBER
EXHIBIT B



PROJECT TITLE	VALLEY ELECTRIC ASSOCIATION ARES - GAMEBIRD
SHEET TITLE	TYPICAL SINGLE CIRCUIT TANGENT

PROJECT NUMBER	236840
PROJECT MANAGER	J. CARLSON
DATE	08/05/2014

REFERENCE SHEET	-
REFERENCE DOCUMENT	-
EXHIBIT NUMBER	EXHIBIT A

ARES Interconnection

	Single Circuit
Type of structure	Typical single circuit transmission support pole
Line length	Approximately 4,400 feet
Structure height	80 to 90 feet tall
Span Length	Approximately 800 feet
Structures per mile	6 to 7
Structure base	
Conductory types	
Clearance of conductor	
ROW width	100 feet
Access roads	A project site access road/transmission maintenance road will be constructed within the ROW.
Voltage	230,000

Existing to be Upgraded

	Single Circuit to Double Circuit
Type of structure	Typical double circuit transmission support pole
Line length	Approximately 7,200 feet
Structure height	90 to 100 feet tall
Span Length	Approximately 425 feet
Structures per mile	Approximately 12
Structure base	
Conductory types	
Clearance of conductor	
ROW width	Within existing of 100 feet
Access roads	Existing roads will be utilized.
Voltage	230,000

New East/West Connection to Gamebird Switch Station

	Double Circuit
Type of structure	Typical double circuit transmission support pole
Line length	Approximately 4,400 feet
Structure height	90 to 100 feet tall
Span Length	Approximately 425 feet
Structures per mile	Approximately 12
Structure base	
Conductory types	
Clearance of conductor	
ROW width	100 feet

Access roads	A transmission maintenance road will be constructed within the ROW.
Voltage	230,000

New North/South Conection from Gamebird Switch Station

	Single Circuit
Type of structure	Typical single circuit transmission support pole
Line length	Approximately 1,860 feet
Structure height	90 to 100 feet tall
Span Length	Approximately 800 feet
Structures per mile	6 to 7
Structure base	
Conductory types	
Clearance of conductor	
ROW width	100 feet
Access roads	A transmission maintenance road will be constructed within the ROW.
Voltage	230,000

Trackside Catenary Line

	Single Circuit
Type of structure	Wooden poles
Line length	Approximately 29,000 feet
Structure height	50 feet tall
Span Length	Approximately 325 feet
Structures per mile	Approximately 16
Structure base	
Conductory types	
Clearance of conductor	
ROW width	Within average 75 foot wide rail corridor
Access roads	Trackside maintenance road
Voltage	24,900

EXHIBIT F

BLM Decision Record

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

Decision Record
DOI-BLM-NV-S000-2015-0002-EA
February 2016

ARES Nevada, LLC's

File Number: N-92514

PREPARING OFFICE

U.S. Department of Interior
Bureau of Land Management
4701 North Torrey Pines Drive
Las Vegas, Nevada 89130
702-515-5000



1. INTRODUCTION

1.1 *Proposed Action Title/Type*

The Proposed Action is to construct, operate, and maintain a Regulation Energy Management (REM) facility to address current and future electrical grid reliability and stability issues, in accordance with Federal Energy Regulatory Commission (FERC) objectives and in conformance with the objectives set forth in the Las Vegas Resource Management Plan (RMP) and Record of Decision approved in October 1998. The proposed facility has been designed to provide environmentally-friendly and sustainable large-scale energy storage in support of promoting electrical grid stability and renewable energy consistency.

1.2 *Applicant/Proponent*

ARES Nevada, LLC is a Santa Barbara, California based company providing a deployable solution for grid-scale energy storage. ARES mission is to enable the electric grid to integrate unprecedented amounts of clean, environmentally responsible, renewable energy while maintaining the reliable electric service necessary to power growth and prosperity.

1.3 *Location of Proposed Action*

ARES proposes to locate this project exclusively on BLM-managed lands in the Carpenter Canyon area, east of Pahrump, in Nye and Clark Counties, Nevada. The alignment of the Proposed Action, including the facilities, maintenance area, and transmission, is contained within Township 20 South, Range 54 East, Sections 34 and 35; Township 20 South, Range 55 East, Sections 22, 27, 28, 31, 32, 33; Township 21 South, Range 54 East, Sections 01, 02, 03, 12; and Township 21 South, Range 55 East, Sections 06 and 07.

The Proposed Action would include 72 acres of permanent and 98 acres of temporary disturbance on BLM lands for a total of 170 acres.

1.4 *Overview of the Proposed Action*

ARES is proposing to construct, operate and maintain a REM facility on BLM managed land in Clark and Nye Counties, Nevada, to assist in transmission system stability and reliability, and electricity supply management on the regional electrical transmission grid. The Proposed Action is a 50 megawatt (MW) gravity based Energy Storage System which utilizes multiple electric locomotives operating on a single steep grade railroad track to store or deliver electric energy into the regional electrical grid -- using electricity from the grid to power the locomotives uphill, returning that electricity to the grid as the locomotives descend with their motors operating as generators. The Proposed Action is designed to balance variable energy demands and renewable energy contributions across an electrical grid system. The Proposed Action does not produce more energy than is introduced into its system; therefore it is not an electrical generation facility.

The Proposed Action includes the following components:

- A rail line corridor which will include an access/maintenance road and an overhead catenary system to connect the locomotives to the electrical system.
- Maintenance and operation facilities, including two buildings and a substation.

- Valley Electric Association (VEA) transmission upgrades, including new transmission lines to connect the REM facility to the existing Gamebird Switch Station, upgrading existing transmission lines directly affected by the project, and removing lines made redundant by the project.
- Expansion of the existing VEA Gamebird Switch Station to accommodate the new system.
- A facilities access road connecting to the existing transmission line maintenance road.

2. SELECTED ALTERNATIVE

As analyzed in the EA (EA# DOI-BLM-NV-S000-2015-0002) and supporting documents, the Proposed Action is the Selected Alternative.

The REM facility will provide up to 50 megawatts (MW) of gravity-based electrical energy regulation on 72 acres of BLM managed land, with temporary impacts to an additional 98 acres. The Selected Alternative was developed taking into consideration the technical aspects of the project and minimizing the facilities to be included within the West-wide Energy Corridor (Section 368 of the Energy Policy Act of 2005, 42 U.S.C. § 15926).

The Selected Alternative includes the following components:

- A 5.5 mile rail corridor, averaging 75 feet in width, which contains the rail line, a track-side maintenance/access road, and an overhead catenary system for interconnecting the locomotives to the electrical system.
- An Operations, Maintenance and Control Facilities Area includes both an operations and control building, a maintenance building for the train vehicles, and an employee and visitor parking lot. Both buildings will be constructed on concrete pads. Adjacent to this area, a transmission interconnection substation will be constructed.
- A Transmission and Access road corridor including a new transmission interconnection connecting the ARES substation to an existing VEA transmission line; upgrades to the affected portion of the existing transmission line; two new sections of transmission lines constructed to route the existing line into Gamebird Switch Station; removal of the existing 230kV transmission line currently bypassing Gamebird Switch Station; and expansion of the existing VEA Gamebird Switch Station within the existing Station right-of-way boundary.
- The new Operations, Maintenance and Control Facilities access road will be co-located with the new transmission interconnection from the existing transmission maintenance road.

3. MITIGATION MEASURES

Air Quality

- In accordance with federal air regulations, dust control permits from the Clark County Department of Air Quality (DAQ), for all soil-disturbing activities within Clark County, and Nye County Planning, for all soil-disturbing activities within Nye County, would be required for the Project. Managing fugitive emissions during construction and operation activities will be an adopted design feature and are a requirement for both counties. BLM approved fugitive dust control measures, including the regular application of water to disturbed surfaces, would reduce onsite emissions and serve to keep off-site emission levels reduced. In addition, Clark and/or Nye County may defer management and oversight of the dust control permit to the Nevada Division of Environmental Protection (NDEP), Air Quality Bureau.

Fuels/Fire Management and Noxious Weeds

- Implementation of standard BMPs and project stipulations would help identify, prevent, and treat the spread of noxious and/or invasive species and reduce potential wildfire impacts.
 - An Integrated Weed Management Plan will be prepared by the proponent and approved by the BLM Weed Coordinator. ARES proposes to reduce and control invasive plants within the project area by manual methods, and if necessary and approved by the BLM, herbicides, to lessen the potential for the dispersal or increased abundance of any new noxious weeds.
 - A Fire Protection Plan would be prepared by the proponent and approved by the BLM Southern Nevada District Fire Management Officer to minimize the occurrence of unwanted human-caused and naturally caused fires. The plan would describe an emergency notification procedure, site evacuation process, and fire suppression and prevention procedures. Project personnel shall be instructed as to the individual responsibility of the plan.
- Fire restrictions are generally enacted May through October. Compliance with fire restrictions is mandatory while fire restrictions are in effect. Specific non-compliant activities may be permitted in writing on a case by case basis by a line officer after review and approval by the Fire Management Officer (43 CFR 9212).
- Conditions that support wildfire can occur any time of the year in Southern Nevada. In general and when fire restrictions are not in effect, use standard fire prevention measures and best management practices to prevent fires (43 CFR 2805.12(d) or subsequent revisions). Minimize wildfire risk to assets or infrastructure where needed by maintaining a wildfire defensive space.
- The proponent shall immediately report fires to the BLM or appropriate dispatch center and make all accommodations to allow immediate safe entry of firefighting apparatus and personnel. In the event of a human caused wildfire the proponent will be held responsible for all costs of suppression and damaged resources pending a wildfire Origin and Cause Investigation. 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 proponent shall properly handle and preserve evidence in coordination with the BLM. The proponent shall report

to the Fire Investigator or BLM Incident Commander and enter into the fire origin area on BLM fires only when given permission to do so. The proponent will cooperate with the BLM in performance of fire investigation to determine wildfire cause.

- The holder, applicant or proponent shall be liable for damage or injury to the United States to the extent provided by 43 CFR 2807.12. The holder, applicant or proponent shall be held to a standard of strict liability for damage or injury to the United States caused or substantially aggravated by any of the following within the right-of-way or permit area:
 - Activities of the holder, applicant or proponent, including but not limited to construction, operation, maintenance, and termination of the facility.
 - Activities of other parties including but not limited to:
 - Land clearing and vegetation removal.
 - Earth-disturbing and earth-moving work.
 - Blasting.
 - Vandalism and sabotage.
- The maximum limitation for such strict liability damages shall not exceed two million dollars (\$2,000,000.00) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which damage or injury occurred. This section shall not impose strict liability for damage or injury resulting primarily from negligent acts or omissions of the United States.
- At the onset of project planning in the NEPA analysis phase, the project proponent or the project lead shall complete an Integrated Weed Management Plan (WMP) which would be prepared and submitted to the BLM for review and approval prior to construction. The WMP is a planning document that acknowledges, assesses, and provides an inventory of weed infestations for treatment. The WMP will recognize the project's impact on vegetation and define the expected treatments and activities necessary to both maintain the determined desired condition for the vegetation community, and control the weeds that may occur within the project area. Should the weed spread beyond the project foot print then these weeds will be treated as a part of the project. This will include access routes.
- The proponent is responsible for weed control on disturbed areas within the limits of the right-of-way. The proponent will consult with the BLM Weed Coordinator for planning acceptable weed control measures on all noxious weed infestations within the limits of the right-of-way. The use of pesticides shall comply with Federal and state laws governing their proper usage, storage and disposal, and any limitations imposed by the Secretary of the Interior.
- The project proponent shall coordinate project activities with the BLM Weed Coordinator (702-515-5000) regarding any proposed pesticide treatment. The project proponent shall prepare, submit, obtain and maintain a pesticide use proposal (PUP) for the proposed action.
- The project proponent shall limit the size of any vegetation and/or ground disturbance to the absolute minimum necessary to perform the activity safely and as designed. The

project proponent will avoid creating soil conditions that promote weed germination and establishment.

- The project proponent shall begin project operations in weed free areas whenever feasible before operating in weed-infested areas.
- The project proponent shall 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. The project proponent shall 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.
- BLM or the project proponent shall determine equipment-cleaning sites (if equipment is infested with weed seeds, plant parts or mud and dirt). Project related equipment and machinery (this especially includes the nooks and crannies of undercarriages) will be cleaned using compressed air or water to remove mud, dirt and plant parts before moving into and from relatively weed-free areas. Seeds and plant parts will be collected, bagged and deposited in dumpsters destined for local landfills, when practical.
- 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 in a dumpster for deposit in local landfills. Disposal methods may vary depending on the project. If you have questions consult with the LVFO Noxious Weed Coordinator.
- The project proponent shall evaluate options, including area closures, to regulate the flow of traffic on sites where native vegetation needs to be established.

Floodplains

- Application of proposed design features would reduce floodplain impacts. Surface water protection measures will be taken for runoff and storm events. US Army Corps of Engineers Nationwide Permit 43 applies to stormwater management facilities.

Threatened and Endangered Species

- Project actions will be minimized by following the Reasonable and Prudent Measures and Terms and Conditions as outlined in the appended BLMs Programmatic Biological Opinion (File No. 84320-2010-F-0365.R003) found in Appendix A of this document as well as the following additional mitigation measures:

Design and Construction Mitigation Measures

- During all handling procedures, desert tortoises will be treated in a manner to ensure that they do not overheat or exhibit signs of overheating (e.g., gaping, foaming at the mouth, etc.), or are placed in a situation where they cannot maintain surface and core temperatures necessary to their well-being. Desert tortoises will be kept shaded at all times until it is safe to release them. For the purposes of this permit, ambient air temperature will be measured in the shade, protected from wind, at a height of five centimeters above the ground surface.
- BLM wildlife staff and USFWS will be notified of any desert tortoise death or injury due to the project implementation by close of business on the following

work day. Any other reporting requirements detailed in the Biological Opinion will also be adhered to.

- All appropriate state and federal permits, including NDOW and USFWS permits for handling desert tortoises or their parts, will be acquired by the tortoise biologists or other personnel before project initiation and prior to handling any desert tortoise or their parts, or conducting any activity requiring a permit.
- The project proponent or permittee will submit a report to BLM wildlife biologist within 30 days of completion of the project construction documenting the number of acres disturbed; remuneration fees paid; and number of tortoises observed or taken during the project, which includes capture and displacement, killed, injured, or harassed by other means.
- Overnight parking and storage of equipment and materials, including stockpiling, will be within previously disturbed area or within project areas cleared by a tortoise biologist.
- Workers and project related individuals will be encouraged to carpool to and from the project site.
- Water applied to dirt roads and construction areas (trenches or spoil piles) for dust abatement will use the minimal amount needed to meet safety and air quality standards in an effort to prevent the formation of puddles, which could attract desert tortoises and common ravens to construction sites. During regular tortoise surveying duties, water application will be monitored to ensure puddles do not develop. Appropriate actions will be taken to reduce water application if standing water is observed.
- Litter control will be implemented and enforced by the project proponent. During construction all trash and food related waste will be placed in predator-proof containers and removed daily from the site. Trash, litter, project debris, etc. will be transferred to a designated solid waste disposal facility. Vehicles hauling trash must be secured to prevent litter from blowing out along the road.
- Workers will not feed wildlife.
- Speed limits will be posted at 15 miles per hour or below for construction traffic on all roads within the Action Area. Within Clark and Nye Counties, the speed limit is 25 miles per hour on unposted County or dirt roads; this speed will be established for all other activities at all times.
- Vehicle traffic will be restricted to existing access roads, unless otherwise authorized by the BLM and USFWS.
- Sand, gravel, and other material generated from cut activities within the project area will be used for fill and road construction to the extent possible. Necessary materials not collected from the site will be purchased from a permitted commercial source.
- The boundaries of all areas to be disturbed (including staging areas, access roads, and sites for temporary placement of spoils) will be delineated with flagging prior to construction activities. All disturbances, vehicles, and equipment will be confined to the flagged area.
- A BLM representative will be designated who will be responsible for overseeing compliance with the reasonable and prudent measures, terms and conditions,

reporting requirements, and reinitiation requirements contained in the Biological Opinion.

- Temporary disturbance areas will be restored in accordance with BLM restoration protocols for the project.
- Trenches, pits, or holes (if needed) will be covered or backfilled at the end of each day. If covering or backfilling is not feasible, escape ramps will be provided and biologists will inspect the areas each morning.

Operations Mitigation Measures

- Habitat fragmentation caused by the REM Facility will be minimized with the installation of dual purpose drainage/connectivity culverts, a single strategically placed desert tortoise crossing, and under-rail tortoise escapes (Map 2); dual purpose drainage/connectivity culverts will also ensure that local hydrologic dynamics and dependent plant communities are minimally impacted. Drainage/connectivity structures will be 36 or 48 inches in diameter, depending on the size and characteristics of the drainage channel encountered, and will be accessible to tortoises via tortoise ramps or other appropriate designs. The desert tortoise specific connectivity culvert will consist of a 12-inch tall arch (i.e., half of a 24-inch diameter pipe) with a flat bottom, which has been positioned to reduce the maxim distance between culverts-type crossings to 0.9 mile from an original gap of 1.4 miles. Under-rail tortoise escape passages will be installed approximately every 0.2 mile (1000 feet) to prevent tortoises from becoming trapped on the rail line and to provide additional avenues for connectivity.
- Within Clark and Nye Counties, the speed limit is 25 miles per hour on unposted County or dirt roads; this speed will be established for all activities at all times.
- A BLM representative will be designated who will be responsible for overseeing compliance with the reasonable and prudent measured, terms and conditions, reporting requirements, and reinitiation requirements contained in the Biological Opinion.
- Litter control will be implemented and enforced by the project proponent. All trash and food related waste will be placed in predator-proof containers (or within closed containers inside closed buildings) and removed as appropriate from the site. Trash, litter, project debris, etc. will be transferred to a designated solid waste disposal facility. Vehicles hauling trash must be secured to prevent litter from blowing out along the road.
- Workers will not feed wildlife.

Rehabilitation

- Affected areas will be re-vegetated and reclaimed to resemble their current state.
- All structures associated with the rail line will be removed by the project proponent and recycled, repurposed, or disposed of using current standards for demolition and disposal in Nevada.
- Coordination will occur with BLM to restore the original contour and vegetation of the land. Seeding will be conducted using BLM-recommended seed mixes.
- Material used for the operation of the facility will be recycled to the greatest extent possible upon removal.

- The following plans would be prepared and implemented that would further reduce impacts to listed species:
 - Worker Environmental Awareness Plan
 - Raven Management Plan
 - Integrated Weed Management Plan
- Anti-perch devices will be utilized. The transmission lines will be Avian Power Line Interaction Committee (APLIC) compliant and a raven management plan will be developed.

Migratory Birds

- Habitat-altering projects or portions of projects should be scheduled outside of the bird breeding season which generally occurs between February 15th and August 31st. If a project has to occur during the breeding season, then a qualified biologist must survey the area for nests immediately prior to commencement of construction activities. This shall include burrowing and ground nesting species in addition to those nesting in vegetation. If any active nests are found, an appropriately-sized buffer area must be established and maintained until the young birds fledge. The buffer area must connect to suitable, undisturbed habitat. As the above dates are a general guideline, if active nest are observed outside this range they are to be avoided as described above.
- Due to potential for electrocution, collision and nesting/perching by migratory birds on overhead power lines, the Proposed Project must 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.
- Guy wires should not be used if practicable. If not practicable, all guy wires must be marked in sections over the entire line (flight diverters or markers) so they are visible to prevent injury/mortality to birds through collision.
- Any lighting for on-ground facilities and equipment would be down-shielded to keep light within the boundaries of the site.

Restoration

- All short term or temporary use areas are required to be restored. A restoration plan is required to be developed according to the current BLM guidelines and requires review by BLM Botanist. Please contact the BLM Botanist for the current guidelines.

Land Use

- Interagency Operating Procedures state corridors are to be efficiently used. The applicant, assisted by the appropriate agency, shall consolidate the proposed infrastructure, such as access roads, wherever possible and utilize existing roads to the maximum extent feasible, minimizing the number, lengths, and widths of roads, construction support areas, and borrow areas.
- The Proposed Action may require coordination with the BLM to modify infrastructure to ensure it is compatible with the purpose of the corridor. Where design modifications are insufficient to reduce conflicts of the proposed transmission line and rail line with future uses of the Section 368 Energy Corridor (if required), ARES will work further with BLM to find an acceptable compromise without violating federal statutes.

- Any development within Sec. 368 corridors will abide by the Interagency Operating Procedures found in Appendix B of this document.

Human Health and Safety

- Any hazardous materials, solid or hazardous waste will be handled in accordance with all applicable federal, state and local compliance regulations, including training and the safe, transport, handling, storage and disposal of all solid and/or hazardous waste for the construction, operation and decommissioning phases of the Project.
- All applicable safety and management plans for the operation, control, and maintenance of all components will be developed and followed. A health and safety program will be developed to protect both workers and the general public during construction, operation, and decommissioning. The program should identify all applicable Federal and state occupational safety standards, establish safe work practices for each task (e.g., requirements for personal protective equipment and safety harnesses, Occupational Safety and Health Administration [OSHA] standard practices, measures for reducing occupational electromagnetic field [EMF] exposures), and define safety performance standards (e.g., electrical system standards). The program will include a training program to identify hazard training requirements for workers for each task and establish procedures for providing required training to all workers. Documentation of training and a mechanism for reporting serious accidents to appropriate agencies should be established.
- ARES will develop a comprehensive emergency plan that considers the vulnerabilities of the Proposed Project to credible events initiated by natural causes (earthquakes, avalanches, floods, high winds, violent storms, wildfires, etc.), human error, mechanical failure, cyber attack, or sabotage, and the potential for and possible consequences of those events.
- The track and roadway will be inspected daily, possibly employing robotic equipment that can work 24 hours a day, seven days a week, without direct manual control. The inspection criteria will be, at a minimum, based on Title 49 CRF 213 Track Safety Standards as published in the Federal Register (latest), supplemented by recommendations of the International Heavy Haul Association (IHHA) and in-house developed criteria based on best practices from a world-wide network of specialized, heavy-haul railroad operations. There will be an internal process for automatic evaluation of inspection results data, tied into a system to generate work orders that will direct the Maintenance of Way (MOW) Department to repair or replace any defective guideway elements. The MOW Department will operate on a proactive basis to minimize the possibility of guideway components slipping below the State of Good Repair, by grinding rail, correcting surface anomalies, ultrasound testing of rail, etc., based on the inspection data and a planning forecast program that prevents any serious exceptions from developing.
- The design, construction, operation, and maintenance of the 230 kV transmission line would meet or exceed the requirements of the National Electrical Safety Code (NESC), U.S. Department of Labor, OSHA, California Independent System Operator, Federal Energy Regulatory Commission, and VEA's requirements for safety and protection of landowners and their property.
- The Proposed Project will comply with FAA regulations, including lighting regulations.

- ARES will develop a fire management strategy to implement measures to minimize the potential for a human-caused fire during project construction, operation, and decommissioning. The strategy should clarify who has responsibility for fire suppression and hazardous fuels reduction, if necessary.
- Any wastewater generated on site in association with temporary, portable sanitary facilities will be periodically removed on a schedule approved by the BLM, by a licensed hauler, and introduced into an existing municipal sewage treatment facility.
- Construction activity is planned to limit noisy activities to the least noise-sensitive times of day (i.e., daytime only between 7 a.m. and 7 p.m. week days).

Hydrology

- A Site Drainage Plan, a Stormwater Pollution Prevention Plan (SWPPP), and best management practices (BMPs) will be developed and utilized. Implementation of measures identified in a SWPPP would reduce impacts to hydrologic conditions. Culverts will allow current flow patterns to remain while allowing the train to travel as necessary to achieve the energy storage goal. Runoff from the facilities area will be minimized through best management practices, such as the use of gravel for vehicle areas and allowing natural vegetation to grow where it does not interfere with operations.
- ARES will implement erosion controls complying with county, state, and Federal standards, such as jute netting, silt fences, and check dams, and will secure all necessary stormwater pollution prevention plan permits.
- ARES will minimize ephemeral wash crossings by access roads and rail tracks to the extent practicable. All structures crossing intermittent streams will be located and constructed so the structures do not decrease channel stability, or increase water velocity.
- ARES will not alter existing drainage systems and will give particular care to sensitive areas such as erodible soils or steep slopes. Soil erosion shall be reduced at culvert outlets by appropriate structures. Catch basins, roadway ditches, and culverts will be cleaned and maintained.

Recreation

- Delays to public travel would be limited in frequency and duration. The exact impact has not yet been determined but will be described in future Plan of Development updates submitted to the BLM for approval.
- All existing recreation routes impacted by the proposed project would be maintained for public use. Travel routes shall be maintained by providing crossing either over or under the proposed project.

Soils

- Although application of the proposed design features would reduce impacts to soils, disturbance of 170 acres of soils as a result of the Proposed Action would remain in the short term, and disturbance of 72 acres of soils as a result of the Proposed Action would remain in the long term. The use of water or an alternative BLM-approved dust palliative on disturbed area will preserve soil by reducing wind erosion resulting from the destruction of desert pavement in disturbed areas. Culverts will be installed in the rail bed to maintain the normal passage of rainwater and reduce erosion. Weed free straw bales or wattles may also be utilized as necessary to reduce erosion from storm water runoff

during construction. The reseeding of temporary disturbance areas after construction activities have been completed will also control erosion and reduce any potential remaining impacts.

Transportation

- ARES will consult with Nye County Planning authorities, the Sheriff's Office, and other agencies, regarding increased traffic during the construction phase, including an assessment of the number of vehicles per day, their size, and type. Specific issues of concern (e.g., location of school bus routes and stops) will be identified and addressed in the traffic management plan.

Vegetation

- During construction, impacts would be limited to as small a footprint as possible through the use of flags to delineate boundaries. Temporary disturbance areas will be restored in accordance with BLM guidelines in order to reduce short and long-term impacts. Upon final closure of the site at the end of the project life, vegetation will be restored to comply with current BLM guidelines.
- ARES will develop an integrated vegetation management plan consistent with applicable regulations and agency policies for the control of unwanted vegetation, noxious weeds, and invasive species (E.O. 13112). The plan will address monitoring; ROW vegetation management; the use of certified weed-seed-free hay, straw, and/or mulch; the cleaning of vehicles to avoid the introduction of invasive weeds; education of personnel on weed identification, the manner in which weeds spread, and the methods for treating infestations.
- To restore disturbed habitats, ARES will prepare a habitat restoration plan to identify the approach and methods to be used to restore habitats disturbed during project construction activities. The plan will be designed to expedite the recovery to natural habitats supporting native vegetation, and require restoration to be completed as soon as practicable after completion of construction, minimizing the habitat converted at any one time. To ensure rapid and successful restoration efforts, the plan will include restoration success criteria, including time frames, which will be developed in coordination with the BLM.
- In addition, the following plans would be prepared and implemented that would further reduce impacts to vegetation:
 - Fire Protection Plan
 - Integrated Weed Management Plan
 - Decommissioning and Site Reclamation Plan

Visual Resources

- All lighting would be designed to provide the minimum illumination needed to achieve safety and security objectives, and be directed downward and shielded to focus illumination on the desired areas. Lighting is planned to be installed at the exterior of the buildings and within the on-site substation.
- Standard rail safety lighting will be installed at the Carpenter Canyon Road crossing. This lighting will only be activated when the train is approaching the crossing. The train

shuttle cars will have lights identifying the head and tail of the train, and possibly the sides of each shuttle car (this may just be reflective items).

- Structures within the facilities area, as well as the train shuttle cars, will be colored to conform to the current BLM Standard Environmental Colors chart (Standard Environmental Color Chart CC-001: June 2013), selecting the most appropriate color to as closely as possible match the predominant background colors of the immediate area. Color selection will be a shade or two darker than the surrounding landscape to account for natural shadows, normal fading, and weathering, and be approved by the BLM.

Wild Horse and Burro

- Individuals will not harass (feed, pet, chase, etc.) wild horses and/or burros if encountered on or near the roads or work areas. If they do see any wild horses and burros, they should keep a safe distance; they are wild animals and can be unpredictable, especially during foaling and breeding season.
- No fences are anticipated, except those required for safety and security purposes around the facilities area, to avoid disrupting horse and burro free roaming to the extent possible.
- The rail line will be constructed at-grade, transmission associated with shuttle train car operation will be an overhead catenary, and the rail corridor will not be fenced; current rail corridor design will minimize impacts to the free-roaming nature of wild horses and burros.
- Current wild horse and burro mitigation measures would remain in effect unless/until BLM made changes or another use was found for the land.

Wildlife

- Litter pickup will be specifically addressed in mitigation measures for project construction and operation.
- Anti-perching devices may be installed on track side catenary poles, where practical.
- Observations by project staff of potential wildlife problems, including wildlife mortality, will be immediately reported to the applicable BLM authorized officer.
- All NDOW protocols will be followed for any NDOW protected species found during pre-construction surveys and any necessary permits would be obtained.
- Any Gila monster (state sensitive) encounters during project construction will be reported immediately to NDOW at (702) 486-5127.
- There is currently no surface water in the immediate area around the Action Area and the nearest man-made water source is more than one-quarter mile away. No standing water or ponds will be developed as part of the Proposed Project.
- Fencing will only be installed around the facilities area, for safety and security purposes, and should not impact or block any free movement of bighorn sheep or other big-game species
- To reduce impacts to bats lighting should be kept to the absolute minimum and be down lighting only.

4. COMPLIANCE

The Proposed Action conforms to the Las Vegas RMP and Record of Decision approved in October 1998. Sections that specifically apply to this Project include:

- RW-1-h, Management Direction: “All public land within the planning area, except as stated in RW-1-c through RW-1-g area available at the discretion of the agency for rights-of-way under the Federal Land Management Policy Act.”

5. FINDING OF NO SIGNIFICANT IMPACT

As explained in the Finding of No Significant Impact (FONSI), the impacts of the Selected Action have been analyzed in the EA and determined not to result in significant impacts to the quality of the human environment, individually or cumulatively with other actions in the general area under NEPA.

6. CONSULTATION AND COORDINATION

Refer to Section 4, Table 4-1 of the EA (DOI-BLM-NV-S000-2015-0002-EA) for a list of Tribes, Persons, Organizations, and Agencies consulted including a summary of the findings and conclusions.

7. PUBLIC INVOLVEMENT

As required, a 30-day public comment period was provided from October 12-November 11, 2015. A public information meeting was held in Pahrump, NV on Wednesday, October 28, 2015. A summary of the comments received, responses to comments, and any changes as a result of these comments can be found in Appendix A of the FONSI.

8. DECISION RATIONALE

Based on information in the EA and consultation with my staff, we have decided to approve the selected action with the mitigation measures outlined above. This decision addresses the purpose and need for the action as it will assist with current and future grid reliability and stability issues in accordance with Federal Energy Regulatory Commission (FERC) objectives and in conformance with the objectives set forth in the Las Vegas Resource Management Plan (RMP) and Record of Decision approved in October 1998. Under Objective RW-1, the BLM is to “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,” with Management Direction RW-1-h stating, “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 rights-of-way under the authority of the Federal Land Policy Management Act” (FLPMA).

ADMINISTRATIVE REMEDIES

Administrative remedies may be available to those who believe they will be adversely affected by this decision. This decision may be appealed to the Interior Board of Land Appeals, Office of the Secretary, in accordance with the regulations contained in 43 CFR, Part 4 and BLM Form 1842-1. If an appeal is taken, your notice of appeal must be filed in this office (at the above address) within 30 days from receipt of this decision. The appellant has the burden of showing that the decision appealed from is in error.

If you wish to file a petition (request) pursuant to regulation 43 CFR 2801.10 or 2881.10 for a stay (suspension) of the effectiveness of this decision during the time that your appeal is being reviewed by the Board, the petition for a stay must accompany your notice of appeal. A petition for a stay is required to show sufficient justification based on the standards listed below. Copies of the notice of appeal and petition for a stay must also be submitted to each party named in this decision and to the Interior Board of Land Appeals and to the appropriate Office of the Solicitor (see 43 CFR 4.413) at the same time the original documents are filed with this office. If you request a stay, you have the burden of proof to demonstrate that a stay should be granted.

Standards for Obtaining a Stay

Except as otherwise provided by law or other pertinent regulation, a petition for a stay of a decision pending appeal shall show sufficient justification based on the following standards:

- (1) The relative harm to the parties if the stay is granted or denied,
- (2) The likelihood of the appellant's success on the merits,
- (3) The likelihood of immediate and irreparable harm if the stay is not granted, and
- (4) Whether the public interest favors granting the stay.

FOR Frederick Marcell 2/19/2016
Vanessa L. Hice, Assistant Field Manager Lands Division Date
Las Vegas Field Office

Deborah J. MacNeill 2/24/2016
Deborah J. MacNeill, Field Manager Date
Pahrump Field Office

Reasonable and Prudent Measures and Terms and Conditions for the ARES Project as found in the Appended BLM Programmatic Biological Opinion (File No. 84320-2010-F-0365.R003)

RPM 1. Minimize injury and mortality of tortoises

- 1.a. *Field Contact Representative*—BLM shall ensure a Field Contact Representative (FCR) (also called a Compliance Inspection Contractor) is generally designated for each contiguous stretch of construction activity or isolated work areas. The FCR will serve as an agent of BLM and the Service to ensure that all instances of non-compliance or incidental take are reported. BLM has discretion over approval of potential FCRs; however, those also acting as authorized desert tortoise biologists must also be approved by the Service (see Term and Condition 1.c). All FCRs will report **directly** to BLM and the Service.

The FCR, authorized desert tortoise biologist, and monitors (see Term and Condition 1.c.) shall have a copy of all stipulations when work is being conducted on the site and will be responsible for overseeing compliance with terms and conditions of the ROW grant, including those for listed species. BLM shall ensure the FCR and authorized desert tortoise biologists have authority to halt any activity that is in violation of the stipulations. The FCR shall be onsite year-round during all project activities.

Within 3 days of employment or assignment, the project proponent and BLM shall provide the Service with the names of the FCR. An FCR is not typically required for operation and maintenance activities.

- 1.b. *Authorized desert tortoise biologist*—All authorized desert tortoise biologists (and monitors) are agents of BLM and the Service and shall report directed to BLM and the proponent concurrently regarding all compliance issues and take of desert tortoises; this includes all draft and final reports of non-compliance or take. The initial draft report shall be provided to BLM and Service within 24 hours of the observation of injury or mortality take or non-compliance.

An authorized desert tortoise biologist will be assigned to each piece or group of large equipment engaged in activities that may result in take of desert tortoise (for example, clearing, blasting, grading, lowering in pipe, hydrostatic testing, backfilling, recontouring, and reclamation activities) and other work areas that pose a risk to tortoises. BLM has discretion on whether to require a monitor instead of an authorized desert tortoise biologist to monitor equipment that is low risk to tortoises.

Authorized desert tortoise biologists, monitors, and the FCR (see Term and Condition 1.a.) shall be responsible for ensuring compliance with all conservation measures for the project. This responsibility includes: (1) enforcing the litter-control program; (2) ensuring that desert tortoise habitat disturbance is restricted

to authorized areas; (3) ensuring that all equipment and materials are stored within the boundaries of the construction zone or within the boundaries of previously-disturbed areas or designated areas; (4) ensuring that all vehicles associated with construction activities remain within the proposed construction zones; (5) ensuring that no tortoises are underneath project vehicles and equipment prior to use or movement; (6) ensuring that all monitors (including the authorized desert tortoise biologist) have a copy of the required measures in their possession, have read them, and they are readily available to the monitor when on the project site.

An authorized desert tortoise biologist will serve as a mentor to train desert tortoise monitors and will approve monitors if required. An authorized desert tortoise biologist is responsible for errors committed by desert tortoise monitors.

An authorized desert tortoise biologist is responsible for recording and reporting each desert tortoise handled. Information will include the following: location (GPS), date and time of observation, whether the desert tortoise was handled, general health and whether it voided its bladder, location desert tortoise was moved from and location moved to, unique physical characteristics of each tortoise, and effectiveness and compliance with the desert tortoise protection measures. This information will be provided **directly** to BLM and the Service.

Potential authorized desert tortoise biologists must submit their statement of qualifications to the Service's Southern Nevada Fish and Wildlife Office in Las Vegas for approval, allowing a minimum of 30 days for Service response. The statement form is available on the internet at:

http://www.fws.gov/nevada/desert_tortoise/auth_dt_form.htm.

Prior to final approval to begin work on the project, the authorized desert tortoise biologists will have read the required measures (terms and conditions and other stipulations) and have a copy of the measures available at all times while on the project site. BLM shall provide the appropriate agency contact for the project to the Service and the Service will include the forms with approval letters. Biologists and monitors should be visibly identifiable on the project site, which may include use of a uniquely designated hardhat or safety vest color.

- 1.d. *Desert tortoise monitor*—Desert tortoise monitors assist an authorized desert tortoise biologist during surveys and serve as apprentices to acquire experience. Desert tortoise monitors ensure proper implementation of protective measures, and record and report desert tortoises and sign observations in accordance with Term and Condition 1.c. They will report incidents of noncompliance to the authorized desert tortoise biologist or FCR. No monitors shall be on the project site unless supervised by an authorized desert tortoise biologist or approved by the BLM.

If a desert tortoise is immediately in harm's way (e.g., certain to immediately be crushed by equipment), desert tortoise monitors may move the desert tortoise then place it in a designated safe area until an authorized desert tortoise biologist

assumes care of the animal.

Desert tortoise monitors may not conduct field or clearance surveys or other specialized duties of an authorized desert tortoise biologist unless directly supervised by an authorized desert tortoise biologist or approved to do so by the Service; “directly supervised” means an authorized desert tortoise biologist has direct sight and voice contact with the desert tortoise monitor (i.e., within approximately 200 feet of each other).

Within 3 days of employment or assignment, the project proponent and BLM shall provide the Service with the names of desert tortoise monitors who would assist an authorized desert tortoise biologist.

- 1.e. *Desert tortoise education program*—A desert tortoise education program shall be presented to all personnel on site during construction activities by an agency or authorized desert tortoise biologist. The Service, BLM, and appropriate state agencies shall approve the program. At a minimum, the program shall cover desert-specific Leave-No-Trace guidelines, the distribution of desert tortoises, general behavior and ecology of this species, sensitivity to human activities, threats including introduction of exotic plants and animals, legal protection, penalties for violation of State and Federal laws, reporting requirements, and project measures in this biological opinion). All field workers shall be instructed that activities must be confined to locations within the approved areas and their obligation to walk around and check underneath and vehicles and equipment before moving them (or be cleared by an authorized desert tortoise biologist). In addition, the program shall include fire prevention measures to be implemented by employees during project activities. The program shall instruct participants to report all observations of desert tortoise and their sign during construction activities to the FCR and authorized desert tortoise biologist.
- 1.f. *Vehicle travel*— Project personnel shall exercise vigilance when commuting to the project area to minimize risk for inadvertent injury or mortality of all wildlife species encountered on paved and unpaved roads leading to and from the project site. Speed limits will be clearly marked, and all workers will be made aware of these limits. Onsite, personnel shall carpool to the greatest extent possible.

During the desert tortoise less-active season (generally November through February), vehicle speed on project-related access roads and in the work area will not exceed 25 mph. All vehicles and construction equipment will be tightly grouped.

During the more active season (generally March through October), and if temperatures are above 60 but below 95°F for more than 7 consecutive days, vehicle speed on project-related access roads and in the work area will not exceed 15 mph. All vehicles and construction equipment will operate in groups of no more than three vehicles. An authorized desert tortoise biologist and desert tortoise monitor will escort or clear ahead of vehicles and equipment for ROW

travel. The escort will be on foot and clear the area of tortoises in front of each traveling construction equipment group (see *Desert tortoise clearance*). The escort will use a recreational vehicle with ground visibility (e.g., UTV); however, at least one authorized desert tortoise biologist and one desert tortoise monitor must ride together and survey both sides of the vehicle. The pace will be determined by an authorized desert tortoise biologist and shall be slow enough to ensure adequate inspection.

New access and spur road locations will be sited to avoid potentially active tortoise burrows to the maximum extent practicable.

- 1.g. *Unauthorized access*—BLM shall ensure that unauthorized personnel, including the public and off-duty project personnel, do not travel on project-related temporary access roads, to the greatest extent practicable.

During the more-active season (generally March through October), and if temperatures are above 60 but below 95°F for more than 7 consecutive days, project- and non-project-related activities on all access roads that intersect the ROW will be monitored and logged. During construction, the ROW will be fenced at public roads that intersect the ROW. Signs will say that access on the ROW is strictly prohibited except by authorized personnel and that violators will be prosecuted.

- 1.h. *Desert tortoise clearance*—Prior to surface-disturbing activities, authorized desert tortoise biologists potentially assisted by desert tortoise monitors, shall conduct a clearance survey to locate and remove all desert tortoises from harm's way including areas to be disturbed using techniques that provide full coverage of all areas (Service 2009). During the more-active season, clearance surveys will be conducted either the day prior to, or the day of, any surface-disturbing activity. During the less-active season, clearance surveys will be conducted within 7 days prior to any surface-disturbing activity. No surface-disturbing activities shall begin until two consecutive surveys yield no individuals.

An authorized biologist shall excavate all burrows that have characteristics of potentially containing desert tortoises in the area to be disturbed with the goal of locating and removing all desert tortoises and tortoise eggs. During clearance surveys, all handling of desert tortoises and their eggs and excavation of burrows shall be conducted solely by an authorized desert tortoise biologist in accordance with the most current Service-approved guidance (currently Service 2009). If any active tortoise nests are encountered, the Service must be contacted immediately, prior to removal of any tortoises or eggs from those burrows, to determine the most appropriate course of action. Unoccupied burrows shall be collapsed or blocked to prevent desert tortoise entry. Outside construction work areas, all potential tortoise burrows and pallets within 50 feet of the edge of the construction work area shall be flagged. If the burrow is occupied by a tortoise during the less active season, the tortoise shall be temporarily penned (see Term and Condition 1.k.). No stakes or flagging shall be placed on the berm or in the

opening of a desert tortoise burrow. Desert tortoise burrows shall not be marked in a manner that facilitates poaching. Avoidance flagging shall be designed to be easily distinguished from access route or other flagging, and shall be designed in consultation with experienced construction personnel and authorized biologists. All flagging shall be removed following construction activities.

An authorized desert tortoise biologist will inspect areas to be backfilled immediately prior to backfilling.

- 1.i. *Desert tortoise in harm's way*—Any project-related activity that may endanger a desert tortoise shall cease if a desert tortoise is seen on the project site. Project activities may resume after an authorized desert tortoise biologist or desert tortoise monitor (see restrictions in Term and Condition 1.d.) removes the desert tortoise from danger or after the tortoise has moved to a safe area on its own.

During the more-active season and if temperatures are above 60 but below 95°F for more than 7 consecutive days, at least 1 monitor shall be assigned to observe spoil piles prior to excavation and covering.

- 1.j. *Handling of desert tortoises*—Desert tortoises shall only be moved by an authorized desert tortoise biologist or desert tortoise monitor (see restrictions in Term and Condition 1.d.) solely for the purpose of moving the tortoises out of harm's way. During construction, operation, and maintenance, an authorized desert tortoise biologist shall pen, capture, handle, and relocate desert tortoises from harm's way as appropriate and in accordance with the most current Service-approved guidance. No tortoise shall be handled by more than one person. Each tortoise handled will be given a unique number, photographed, and the biologist will record all relevant data on the Desert Tortoise Handling and Take Report (Appendix E of PBO) to be provided to BLM in accordance with the project reporting requirements.

Desert tortoises that occur aboveground and need to be moved from harm's way shall be placed in the shade of a shrub, 150 to 1,640 feet from the point of encounter. In situations where desert tortoises must be moved more than 1,640 feet, translocation procedures may be required. Translocation would likely result in a level of effect to the desert tortoise that would require appending this biological opinion.

If desert tortoises need to be moved at a time of day when ambient temperatures could harm them (less than 40°F or greater than 95°F), they shall be held overnight in a clean cardboard box. These desert tortoises shall be kept in the care of an authorized biologist under appropriate controlled temperatures and released the following day when temperatures are favorable. All cardboard boxes shall be discarded after one use and never hold more than one tortoise. If any tortoise active nests are encountered, the Service must be contacted immediately, prior to removal of any tortoises or eggs from those burrows, to determine the most appropriate course of action.

Desert tortoises located in the project area sheltering in a burrow during the less-active season may be temporarily penned in accordance with Term and Condition 1.k. at the discretion of an authorized desert tortoise biologist. Desert tortoises should not be penned in areas of moderate to heavy public use, rather they should be moved from harm's way in accordance with the most current Service-approved guidance (currently Service 2009).

Desert tortoises shall be handled in accordance with the Desert Tortoise Field Manual (Service 2009). Equipment or materials that contact desert tortoises (including shirts and pants) shall be sterilized, disposed of, or changed before contacting another tortoise to prevent the spread of disease. All tortoises shall be handled using disposable surgical gloves and the gloves shall be disposed of after handling each tortoise. An authorized desert tortoise biologist shall document each tortoise handling by completing the Desert Tortoise Handling and Take Report (Appendix E of the PBO).

- 1.k. *Penning*—Penning shall be accomplished by installing a circular fence, approximately 20 feet in diameter to enclose and surround the tortoise burrow. The pen should be constructed with 1-inch horizontal by 2-inch vertical, galvanized welded wire. Steel T-posts or rebar should be placed every 5 to 6 feet to support the pen material. Pen material will extend 18 to 24 inches aboveground. The bottom of the enclosure will be buried 6 to 12 inches or bent towards the burrow, have soil mounded along the base, and other measures implemented to ensure zero ground clearance. Care shall be taken to minimize visibility of the pen by the public. An authorized desert tortoise biologist or desert tortoise monitor shall check the pen at a frequency to ensure that the desert tortoise is secure and not stressed. No desert tortoise shall be penned for more than 48 hours without written approval by the Service. All instances of penning or issues associated with penning shall be reported to the Service within 3 days (see Appendix E of the PBO).
- 1.l. *Temporary tortoise-proof fencing*—All construction areas, including open pipeline trenches, hydrostatic testing locations, and tie-in work shall be fenced with temporary tortoise-proof fencing (e.g., silt fencing) or inspected by an authorized desert tortoise biologist periodically throughout and at the end of the day and immediately the next morning. BLM and the Service will determine the appropriate length of open trench that will be allowed on the project.

Fencing will be designed in a manner that reduces the potential for desert tortoises and hatchlings to access the construction areas. Thus, the lower 6 to 12 inches of fencing will be folded outward (i.e., away from the construction area and towards the direction a tortoise would approach the work area), and covered with sufficient amount of soil, rocks, and staking to maintain zero ground clearance and secure the bottom section of material. An authorized desert tortoise biologist will check the integrity of the fencing every 2 hours and ensure that there are no breaches in the fencing and no desert tortoises pacing the fence. After the fencing

is erected and secure, the inside will be cleared by an authorized desert tortoise biologist. The fencing must remain closed during any construction activities.

- 1.m. *Permanent tortoise-proof fencing*—Tortoise-proof fencing shall be installed around the boundary of permanent aboveground facilities that require regular monitoring and maintenance and other areas as directed by the BLM or Service. Fence specifications will be consistent with those approved by the Service (Service 2009). Tortoise guards shall be placed at all road access points where desert tortoise-proof fencing is interrupted, to exclude desert tortoises from the facility. Gates shall provide minimal ground clearance and deter ingress by desert tortoises. Permanent tortoise-proof fencing along the project area shall be appropriately constructed, monitored, and maintained. Fencing shall be inspected in accordance with Table 1 and reports prepared in accordance with Term and Condition 7.c. unless modified by the Service. Monitoring and maintenance shall include regular removal of trash and sediment accumulation and restoration of zero ground clearance between the ground and the bottom of the fence, including re-covering the bent portion of the fence if not buried.

Table 1. Desert tortoise fence inspection requirements

Condition	Minimum Requirements
First week following fence installation; tortoises active	Inspect fence perimeter, tortoise guards, and gates twice per day, timed to occur when tortoises may be pacing the fenceline.
First week following fence installation; tortoises inactive	Inspect fence perimeter, tortoise guards, and gates once per day.
Beginning the second week following fence construction, tortoises active	Inspect fence perimeter, tortoise guards, and gates once per day.
Beginning the second week following fence construction, tortoises inactive	Inspect fence perimeter, tortoise guards, and gates once per month.
Following major storm event, tortoises active	Inspect fence perimeter, tortoise guards, and gates within 48 hours.
Following major storm event, tortoises inactive	Inspect fence perimeter, tortoise guards, and gates within 72 hours.
Breach in fence observed, tortoise guard or gate requires maintenance, tortoises active	Repair within 48 hours of breach occurrence.
Breach in fence observed, tortoise guard or gate requires maintenance, tortoises inactive	Repair within 1 week of breach occurrence.

- 1.n. *Wildlife escape ramps*—Earthen plugs, with wildlife escape ramps on either side of the plug, will be provided in open trench segments at no greater than every 0.25 mile. These distances will be reduced if the FCR and authorized desert tortoise biologist determine that the plug and escape ramp spacing is insufficient to facilitate animal escape from the trench. Any tortoise that is found in a trench or excavation shall be promptly removed by an authorized desert tortoise biologist in accordance with the most current Service-approved guidance. If the authorized

desert tortoise biologist is not allowed to enter the trench for safety reasons, the alternative method of removal must have prior approval by the Service.

- 1.o. *Dust control*—Water applied for dust control shall not be allowed to pool outside desert-tortoise fenced areas, as this can attract desert tortoises. Similarly, leaks on water trucks and water tanks will be repaired to prevent pooling water. An authorized desert tortoise biologist will be assigned to patrol each area being watered immediately after the water is applied and at approximate 60-minute intervals until the ground is no longer wet enough to attract tortoises if conditions favor tortoise activity.
- 1.p. *Blasting*—If blasting is required in desert tortoise habitat, detonation shall only occur after the area has been surveyed and cleared by an authorized desert tortoise biologist. A 200-foot radius area around the blasting site shall be surveyed and all desert tortoises aboveground within this 200-foot radius of the blasting site shall be moved 500 feet from the blasting site, placed in unoccupied burrow, and temporarily penned (see Term and Condition 1.k.) to prevent tortoises that have been temporarily relocated from returning to the site. Tortoises in burrows would be left in their burrows. All burrows, regardless of occupied status, will be stuffed with newspapers, flagged, and location recorded using a GPS unit. Immediately after blasting, newspaper and flagging will be removed. If a burrow or coversite has collapsed which could be occupied, it shall be excavated to ensure that no tortoises have been buried and are in danger of suffocation.
- 1.q. *Ravens and Raptors*— Transmission line support structures and other facility structures shall be designed to discourage their use by ravens and raptors for perching or nesting (e.g., by use of anti-perching devices) in accordance with the most current Avian Power Line Interaction Committee guidelines (see terms and conditions 2.b and 2.c.).
- 1.r. *Timing of construction*—The BLM shall ensure that when possible, the project proponent schedules and conducts construction, operation, and maintenance activities within desert tortoise habitat during the less-active season (generally October 31 to March 1) and during periods of reduced desert tortoise activity (typically when ambient temperatures are less than 60 or greater than 95°F). All vehicles and equipment that are not in areas enclosed by desert tortoise exclusion fencing will stop activities in desert tortoise habitat during rainfall events in the more-active season (generally March 1 to October 31), and if temperatures are above 60 but below 95°F for more than 7 consecutive days. The FCR or designee will determine, in coordination with the BLM and Service, when it is appropriate for project activities to continue.

RPM 2. Predator control.

- 2.a. *Litter control*—A litter control program shall be implemented to reduce the attractiveness of the area to opportunistic predators such as desert kit foxes, coyotes, and common ravens. Trash and food items will be disposed of properly

in predator-proof containers with predator-proof lids. Trash containers will be emptied and construction waste will be removed daily from the project area and disposed of in an approved landfill.

- 2.b. *Deterrence*—The project proponent will implement measures to discourage the presence of predators on site (coyotes, ravens, etc.), including elimination of available water sources, designing structures to discourage potential nest sites, and use of hazing to discourage raven presence.
- 2.c. *Monitoring and predator control*—The project proponent will monitor for the increased presence of ravens and other potential human-subsidized predators in the vicinity of the project area. A qualified biologist (not necessarily an authorized desert tortoise biologist) shall conduct monthly nest surveys of potential nest sites (e.g., power transmission towers/poles) during the raven breeding season (generally February 1 to April 30) and document the presence of all nests and the species using them. During these monthly surveys, an authorized biologist will also document any sign of predation of desert tortoises below the nest and in the vicinity of the transmission line. If sign of predation is found under a nest, control measures will be implemented in coordination with the Service. The frequency of these nest surveys may be modified as agreed upon by BLM and the Service.

RPM 3. Impacts to tortoise habitat.

- 3.a. *Habitat protection plans*—BLM shall ensure that the applicants develop and implement an approved fire prevention and response plan, erosion control plan, and a weed management plan approved by BLM prior to surface disturbance.
- 3.b. *Restoration plan*—BLM shall ensure that the applicant develop and implement a restoration/reclamation plan. The plan will describe objectives and methods to be used, species of native plants and seed mixture to be used, time of planting, success standards, actions to take if restoration efforts fail to achieve the success standards, and follow-up monitoring. The plan will be prepared and approved prior to the surface disturbance phase of the project.
- 3.c. *Minimizing new disturbance*—Cross-country travel outside designated areas shall be prohibited. Native vegetation will be left in place wherever possible. All equipment, vehicles, and construction materials shall be restricted to the areas designated prior to project activities and new disturbance will be restricted to the minimum necessary to complete the task. All work area boundaries shall be conspicuously staked, flagged, or otherwise marked to minimize surface disturbance activities. To the maximum extent possible, access to splicing and tensioning site will occur by overland travel (no blading). The FCR shall ensure that blading is conducted only when necessary.
- 3.d. *Weed prevention*—Vehicles and equipment shall be cleaned with a high pressure washer prior to arrival in desert tortoise habitat and prior to departure from areas

of known invasive weed and nonnative grass infestations to prevent or at least minimize the introduction or spread these species.

- 3.e. *Chemical spills*—Hazardous and toxic materials such as fuels, solvents, lubricants, and acids used during construction will be controlled to prevent accidental spills. Any leak or accidental release of hazardous and toxic materials will be stopped immediately and cleaned up at the time of occurrence. Contaminated soils will be removed and disposed at an approved landfill site.
- 3.f. *Residual impacts from disturbance*—BLM shall collect remuneration fees to offset residual impacts to desert tortoises from project-related disturbance to desert tortoise habitat.

Remuneration fees will be used for management actions expected to promote recovery of the desert tortoise over time, including management and recovery of desert tortoise in Nevada. Actions may involve habitat acquisition, population or habitat enhancement, increasing knowledge of the species' biological requirements, reducing loss of individual animals, documenting the species status and trend, and preserving distinct population attributes. Fees will be used to fund the highest priority recovery actions for desert tortoises in Nevada.

The current base rate is \$843 per acre of disturbance, as indexed for inflation, effective March 1, 2015. The next adjustment will become \$849 per acre effective March 1, 2016. The fee rate will be indexed for inflation based on the Bureau of Labor Statistics Consumer Price Index for All Urban Consumers (CPI-U) on January 31st of each year, becoming effective March 1st. Fees assessed or collected for projects covered under this BiOp will be adjusted based on the current CPI-U for the year they are collected. Information on the CPI-U can be found on the internet at: <http://stats.bls.gov/news.release/cpi.nws.htm>.

RPM 7. Compliance and reporting.

- 7.a. *Desert tortoise deaths*—The deaths and injuries of desert tortoises shall be investigated as thoroughly as possible to determine the cause. The Service and appropriate state wildlife agency must be verbally informed immediately and within 5 business days in writing (electronic mail is sufficient). The Authorized Desert Tortoise Biologist shall complete the Desert Tortoise Handling and Take Report (Appendix E of the PBO).
- 7.b. *Non-compliance*—Any incident occurring during project activities that was considered by the FCR, authorized desert tortoise biologist, or biological monitor to be in non-compliance with this biological opinion shall be immediately documented by an authorized desert tortoise biologist. Documentation shall include photos, GPS coordinates, and details on the circumstances of the event. The incident will be included in the annual report and post-project report.
- 7.c. *Fence inspection*—Quarterly reports (January-March, April-June, July-September, and October –December) for monitoring and repair of tortoise-proof fencing as

specified in Table 1, shall be submitted to the Service's Southern Nevada Fish and Wildlife Office in Las Vegas. Reports are due within the first 30 days following each quarter. For example, the report for quarter January-March is due April 30).

- 7.d. *Project reporting requirements*—Quarter (non-appended actions), annual, and comprehensive final project reports will be submitted to BLM and the Service's Nevada Fish and Wildlife Office in Las Vegas. Annual reports are required for all appended actions (except those completed and provided in a prior annual report). Annual reports will cover the calendar year and are due April 1st of the following year (e.g., the annual report for calendar year 2013 is due April 1, 2014). Quarterly reports for non-appended actions are due 15 calendar days following the quarter. Final project reports are due within 60 days following completion of the project or each phase of the project.

The Programmatic Biological Opinion Report to the Fish and Wildlife Service provided in Appendix G of the PBO will be used for quarterly, annual, and final project reports, and shall include all Desert Tortoise Handling and Take Reports (Appendix E of the PBO). If available, GIS shape files will be included.

- 7.e. *Operation and maintenance*—A written assessment report shall be submitted annually to the Service outlining the operation and maintenance activities that occurred over the past year.

Report to include: It will include frequency of implementation of minimization measures, biological observations, general success of each of the minimization measures. All deaths, injuries, and illnesses of endangered or threatened species within the project area, whether associated with project activities or not, will be summarized in the annual report. The report is due April 1 of each year.

- 7.f. *Restoration monitoring* – Vegetation restoration success shall be monitored by project proponent and reported to BLM and the Service. Monitoring will include both qualitative and quantitative data collection and analysis. Monitoring frequency and parameters for restoration success will be described in the required restoration/reclamation plan.
- 7.g. *Connectivity Structure Monitoring* – The drainage culverts, tortoise underpasses, and under-rail escapes shall be inspected at least quarterly, particularly following precipitation, and maintained in perpetuity. Monitoring and maintenance will include regular removal of trash, sediment, and vegetation accumulation and restoration of tortoise access to underpass structures.

INTERAGENCY OPERATING PROCEDURES

A.1 PROJECT PLANNING

Regulatory Compliance

1. The appropriate agency, assisted by the applicant, must conduct project-specific NEPA analyses in compliance with Section 102 of NEPA. The scope, content, and type of analysis shall be determined on a project-by-project basis by the Agencies and the applicants.
2. The appropriate agency, assisted by the project applicant, must comply with Section 106 of the NHPA on a project-by-project basis. Consultation with SHPOs, any federally recognized Tribes, and other appropriate parties as per regulations (36 CFR 800) must begin early in the planning process and continue throughout project development and execution. The ACHP retains the option to comment on all undertakings (36 CFR 800.9).
3. The appropriate agency, assisted by the project applicant, must consult with the USFWS and the NMFS as required by Section 7 of ESA. The specific consultation requirements, as set forth in regulations at 50 CFR Part 402, would be applied on a project-by-project basis. Applicants shall identify known occupied sites, such as nest sites, for threatened and endangered species and special status species (BLM 2008).
4. The appropriate agency, assisted by the project applicant, must coordinate and consult with NMFS regarding potential impacts to essential fish habitat (EFH) as required by the 1996 reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act.

Agency Coordination

1. Applicants seeking to develop energy transport projects within corridors located on or near DOD facilities or flight training areas (see Appendix L of the PEIS for applicable corridors) must, early in the planning process and in conjunction with the appropriate agency staff, inform and coordinate with the DOD regarding the characteristics and locations of the anticipated project infrastructure.
2. Early in the planning process, applicants seeking a ROW authorization within a Section 368 energy corridor that is located within 5 miles of a unit of the NPS should contact the appropriate Agency staff and work with the NPS regarding the characteristics and locations of anticipated project infrastructure. In those instances where corridors cross lands within the boundaries of a unit of the NPS, the National Park Service Organic Act and other relevant laws and policies shall apply.
3. In those instances where projects using energy corridors are proposed to also cross National Wildlife Refuge System lands, the National Wildlife System Administration Act and other relevant laws and policies pertinent to national wildlife refuges shall apply.

4. For electricity transmission projects, the applicant shall notify the Federal Aviation Administration (FAA) as early as practicable in the planning process in order to identify appropriate aircraft safety requirements.
5. All project applications must reflect applicable findings, mitigation, and/or standards contained in regional land management plans, such as the Northwest Forest Plan, when such regional plans have been incorporated into agency planning guidelines and requirements. Modification of some standards may be needed to reasonably allow for energy transport within a corridor.

Government-to-Government Consultation

1. The appropriate agency, assisted by the project applicant, must initiate government-to-government consultation with affected Tribes at the outset of project planning and shall continue consultation throughout all phases of the project, as necessary. Agencies should determine how to consult in a manner that reflects the cultural values, socioeconomic factors, and administrative structures of the interested Tribes.
2. The agency POC may require the project proponent to prepare an ethnographic study when Tribal consultation indicates the need. The study shall be conducted by a qualified professional selected in consultation with the affected Tribe.

General

1. Applicants seeking to develop an electricity transmission or pipeline project will develop a project-specific plan of development (POD). The POD should display the location of the project infrastructure (i.e., towers, power lines) and identify areas of short- and long-term land and resource impacts and the mitigation measures for site-specific and resource-specific environmental impacts. The POD should also include notification of project termination and decommissioning to the agencies at a time period specified by the agencies.
2. Applicants, working with the appropriate agencies, shall design projects to comply with all appropriate and applicable agency policies and guidance.
3. Project planning shall be based on the current state of knowledge. Where corridors are subject to sequential projects, project-related planning (such as the development of spill-response plans, cultural resource management plans, and visual resource management plans) and project-specific mitigation and monitoring should incorporate information and lessons learned from previous projects.
4. Applicants shall follow the best management practices for energy transport project siting, construction, and operations of the states in which the proposed project would be located, as well as Federal agency practices.

5. Corridors are to be efficiently used. The applicant, assisted by the appropriate agency, shall consolidate the proposed infrastructure, such as access roads, wherever possible and utilize existing roads to the maximum extent feasible, minimizing the number, lengths, and widths of roads, construction support areas, and borrow areas.
6. When concurrent development projects are proposed and implemented within a corridor, the agency POCs shall coordinate the projects to ensure consistency with regard to all regulatory compliance and consultation requirements, and to avoid duplication of effort.
7. Applicants, assisted by the appropriate agency, shall prepare a monitoring plan for all project-specific mitigation activities.
8. Potential cumulative impacts to resources should be considered during the early stages of the project. Agency POCs must coordinate various development projects to consider and minimize cumulative impacts. A review of resource impacts resulting from other projects in the region should be conducted and any pertinent information be considered during project planning.

Project Design

1. Applicants shall locate desired projects within energy corridors to promote effective use of the corridors by subsequent applicants and to avoid the elimination of use or encumbrance of use of the corridors by ROW holders. Proposed projects should be compatible with identified energy transport modes and avoid conflicts with other land uses within a corridor.
2. Applicant shall identify and delineate existing underground metallic pipelines in the vicinity of a proposed electricity transmission line project and design the project to avoid accelerating the corrosion of the pipelines and/or pumping wells.

Transportation

1. The applicant shall prepare an access road siting and management plan that incorporates relevant agency standards regarding road design, construction, maintenance, and decommissioning. Corridors will be closed to public vehicular access unless determined by the appropriate Federal land manager to be managed as part of an existing travel and transportation network in a land use plan or subsequent travel management plan(s).
2. The applicant shall prepare a comprehensive transportation plan for the transport of transmission tower or pipeline components, main assembly cranes, and other large equipment. The plan should address specific sizes, weights, origin, destination, and unique equipment handling requirements. The plan should evaluate alternative transportation routes and should comply with state regulations and all necessary permitting requirements. The plan should address site access roads and eliminate hazards from truck traffic or adverse impacts to normal traffic flow. The plan should include

measures such as informational signage and traffic controls that may be necessary during construction or maintenance of facilities.

3. Applicants shall consult with local planning authorities regarding increased traffic during the construction phase, including an assessment of the number of vehicles per day, their size, and type. Specific issues of concern (e.g., location of school bus routes and stops) should be identified and addressed in the traffic management plan.

Groundwater

1. Applicants must identify and delineate all sole source aquifers in the vicinity of a proposed project and design the project to avoid disturbing these aquifers or to minimize potential risks that the aquifers could be contaminated by spills or leaks of chemicals used in the projects.
2. In instances where a project within an energy corridor crosses sole source aquifers, the applicant must notify the U.S. Environmental Protection Agency (EPA) and the agencies that administer the land as early as practicable in the planning process. Section 1424(e) of the Safe Drinking Water Act (42 USC Chapter 6A) and other relevant laws and policies pertinent to the corridors that cross sole source aquifers shall apply.

Surface Water

1. Applicants must identify all wild and scenic rivers (designated by act of Congress or by the Secretary of the Interior under Section 3(a) or 2(a)(ii) of the Wild and Scenic Rivers Act (16 USC 1271-1287), respectively), congressionally authorized wild and scenic study rivers, and agency identified (eligible or suitable) wild and scenic study rivers in the vicinity of a proposed project and design the project to avoid the rivers or mitigate the disturbance to the rivers and their vicinity.
2. In instances where a project within an energy corridor crosses a wild and scenic river or a wild and scenic study river, the appropriate Federal permitting agency, assisted by the project applicant, must coordinate and consult with the river-administrating agency regarding the protection and enhancement of the river's free-flowing condition, water quality, and outstandingly remarkable natural, cultural, and recreational values.
3. Applicants shall identify all streams in the vicinity of proposed project sites that are listed as impaired under Section 303(d) of the Clean Water Act (33 USC Chapter 26) and provide a management plan to avoid or mitigate adverse impacts on those streams.

Paleontological Resources

1. The applicant shall conduct an initial scoping assessment to determine whether construction activities would disturb formations that may contain important paleontological resources. Potential impacts to significant paleontological resources should be avoided by moving or rerouting the site of construction or removing or

reducing the need for surface disturbance. When avoidance is not possible, a mitigation plan should be prepared to identify physical and administrative protective measures and protocols such as halting work, to be implemented in the event of fossil discoveries. The scoping assessment and mitigation plan should be conducted in accordance with the managing agency's fossil management practices and policies.

2. If significant paleontological resources are known to be present in the project area, or if areas with a high potential to contain paleontological material have been identified, the applicant shall prepare a paleontological resources management and mitigation plan. If adverse impacts to paleontological resources cannot be avoided or mitigated within the designated corridors, the agency may consider alternative development routes to avoid, minimize, or mitigate adverse effects.
3. A protocol for unexpected discoveries of significant paleontological resources should be developed. Unexpected discovery during construction should be brought to the immediate attention of the responsible Federal agency's authorized officer. Work should be halted in the vicinity of the discovery to avoid further disturbance of the resource while the resource is being evaluated and appropriate mitigation measures are being developed.

Ecological Resources

1. Applicants shall identify important, sensitive, or unique habitats and BLM-special status species (BLM 2008), FS-sensitive, and state-listed species in the vicinity of proposed projects and design the project to avoid or mitigate impacts to these habitats and species.
2. To restore disturbed habitats, the applicant will prepare a habitat restoration plan that identifies the approach and methods to be used to restore habitats disturbed during project construction activities. The plan will be designed to expedite the recovery to natural habitats supporting native vegetation, and require restoration to be completed as soon as practicable after completion of construction, minimizing the habitat converted at any one time. To ensure rapid and successful restoration efforts, the plan will include restoration success criteria, including time frames, which will be developed in coordination with the appropriate agency and which must be met by the applicant. Bonding to cover the full cost of restoration will be required.
3. In consultation with the U.S. Army Corps of Engineers, the appropriate agency, assisted by the project applicant, will identify wetlands (including ephemeral, intermittent, and isolated wetlands), riparian habitats, streams, and other aquatic habitats in the project area and design the project to avoid or mitigate impacts to these habitats.

Vegetation Management

1. Applicants shall develop an integrated vegetation management plan consistent with applicable regulations and agency policies for the control of unwanted vegetation, noxious weeds, and invasive species (E.O. 13112). The plan should address monitoring;

ROW vegetation management; the use of certified weed-seed-free hay, straw, and/or mulch; the cleaning of vehicles to avoid the introduction of invasive weeds; education of personnel on weed identification, the manner in which weeds spread, and the methods for treating infestations (BLM 2006, 2007a,b, 2008).

Cultural Resources

1. Cultural resources management services and individuals providing those services shall meet the Secretary of the Interior's Standards for Archeology and Historic Preservation, 48 FR 44716 (Sept. 29, 1983).
2. The project applicant may, with the approval of the agency POC, assign a Cultural Resource Coordinator to ensure an integrated compliance process across administrative and jurisdictional boundaries. The Cultural Resource Coordinator will facilitate and coordinate compliance with multiple laws, policies, regulations, and existing pertinent agreements (PAs, MOAs, or MOUs) among multiple agencies and other entities, jurisdictions, and federally recognized Tribes. The coordinator may assist with development of pertinent agreements among concerned parties during the course of the project. The coordinator shall be a qualified professional with experience in cultural resource compliance. Where appropriate, the Cultural Resource Coordinator may also serve as the Tribal Coordinator. Alternatively, the agency POC may assign such coordinators, to be paid for through project cost-recovery funds. The agencies, through the POC, remain responsible for consultation.
3. The project applicant may, with the approval of the agency POC, assign a Tribal Coordinator to facilitate and coordinate consultation and compliance with multiple laws, agencies, and Tribes in order to ensure effective government-to-government consultation throughout the life of the project. Alternatively, the agency POC may assign such coordinators, to be paid for through project cost-recovery funds. The agencies, through the POC, remain responsible for consultation.
4. All historic properties in the Area of Potential Effect (APE) will be identified and evaluated. The APE shall include that area within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties and shall include a reasonable construction buffer zone and laydown areas, access roads, and borrow areas, as well as a reasonable assessment of areas subject to effects from visual, auditory, or atmospheric impacts, or impacts from increased access.
5. Project proponents must develop a cultural resources management plan (CRMP) to outline the process for compliance with applicable cultural resource laws during pre-project planning, management of resources during operation, and consideration of the effect of decommissioning. The CRMPs should meet the specifications of the appropriate agency and address compliance with all appropriate laws. The CRMPs should include the following, as appropriate: identification of the federally recognized Tribes, State Historic Preservation Offices (SHPOs), and consulting parties for the project; identification of long- and short-term management goals for cultural resources within the APE of the

project; the definition of the APE; appropriate procedures for inventory, evaluation, and identification of effects to historic properties; evaluation of eligibility for the National Register of Historic Places (NRHP) for all resources in the APE; description of the measures to avoid, minimize, or mitigate adverse effects to historic properties; procedures for inadvertent discovery; procedures for considering Native American Graves Protection and Repatriation Act (NAGPRA) issues, monitoring needs, and plans to be employed during construction; curation procedures; anticipated personnel requirements and qualifications; public outreach and interpretation plans; and discussion of other concerns. The draft CRMP should be reviewed and approved by the agency POC in consultation with historic preservation partners, including appropriate SHPOs, Tribes, and consulting parties. The CRMPs must specify procedures that would be followed for compliance with cultural resource laws should the project change during the course of implementation.

6. Project applicants will provide cultural resources training for project personnel regarding the laws protecting cultural resources, appropriate conduct in the field (such as procedures for the inadvertent discovery of human remains), and other project-specific issues identified in the CRMP. Training plans should be part of the CRMP and should be subject to the approval of the POC. When government-to-government consultation identifies the need and the possibility, Tribes may be invited to participate in or contribute to relevant sessions.
7. If adverse effects to historic properties will result from a project, a Historic Property Treatment Plan will be developed in consultation with the SHPO, the appropriate federally recognized Tribes, and any consulting parties. The plan will outline how the impacts to the historic properties would be mitigated, minimized, or avoided. Agency officials will give full consideration to the applicable mitigation measures found in Section 3.10.5.2 of the Final PEIS when consulting during the project pre-planning stages to resolve adverse effects on historic properties.
8. As directed by the agency POC, project proponents will prepare a public education and outreach component regarding project-related cultural resource issues (e.g., discoveries, impacts) such as a public presentation, a news article, a publication, or a display. Public education and outreach components will be subject to Agency approval and Tribal review and consultation when the content or format is of interest to affected Tribes.
9. Cultural resources inventory, evaluation, and mitigation practices should incorporate modeling and sampling strategies to the extent practicable, in concurrence with SHPOs and other relevant parties, and as approved by the agency POC.
10. Project applicants shall provide all cultural resources reports and data in an electronic format that is approved by the Agency POC and integrated across jurisdictional boundaries, that meets current standards, and that is compatible with SHPO systems. The Agency will submit this data to the SHPO in a timely fashion. Project proponents should submit cultural resources data on a regular basis to ensure that SHPO systems are kept up

to date for reference as the different phases of the project proceed. Paper records may also be required by the agency.

11. Cultural resources inventory procedures, specified in the CRMP, will include development of historic contexts based on the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (48 FR 44716) sufficient to support the evaluation of cultural resources encountered in the APE.

Tribal Traditional Cultural Resources

1. The appropriate agency, assisted by the applicant, must comply with all laws, policies, and regulations pertaining to government-to-government consultation with federally recognized Tribes. Agencies shall initiate consultation with affected Tribes at the outset of project planning and shall continue consultation throughout project planning, construction, operation, and decommissioning. Consultation shall include, but not be limited to, the following: (a) identification of potentially affected Tribes; (b) identification of appropriate Tribal contacts and the preferred means of communication with these Tribes; (c) provision to the Tribes of project-specific information (e.g., project proponents, maps, design features, proposed ROW routes, construction methods, etc.) at the outset of project planning and throughout the life of the project; (d) identification of issues of concern specific to affected Tribes (e.g., potential impacts to culturally sensitive areas or resources, hazard and safety management plans, treaty reserved rights and trust responsibilities); (e) identification of areas and resources of concern to Tribes; and (f) resolution of concerns (e.g., actions to avoid, minimize, or mitigate impacts to important resources; Memoranda of Agreement stating what actions would be taken to mitigate project effects; or agreements for Tribal participation in monitoring efforts or operator training programs).
2. The appropriate agency, assisted by the applicant, must comply with all pertinent laws, policies, and regulations addressing cultural and other resources important to Tribes, including the NHPA, the Archaeological Resources Protection Act (ARPA), the Native American Graves Protection Act (NAGPRA), and other laws and regulations as listed in Table 3.11-2 in Volume I of the PEIS.
3. The agencies shall recognize the significance to many Tribes of traditional cultural places, such as sacred sites, sacred landscapes, gathering grounds, and burial areas, and shall seek to identify such areas through consultation with affected Tribes early in the project planning process. Agencies shall seek to avoid, minimize, or mitigate impacts to such places in consultation with the Tribes, project proponents, and other relevant parties. Where confidentiality concerning these areas is important to an affected Tribe, agencies shall honor such confidentiality unless the Tribe agrees to release the information.
4. A protocol must be developed for inadvertent discovery of Native American human remains and funerary items to comply with the NAGPRA in consultation with appropriate federally recognized Tribes. Unexpected discovery of such items during construction must be brought to the immediate attention of the responsible Federal

agency's authorized officer. Work must be halted in the vicinity of the find of Native American graves and funerary items to avoid further disturbance to the resources while they are being evaluated and appropriate mitigation measures are being developed. The procedures for reporting items covered under NAGPRA must be identified in the CRMP.

Visual Resources

1. Applicants shall identify and consider visual resource management (VRM) and scenery management (SMS) issues early in the design process to facilitate integration of VRM and scenery treatments into the overall site development program and construction documents. Visual/scenery management considerations, environmental analyses, mitigation planning, and design shall reference and be in accordance with the land management agency visual/scenery management policies and procedures applicable to the jurisdiction the project lies within. Applicants shall coordinate between multiple agencies on visual/scenery sensitive issues when projects transition from one jurisdiction to another, especially when transitions occur within a shared viewshed.
2. Applicants shall prepare a VRM or scenery management plan. The applicant's planning team shall include an appropriately trained specialist, such as a landscape architect with demonstrated VRM and/or scenery management system (SMS) experience. The VRM/SMS specialist shall coordinate with the BLM/FS on the availability of the appropriate visual or scenic inventory data, VRM management class delineations, Scenic Integrity Objectives (SIOs), and Federal agency expectations for preparing project plans and mitigation strategies to comply with RMP or LRMP direction related to scenery and/or visual resources. Applicants shall confirm that a current Visual Resource Inventory and/or Scenic Class inventory is available and that the resource management plan (RMP) or land resource and management plan (LRMP) VRM classifications or SIOs have been designated in the current land management plan. Project plans shall abide by the VRM class designations and SIOs and consider sensitivities defined within the visual or scenic resource inventory. If visual or scenic management objectives are absent, then the proper inventory and classification process shall be followed to develop them in accordance with the BLM VRM manual and handbooks or FS SMS process, depending on the agency. When the VRM management classes or SIOs are absent, then the project alternatives must reflect a range of management options related to scenery and visual resources that reflect the values identified in the visual/scenic inventory. Responsibility for developing an inventory or VRM management classes (or in the case of the FS, Scenic Classes and SIOs) will remain with the respective agency, but how to accomplish these tasks will be determined by the field office manager or forest supervisor, who will consider the applicant's role and financial participation in completing the work.
3. Visual and scenic mitigation planning/design and analysis shall be performed through integrated field assessment, applied global positioning system (GPS) technology, field photo documentation, use of computer-aided design and development software, 3-D modeling GIS software, and visual simulation software, as appropriate. Proposed activities, projects, and site development plans shall be analyzed and further developed using these technologies to meet visual and scenic objectives for the project area and

surrounding areas sufficient to provide the full context of the viewshed. Visual simulations shall be prepared according to BLM Handbook H-8432-1, or other agency requirements, to create spatially accurate depictions of the appearance of proposed facilities, as reflected in the 3-D design models. Simulations shall depict proposed project appearance from sensitive/scenic locations as well as more typical viewing locations. Transmission towers, roads, compressor stations, valves, and other aboveground infrastructure should be integrated aesthetically with the surrounding landscape in order to minimize contrast with the natural environment.

4. Applicants shall develop adequate terrain mapping on a landscape/viewshed scale for site planning/design, visual impact analysis, visual impact mitigation planning/design, and for full assessment and mitigation of cumulative visual impacts through applied, state-of-the-art design practices using the cited software systems. The landscape/viewshed scale mapping shall be geo-referenced and at the same Digital Elevation Model (DEM) resolution and contour interval within the margin of error suitable for engineered site design. This level of mapping shall enable proper placement of proposed developments into the digital viewshed context. Final plans shall be field verified for compliance.
5. The full range of visual and scenic best management practices shall be considered, and plans shall incorporate all pertinent best management practices (BMPs). Visual and scenic resource monitoring and compliance strategies shall be included as a part of the project mitigation plans.
6. Compliance with VRM/SMS objectives shall be determined through the use of the BLM Contrast Rating procedures defined in BLM Handbook H-8431-1 Visual Contrast Rating, or the FS SMS Handbook 701. Mitigation of visual impacts shall abide by the requirements of these handbooks.

Public Health and Safety

1. An electricity transmission project shall be planned by the applicant to comply with FAA regulations, including lighting regulations, and to avoid potential safety issues associated with proximity to airports, military bases or training areas, or landing strips.
2. A health and safety program shall be developed by the applicant to protect both workers and the general public during construction, operation, and decommissioning of an energy transport project. The program should identify all applicable Federal and state occupational safety standards, establish safe work practices for each task (e.g., requirements for personal protective equipment and safety harnesses, Occupational Safety and Health Administration [OSHA] standard practices for safe use of explosives and blasting agents, measures for reducing occupational electromagnetic field [EMF] exposures), and define safety performance standards (e.g., electrical system standards). The program should include a training program to identify hazard training requirements for workers for each task and establish procedures for providing required training to all workers. Documentation of training and a mechanism for reporting serious accidents to appropriate agencies should be established.

3. The health and safety program shall establish a safety zone or setback from roads and other public access areas that is sufficient to prevent accidents resulting from various hazards. It should identify requirements for temporary fencing around staging areas, storage yards, and excavations during construction or decommissioning activities. It should also identify measures to be taken during the operations phase to limit public access to those components of energy facilities that present health or safety risks.
4. Applicants shall develop a comprehensive emergency plan that considers the vulnerabilities of their energy system to all credible events initiated by natural causes (earthquakes, avalanches, floods, high winds, violent storms, etc.), human error, mechanical failure, cyber attack, sabotage, or deliberate destructive acts of both domestic and international origin and the potential for and possible consequences of those events. Vulnerability, threat, and consequence assessment methodologies and criteria in the sector-specific plan (SSP) for energy will be used and appropriate preemptive and mitigative response actions will be identified. The applicant must coordinate emergency planning with state, local, and Tribal emergency and public safety authorities and with owners and operators of other energy systems collocated in the corridor or in adjacent corridors that could also be impacted.
5. In addition to directives contained in other IOPs herein, the applicant must identify all Federal, state, and local regulations pertaining to environmental protection, worker health and safety, public safety, and system reliability that are applicable throughout the construction, operation, and decommissioning phases of their facility's life cycle and must develop appropriate compliance strategies, including securing all necessary permits and approvals.

Hazardous Materials Management

1. Applicants for petroleum pipelines and projects involving oil-filled electrical devices shall develop a spill prevention and response plan identifying spill prevention measures to be implemented, training requirements, appropriate spill response actions, and procedures for making timely notifications to authorities. The spill prevention and response plan should include identification of any sensitive biotic resources and locations (such as habitats) that require special measures to provide protection, as well as the measures needed to provide that protection.

Fire Management

1. Applicants shall develop a fire management strategy to implement measures to minimize the potential for a human-caused fire during project construction, operation, and decommissioning. The strategy should consider the need to reduce hazardous fuels (e.g., native and non-native annual grasses and shrubs) and to prevent the spread of fires started outside or inside a corridor, and clarify who has responsibility for fire suppression and hazardous fuels reduction for the corridor.

2. Applicants must work with the local land management agency to identify project areas that may incur heavy fuel buildups, and develop a long-term strategy on vegetation management of these areas. The strategy may include land treatment during project construction, which may extend outside the planned ROW clearing limits.

A.2 PROJECT CONSTRUCTION

General

1. To avoid conflict with Federal and non-Federal operations, the applicant shall be aware of liabilities pertaining to environmental hazards, safety standards, and military flying areas.
2. The applicant shall locate all stationary construction equipment (i.e., compressors and generators) as far as practicable from nearby residences.
3. Applicants shall pay fair market value to the land management agency for any merchantable forest products that will be cut during ROW clearing. The local land management agency will determine the fair market value, which will be paid prior to clearing. The applicant will either remove the forest products from the area or will stack the material at locations determined by the local land management agency. Treatment of unmerchantable products will be determined by the local land management agency.

Soils, Excavation, and Blasting

1. Applicants shall salvage, safeguard, and reapply topsoil from all excavations and construction activities during restoration.
2. All areas of disturbed soil shall be restored by the applicant using weed-free native grasses, forbs, shrubs, and trees as directed by the agency. Restoration should not be unnecessarily delayed. If native species are not available, noninvasive vegetation recommended by agency specialists may be used.
3. The applicant must not create excessive slopes during excavation. Areas of steep slopes, biological soil crusts, erodible soil, and stream channel crossings will often require site-specific and specialized construction techniques by the applicant. These specialized construction techniques should be implemented by adequately trained and experienced employees.
4. Blasting activities will be avoided or minimized in the vicinity of sole source aquifer areas to reduce the risk of releasing sediments or particles into the groundwater and inadvertently plugging water supply wells.

5. The applicant must backfill foundations and trenches with originally excavated material as much as possible. Excess excavation materials should be disposed of by the applicant only in approved areas.
6. The applicant shall obtain borrow (fill) material only from authorized sites. Existing sites should be used in preference to new sites.
7. The applicant shall prepare an explosives use plan that specifies the times and meteorological conditions when explosives will be used and specifies minimum distances from sensitive vegetation and wildlife or streams and lakes.
8. If blasting or other noisy activities are required during the construction period, the applicant must notify nearby residents in advance.

Mitigation and Monitoring

1. All control and mitigation measures established for the project in the POD and other required plans shall be maintained and implemented by the applicant throughout construction. Necessary adjustments may be made with the concurrence of the appropriate agency.

Surface and Groundwater Resources

1. The applicant shall safeguard against the possibility of dewatering shallow groundwater and/or wetlands in the vicinity of project sites during foundation excavations or excavations for buried pipelines.
2. The applicant shall implement erosion controls complying with county, state, and Federal standards, such as jute netting, silt fences, and check dams, and secure all necessary storm water pollution prevention plan (SWPPP) permits.
3. The applicant shall minimize stream crossings by access roads to the extent practicable. All structures crossing intermittent and perennial streams shall be located and constructed so that the structures do not decrease channel stability, increase water velocity, or impede fish passage.
4. Applicants shall not alter existing drainage systems and shall give particular care to sensitive areas such as erodible soils or steep slopes. Soil erosion shall be reduced at culvert outlets by appropriate structures. Catch basins, roadway ditches, and culverts shall be cleaned and maintained.
5. Applicants must not create hydrologic conduits between aquifers.

Paleontological Resources

1. Project construction activities will follow the protective measures and protocols identified in the paleontological resources mitigation plan.

2. All paleontological specimens found on Federal lands remain the property of the U.S. government. Specimens, therefore, shall only be collected by a qualified paleontologist under a permit issued by the managing agency and must be curated in an approved repository.

Ecological Resources

1. Areas that are known to support ESA-listed species, BLM-special-status species, FS-sensitive, and state-listed species or their habitats shall be identified and marked with flagging or other appropriate means to avoid direct impacts during construction activities. Construction activities upslope of these areas should be avoided to prevent indirect impacts of surface water and sediment runoff.
2. All construction activities that could affect wetlands or waters of the United States shall be conducted in accordance with the requirements identified in permits issued by the U.S. Army Corps of Engineers.

Visual Resources

1. A pre-construction meeting with BLM/FS landscape architects or other designated visual/scenic resource specialist shall be held before construction begins to coordinate on the VRM/SMS mitigation strategy and confirm the compliance-checking schedule and procedures. Applicants shall integrate interim/final reclamation VRM/SMS mitigation elements early in the construction, which may include treatments such as thinning and feathering vegetation along project edges, enhanced contour grading, salvaging landscape materials from within construction areas, special revegetation requirements, etc. Applicants shall coordinate with BLM/FS in advance to have BLM/FS landscape architects or other designated visual/scenic resource specialists onsite during construction to work with implementing BMPs.

Cultural Resources

1. Project applicants shall provide all cultural resources reports and data in an approved electronic format that is integrated across jurisdictional boundaries, that meets current standards, and that is compatible with SHPO systems. Project proponents shall submit cultural resources data on a regular basis to ensure that SHPO systems are kept up-to-date for reference as the different phases of the project proceed.
2. When an area is identified as having a high potential for cultural resources but none are found during a pre-construction field survey, a professionally qualified cultural resources specialist will be required to monitor ground-disturbing activities during project construction, and to complete a report when the activities are finished. The protocol for monitoring should be identified in the CRMP.

3. When human remains, funerary objects, sacred objects, or objects of cultural patrimony are inadvertently discovered, the provisions of NAGPRA shall apply and the process identified in the CRMP must be followed.

Hazardous Materials and Wastewater Management

1. Any wastewater generated by the applicant in association with temporary, portable sanitary facilities must be periodically removed on a schedule approved by the agency, by a licensed hauler and introduced into an existing municipal sewage treatment facility. Temporary, portable sanitary facilities provided for construction crews should be adequate to support expected onsite personnel and should be removed at completion of construction activities.
2. All hazardous materials (including vehicle and equipment fuels) brought to the project site will be in appropriate containers and will be stored in designated and properly designed storage areas with appropriate secondary containment features. Excess hazardous materials will be removed from the project site after completion of the activities in which they are used.

Air Emissions

1. The applicant shall cover construction materials and stockpiled soils if these are sources of fugitive dust.
2. To minimize fugitive dust generation, the applicant shall water land before and during surface clearing or excavation activities. Areas where blasting would occur should be covered with mats.

Noise

1. The applicant shall limit noisy construction activities (including blasting) to the least noise-sensitive times of day (i.e., daytime only between 7 a.m. and 10 p.m.) and weekdays.

Fire Safety

1. The applicant must ensure that all construction equipment used is adequately muffled and maintained and that spark arrestors are used with construction equipment in areas with, and during periods of, high fire danger.
2. Flammable materials (including fuels) will be stored in appropriate containers.

A.3 PROJECT OPERATION

Mitigation and Monitoring

1. All control and mitigation measures established for the project shall be maintained and implemented by the applicant throughout the operation of the project. Necessary adjustments may be made with the concurrence of the appropriate agency.

Ecological Resources

1. Applicants shall review existing information regarding plant and animal species and their habitats in the vicinity of the project area and identify potential impacts to the applicable agencies.
2. Project developer staff shall avoid harassment or disturbance of wildlife, especially during reproductive courtship, migratory, and nesting seasons.
3. Observations by project staff of potential wildlife problems, including wildlife mortality, will be immediately reported to the applicable agency authorized officer.

Pesticide and Herbicide Use

1. If pesticides are used, the applicant shall ensure that pesticide applications as specified in the integrated vegetation management plan are conducted within the framework of agency policies and entail only the use of EPA-registered pesticides that are applied in a manner consistent with label directions and state pesticide regulations. Pesticide use shall be limited to non-persistent immobile pesticides and shall be applied only in accordance with label and application permit directions and stipulations for terrestrial and aquatic applications (BLM 2007a).
2. Pesticide and herbicide uses shall be avoided in the vicinity of sole source aquifer areas (BLM 2007a).

Visual Resources

1. Terms and conditions for VRM/SMS mitigation compliance shall be maintained and monitored for compliance with visual objectives, adaptive management adjustments, and modifications as necessary and approved by the BLM/FS landscape architect or other designated visual/scenic resource specialist.

Hazardous Materials, Wastes, and Wastewater Management

1. The applicant shall provide secondary containment for all onsite hazardous materials and waste storage areas.

2. The applicant shall ensure that wastes are properly containerized and removed periodically for disposal at appropriate offsite permitted disposal facilities.
3. In the event of an accidental release to the environment, the applicant shall initiate spill cleanup procedures and document the event, including a cause analysis, appropriate corrective actions taken, and a characterization of the resulting environmental or health and safety impacts. Documentation of the event shall be provided to the land management agency's authorized officer and other Federal and state agencies, as required.

Air Quality

1. Dust abatement techniques (e.g., water spraying) shall be used by the applicant on unpaved, unvegetated surfaces to minimize airborne dust. Water for dust abatement shall be obtained and used by the applicant under the appropriate state water use permitting system. Used oil will not be used for dust abatement.

Noise

1. The applicant shall ensure that all equipment has sound-control devices no less effective than those provided on the original equipment.

A.4 PROJECT DECOMMISSIONING

General

1. Where applicable, decommissioning activities will conform to agency standards and guidance for mitigation and reclamation (e.g., BLM's Gold Book).
2. Applicants must receive approval for changes to the ROW authorization prior to any modifications to the ROW required for decommissioning.
3. Gravel work pads will be removed; gravel and other borrow material brought to the ROW during construction will be disposed of as approved by the agency.
4. Any wells constructed on the ROW to support operations shall be removed and properly closed in accordance with applicable local or state regulations.
5. All equipment, components, and above-ground structures shall be cleaned and removed from the site for reclamation, salvage, or disposal; all below-ground components shall be removed to a minimum depth of 3 feet to establish a root zone free of obstacles; pipeline segments and other components located at greater depths may be abandoned in place provided they are cleaned (of all residue) and filled with inert material to prevent possible future subsidence.

6. Dismantled and cleaned components shall be promptly removed; interim storage of removed components or salvaged materials that is required before final disposition is completed will not occur on Federal land.
7. At the close of decommissioning, applicants will provide the Federal land manager with survey data precisely locating all below-grade components that were abandoned in place.

Mitigation and Monitoring

1. All control and mitigation measures established for the project in the POD and other required plans shall be incorporated into a decommissioning plan that shall be approved by the Federal land manager(s); the decommissioning plan shall include a site reclamation plan and a monitoring program and shall be coordinated with owners and operators of other systems on the corridor to ensure no disruption to the operation of those systems.

Surface Water

1. A SWPPP permit shall be obtained and its provisions implemented for all affected areas before any ground-disturbance activities commence.

Transportation

1. Additional access roads needed for decommissioning shall follow the paths of access roads established during construction to the greatest extent possible; all access roads not required for the continued operation and maintenance of other energy systems present in the corridor shall be removed and their footprints reclaimed and restored.

Restoration

1. Topsoil removed during decommissioning activities shall be salvaged and reapplied during final reclamation; all areas of disturbed soil shall be reclaimed using weed-free native shrubs, grasses, and forbs or other plant species approved by the land management agency; grades shall be returned to pre-development contours to the greatest extent feasible.
2. The vegetation cover, composition, and diversity shall be restored to values commensurate with the ecological setting, as approved by the authorizing officer.

Hazardous Materials and Waste Management

1. All fuels, hazardous materials, and other chemicals shall be removed from the site and properly disposed of or reused.
2. Incidental spills of petroleum products and other chemicals shall be removed and the affected area cleaned to meet applicable standards.

3. Solid wastes generated during decommissioning shall be accumulated, transported, and disposed in permitted offsite facilities in accordance with state and local requirements; no solid wastes shall be disposed of within the footprint of the ROW or the corridor.
3. Hazardous wastes generated as a result of component cleaning shall be containerized and disposed of in permitted facilities.

REFERENCES

BLM, 2006, BLM Manual 9011-Chemical Pest Control. Available at <http://www.blm.gov/ca/st/en/prog/weeds/9011.print.html>. Accessed October 30, 2008.

BLM, 2007a, Record of Decision for the Final Programmatic Environmental Impact Statement for Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States, U.S. Department of the Interior, September.

BLM, 2007b, Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Final Programmatic Environmental Report, U.S. Department of the Interior, June.

BLM, 2008, Integrated Vegetation Management Handbook 1740-2, Programmatic Biological Assessment for Vegetation Management, U.S. Department of the Interior.

BLM Finding of No Significant Impact

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

Finding of No Significant Impact
DOI-BLM-NV-S000-2015-0002-EA
February 2016

ARES Nevada, LLC's

File Number: N-92514

PREPARING OFFICE

U.S. Department of Interior
Bureau of Land Management
4701 North Torrey Pines Drive
Las Vegas, Nevada 89130
702-515-5000



1 INTRODUCTION

1.1 Proposed Action Title/Type

The Proposed Action is to construct, operate, and maintain a Regulation Energy Management (REM) facility to address current and future electrical grid reliability and stability issues, in accordance with Federal Energy Regulatory Commission (FERC) objectives and in conformance with the objectives set forth in the Las Vegas Resource Management Plan (RMP) and Record of Decision approved in October 1998. The proposed facility has been designed to provide environmentally-friendly and sustainable large-scale energy storage in support of promoting electrical grid stability and renewable energy consistency.

1.2 Applicant/Proponent

ARES Nevada, LLC is a Santa Barbara, California based company providing a deployable solution for grid-scale energy storage. ARES mission is to enable the electric grid to integrate unprecedented amounts of clean, environmentally responsible, renewable energy while maintaining the reliable electric service necessary to power growth and prosperity.

1.3 Location of Proposed Action

ARES proposes to locate this project exclusively on BLM-managed lands in the Carpenter Canyon area, east of Pahrump, in Nye and Clark Counties, Nevada. The alignment of the Proposed Action, including the facilities, maintenance area, and transmission, is contained within Township 20 South, Range 54 East, Sections 34 and 35; Township 20 South, Range 55 East, Sections 22, 27, 28, 31, 32, 33; Township 21 South, Range 54 East, Sections 01, 02, 03, 12; and Township 21 South, Range 55 East, Sections 06 and 07.

The Proposed Action would include 72 acres of permanent and 98 acres of temporary disturbance on BLM lands for a total of 170 acres.

1.4 Overview of the Proposed Action

ARES is proposing to construct, operate and maintain a REM facility on BLM managed land in Clark and Nye Counties, Nevada, to assist in transmission system stability and reliability, and electricity supply management on the regional electrical transmission grid. The Proposed Action is a 50 megawatt (MW) gravity based Energy Storage System which utilizes multiple electric locomotives operating on a single steep grade railroad track to store or deliver electric energy into the regional electrical grid -- using electricity from the grid to power the locomotives uphill, returning that electricity to the grid as the locomotives descend with their motors operating as generators. The Proposed Action is designed to balance variable energy demands and renewable energy contributions across an electrical grid system. The Proposed Action does not produce more energy than is introduced into its system; therefore it is not an electrical generation facility.

The Proposed Action includes the following components:

- A rail line corridor which will include an access/maintenance road and an overhead catenary system to connect the locomotives to the electrical system.
- Maintenance and operation facilities, including two buildings and a substation.

- Valley Electric Association (VEA) transmission upgrades, including new transmission lines to connect the REM facility to the existing Gamebird Switch Station, upgrading existing transmission lines directly affected by the project, and removing lines made redundant by the project.
- Expansion of the existing VEA Gamebird Switch Station to accommodate the new system.
- A facilities access road connecting to the existing transmission line maintenance road.

2 CONSISTENCY WITH LAND USE PLANS, LAWS, REGULATIONS, AND POLICIES

The Proposed Action conforms to the Las Vegas RMP and Record of Decision approved in October 1998. Sections that specifically apply to this Project include:

- RW-1-h, Management Direction: “All public land within the planning area, except as stated in RW-1-c through RW-1-g area available at the discretion of the agency for rights-of-way under the Federal Land Management Policy Act.”

In conjunction with FLPMA, the BLM’s applicable authorities include the following:

- Executive Order 13212, dated May 18, 2001, which mandates that agencies act expeditiously and in a manner consistent with applicable laws to increase the production and transmission of energy in a safe and environmentally sound manner.
- Section 211 of the Energy Policy Act of 2005, which establishes a goal for the Secretary of the Interior to approve 10,000 MW of non-hydropower renewable energy on public lands by 2015.
- Secretarial Order 3285A1, dated February 22, 2010, which establishes the development of renewable energy as a priority for the Department of the Interior.

3 SELECTED ALTERNATIVE

Based on review of the EA (EA# DOI-BLM-NV-S000-2015-002) and supporting documents, the Proposed Action is the Selected Alternative.

The REM facility will provide up to 50 megawatts (MW) of gravity-based electrical energy regulation on 72 acres of BLM managed land, with temporary impacts to an additional 98 acres. The Selected Alternative was developed taking into consideration the technical aspects of the project and minimizing the facilities to be included within the West-wide Energy Corridor (Section 368 of the Energy Policy Act of 2005, 42 U.S.C. § 15926).

The Selected Alternative includes the following components:

- A 5.5 mile rail corridor, averaging 75 feet in width, which contains the rail line, a track-side maintenance/access road, and an overhead catenary system for interconnecting the locomotives to the electrical system.
- An Operations, Maintenance and Control Facilities Area includes both an operations and control building, a maintenance building for the train vehicles, and an employee and visitor parking lot. Both buildings will be constructed on concrete pads. Adjacent to this area, a transmission interconnection substation will be constructed.

- A Transmission and Access road corridor including a new transmission interconnection connecting the ARES substation to an existing VEA transmission line; upgrades to the affected portion of the existing transmission line; two new sections of transmission lines constructed to route the existing line into Gamebird Switch Station; removal of the existing 230kV transmission line currently bypassing Gamebird Switch Station; and expansion of the existing VEA Gamebird Switch Station within the existing Station right-of-way boundary.
- The new Operations, Maintenance and Control Facilities access road will be co-located with the new transmission interconnection from the existing transmission maintenance road.

4 ADDITIONAL SCOPING

No additional scoping activities were conducted after the public meeting described in Section 5.

5 PUBLIC INVOLVEMENT

Summary of Public Participation

5.1.1 Outline the EA comment process

Public involvement entails “The opportunity for participation by affected citizens in rule making, decision making, and planning with respect to the public lands, including public meetings or hearings . . . or advisory mechanisms, or other such procedures as may be necessary to provide public comment in a particular instance” (FLPMA, Section 103(d)). As required, a 30-day public comment period was provided from October 12-November 11, 2015.

A summary of the comments received, responses to comments, and any changes as a result of these comments can be found in Appendix A of this FONSI.

5.1.2 Describe any changes made to EA as a result of public participation

The EA was updated for clarification as outlined in Appendix A.

6 FINDING OF NO SIGNIFICANT IMPACT

The Las Vegas and Pahrump Field Offices interdisciplinary review and analysis of EA# DOI-BLM-NV-S000-2015-0002 determined the Proposed Action would not result in any significant impacts to the quality of the human environment based on criteria established by regulations, policy and analysis.

Based on the findings discussed herein, We conclude the proposed action is not a major Federal action and will result in no significant impacts to the environment, individually or cumulatively with other actions in the general area. No environmental effects meet the definition of significance in context or intensity and do not exceed those effects described in applicable land use plans. Therefore, preparation of an environmental impact statement (EIS) to further analyze possible impacts is not required pursuant to Section 102(2)(c) of the National Environmental Policy Act of 1969.

The Finding of no Significant Impact determination is based on the rationale that the significance criteria, as defined by the Council on Environmental Quality (CEQ) (40 CFR 1508.27), have not been met. “Significantly” as used in NEPA requires considerations of both context and intensity.

Context:

Under NEPA’s implementing regulations, “context” means that consideration of “the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality” [40 CFR 1508.27(a)]. Significance varies with the setting of the proposed action. For instance, in the case of a small, site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short and long-term effects are relevant.

The project is a site-specific action directly involving 72 acres of BLM managed public land in Clark and Nye Counties, Nevada, that does not, in and of itself, have international, national, regional, or state-wide importance. Environmental impacts associated with the proposed action and alternatives have been assessed by an interdisciplinary team and described in EA # DOI-BLM-NV-S000-2015-002-EA. The effects of the action are relatively local, and are not applicable on a national scale since no nationally significant resources or values are present or involved in the project.

Intensity:

The following discussion is organized around the Ten Significance Criteria described in 40 CFR 1508.27 and incorporated into resources and issues considered (includes supplemental authorities Appendix 1 H-1790-1) and supplemental Instruction Memorandum, Acts, regulations and Executive Orders. The following have been considered in evaluating intensity for this proposal:

1) Impacts can be both beneficial and adverse and a significant effect may exist regardless of the perceived balance of effects.

The proposed action would affect resources as described in detail in the EA. Included here is a summary of the understood beneficial and adverse effects.

Beneficial Effects:

Beneficial effects of the project would include improving the consistency of the existing transmission infrastructure; contribute to the stability and reliability of the supply of clean energy within the existing electrical grid; a potential reduction in the need for additional resource consuming energy storage facilities (pumped-hydro or large scale battery developments) in the future; and minor economic benefits in the local community from employment during construction and operation of the facility.

Adverse Effects:

Adverse effects of the Proposed Action include:

- Temporary increases in particulate matter during construction.
- Long-term loss of 72 acres of habitat.
- Removal of cactus and yucca species from within the project area.
- The short-term need for handling and removal of desert tortoises from the area.
- Visual contrast with the existing landscape.

Long-term effects would be limited in scope, primarily resulting from the loss of habitat. Mitigating measures to reduce impacts to the extent possible were incorporated in the design of the proposed action.

There may also be some short-term disturbance and displacement of other wildlife in the immediate project vicinity as the result of noise and human activity associated with construction (98 acres) and routine project maintenance. Displacement and disturbance impacts will be short-term and no measureable long-term detrimental effects are expected.

Overall, the magnitude of the predicted adverse effects is minimal and restricted to the local scale.

2) The degree to which the selected alternative will affect public health or safety.

The environmental analysis documented no significant effects on public health and safety from any of the actions described in the proposed action. Mitigation measures to control particulate matter during construction will minimize potential public health effects.

3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farm lands, wetlands, wilderness, wild and scenic rivers, or ecologically critical areas.

The EA evaluated the area of the proposed action and determined no unique geographic characteristics such as Wild and Scenic Rivers, Prime or Unique Farmlands, Areas of Critical Environmental Concern, designated Wilderness areas, or Wilderness Study Areas were present or within the immediate vicinity. Implementation of the proposed action will have no effect on such resources.

4) The degree to which the effects on the quality of the human environment are likely to be highly controversial.

Under (40 CFR 1508.27(b) (4)), “You must consider the degree to which the effects are likely to be highly controversial. Controversy in this context means disagreement about the nature of the effects, not expressions of opposition to the proposed action or preference among the alternatives. There would always be some disagreement about the nature of the effects for land management actions, and the decision-maker must exercise some judgment in evaluating the degree to which the effects are likely to be highly controversial. Substantial dispute within the scientific community about the effects of the proposed action would indicate that the effects are likely to be highly controversial.”

Effects on the quality of the human environment from authorizing the Proposed Action are not likely to be highly controversial from a scientific perspective. The action of granting a right-of-way, for any purpose, is one which may evoke strong emotional responses in some people. However, granting of a right-of-way for development of an energy storage process with a conservative environmental footprint is both a permissible use of public land and not likely to evoke significant negative responses.

5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

The proposed action is not unique or unusual, and understanding of the resources in the area is thorough. The effects of rail, road, and transmission line construction and maintenance activities are well understood and the BLM has extensive experience evaluating the environmental effects

associated with these right-of-way authorizations. The environmental analysis did not identify any highly uncertain, unique, or unknown risk effects on the human environment which would result from authorizing the project.

6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

Any similar action must be evaluated through an appropriate site-specific environmental review and decision making process consistent with applicable law, regulation, policy, and land use plan guidance. This project neither establishes a precedent nor represents a decision in principle about future actions. The granting of rights-of-way on federal lands for use by private entities is a long standing process. A decision to grant would not limit later resource management decisions for areas open to development proposals.

7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts – which include connected actions regardless of land ownership.

The Proposed Action, as described above and within the EA, is a stand-alone project with no additional related or connected actions. The Proposed Action was evaluated for potential cumulative impacts in the context of past, present, and reasonably foreseeable actions. No individually significant or cumulatively significant effects are identified in the EA. None of the alternatives analyzed in the EA were predicted to contribute to significant cumulative effects on the human environment at either the local, regional, state-wide, national, or international scale.

8) The degree to which the action may adversely affect districts, sites, highways, structures, or other objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

A Class III cultural resource inventory of the area of potential effect for the proposed project was completed and no districts, sites, highways, structures, or other objects currently listed in or eligible for listing in the National Register of Historic Places were identified. The proposed undertaking will have no effect on historic properties. Any future development of the surrounding land will be subject to additional Section 106 compliance, including identification, effects assessment, and, if necessary, resolution of adverse effects.

Area tribes were also invited to review the project for potential effects; no comments were received.

9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973, or the degree to which the action may adversely affect: 1) a proposed to be listed endangered or threatened species or its habitat, or 2) a species on BLM's sensitive species list.

Field surveys were conducted and an assessment of the potential effects on threatened and endangered species was developed. The proposed project would have an effect on the threatened desert tortoise, but no critical habitat for that species is in the area. Approximately 72 acres of habitat will be permanently affected and tortoises found in the area to be in harm's way during construction or operations, would be handled and removed from the area to adjacent areas. The amount of habitat lost to the species is minor compared to the adjacent undeveloped land in this area. No habitat for other threatened or endangered species, or those considered proposed for listing, is present in or near the project area. As the project is consistent with the Las Vegas Resource Management Plan and Final Environmental Impact Statement (October 1998), and

impacts to the species are within the potential impacts described within the US Fish and Wildlife Service Formal Programmatic Consultation with BLM (January 2, 2013), BLM will request appending the project to that Opinion, setting stipulations to minimize those effects.

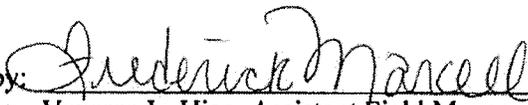
In addition, habitat within the project area was suitable for several BLM sensitive plant species, including halfring milkvetch (*Astragalus mohavensis* var. *hemigyus*), yellow two-tone beardtongue (*Penstemon bicolor* ssp. *bicolor*), and rosey two-tone beardtongue (*Penstemon bicolor* ssp. *roseus*), and BLM sensitive snakes and desert bighorn sheep. However, none of these species were observed during field surveys, with the exception of one observation of a Mojave Desert sidewinder (*Crotalus cerastes cerastes*), and suitable habitat for these is present throughout the region. In addition, birds covered under the Migratory Bird Treaty Act are present in the area and could be affected during construction of the project; however, measures to avoid impacts to these resources will be implemented.

10) Whether the action threatens a violation of a federal, state, local, or tribal law, regulation or policy imposed for the protection of the environment, where non-federal requirements are consistent with federal requirements.

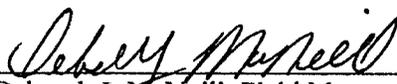
All environmental laws were considered during development of the Proposed Action to prevent possible violations. The Proposed Action would not violate, or threaten to violate, any federal, state, tribal, or local laws or requirements for the protection of the environment. The Proposed Action would not violate the Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, or Endangered Species Act.

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2/19/2016
Date

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Environmental Assessment

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

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Draft Environmental Assessment
of ARES Nevada, LLC's
Application for a Right-of-Way Permit

File Number: N-92514

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ACRONYMS

AADT	Annual Average Daily Traffic
AAQS	Ambient Air Quality Standards
ACCC	Aluminum Conductor Composite Core
ACEC	Area of Critical Environmental Concern
AML	Appropriate Management Level
APLIC	Avian Power Line Interaction Committee
ArcGIS	Geographic Information System (ESRI GIS Program)
AREMA	American Railway Engineering & Maintenance-of-Way Association
ATV	All Terrain Vehicle
AUMs	Animal Unit Months
BAQP	Bureau of Air Quality Planning (Nevada)
BBCS	Bird and Bat Conservation Strategy
BCC	Birds of Conservation Concern
BLM	Bureau of Land Management
BMP	Best Management Practices
CAISO	California Independent System Operator
CEDS	Comprehensive Economic Development Strategy
CEQ	Council on Environmental Quality
CESA	Cumulative Effects Study Area
CFR	Code of Federal Regulations
DAQEM	Department of Air Quality & Environmental Management
EA	Environmental Assessment
ECN	Energy Communications Network
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency (Federal)

ERMAs	Extensive Recreation Management Areas
ESA	Endangered Species Act – (16 U.S.C. 1536(c))
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FLPMA	Federal Land Policy and Management Act – (43 U.S.C. 1701 et. seq.)
FONSI	Finding of No Significant Impact
FRA	Federal Railroad Administration
GHG	Greenhouse Gas
GIS	Geographic Information System
GOED	Governor’s Office of Economic Development
HMA	Herd Management Area
HUD	Housing and Urban Development
IEEE	Institute of Electrical and Electronic Engineers
IHHA	International Heavy Haul Association
IPaC	Information, Planning, and Conservation
KOPs	Key Observation Points
kV	Kilovolt
MBTA	Migratory Bird Treaty Act – (16 U.S.C. 703-711)
MOW	Maintenance of Way
mph	Miles per hour
MSDS	Material Safety Data Sheets
MW	Megawatt
MWH	Megawatt Hour
NAAQS	National Ambient Air Quality Standards
NAC	Nevada Administrative Code
NCREDA	Nye County Regional Economic Development Authority

NDA	Nevada Department of Agriculture
NDEP	Nevada Division of Environmental Protection
NDOT	Nevada Department of Transportation
NDOW	Nevada Department of Wildlife
NEPA	National Environmental Policy Act – (42 U.S.C. 4321 et seq.)
NESC	National Electrical Safety Code
NHPA	National Historic Preservation Act
NNHP	Nevada Natural Heritage Program
NNPS	Nevada Native Plant Society
NRA	National Recreation Area
NRCS	Natural Resource Conservation Service
NRS	Nevada Revised Statutes
OHV	Off –Highway Vehicle
OPGW	Optical Ground Wire
OSHA	Occupational Safety and Health Administration
PILT	Payment in Lieu of Taxes
PL	Public Law
PM _{2.5}	Particulate Matter, less than 2.5 microns
PM ¹⁰	Particulate Matter, less than 10 microns
POD	Plan of Development
PRPD	Pahrump Regional Planning District
RDAs	Regional Development Authorities
REM	Regulation Energy Management
RFFA	Reasonably Foreseeable Future Actions
RMP	Resource Management Plan
ROW	Right-of-Way

RUS	Rural Utility Service
SEZ	Solar Energy Zone
SRMAs	Special Recreation Management Areas
SWPPP	Stormwater Pollution Prevention Plan
UEPA	Utility Environmental Protection Act
USC	United States Code
USDOI	United States Department of Interior
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
VEA	Valley Electric Association
VRM	Visual Resource Management

1 PURPOSE AND NEED

1.1 Introduction

The Bureau of Land Management (BLM) received an SF 299 Application for Transportation and Utility Systems and Facilities on Federal Lands in January 2014, requesting approval for ARES Nevada, LLC (ARES) to construct a Regulation Energy Management (REM) facility in Clark and Nye Counties, Nevada. Granting of the Right-of-Way (ROW) request is a federal action subject to analysis under the National Environmental Policy Act (NEPA) of 1969 (Public Law [PL] 1-91-190, as amended [42 United States Code (USC) 4321 *et seq.*]).

ARES is proposing to construct, operate and maintain a REM facility on BLM managed land in Clark and Nye Counties, Nevada, to assist in transmission system stability and reliability and electricity supply management on the regional electrical transmission grid. The Proposed Project is a 50 megawatt (MW) gravity based Energy Storage System that would be constructed on 72 acres of BLM managed land. The system utilizes multiple electric locomotives operating on a single steep grade railroad track to store or deliver electric energy into the regional electrical grid -- using electricity from the grid to power the locomotives uphill, returning that electricity to the grid as the locomotives descend with their motors operating as generators. The Proposed Project is designed to balance variable energy demands and renewable energy contributions across an electrical grid system. The Proposed Project does not produce more energy than is introduced into its system; therefore it is not an electrical generation facility.

ARES proposes to locate this project in the Carpenter Canyon area, east of Pahrump, in Nye and Clark Counties, Nevada (see Figure 1).

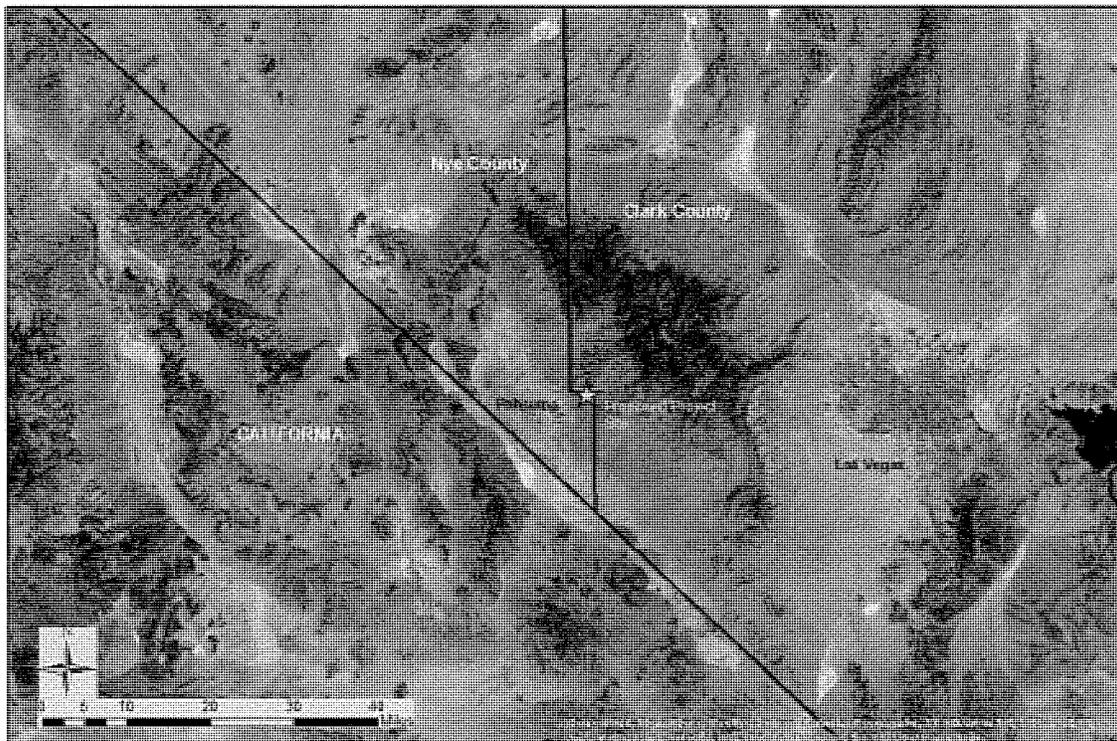


Figure 1. General vicinity map for the ARES REM project location.

The alignment of the Proposed Action, including the facilities and maintenance area and transmission, is contained within Township 21 South, Range 54 East, Sections 1, 2, and 12; Township 21 South, Range 55 East, Sections 6 and 7; Township 20 South, Range 55 East, Sections 22, 27, 28, 31, 32 and 33; and Township 20 South, Range 54 East, Sections 34 and 35 (see Figure 2). The Proposed Action would include 72 acres of permanent and 98 acres of temporary disturbance on BLM lands.

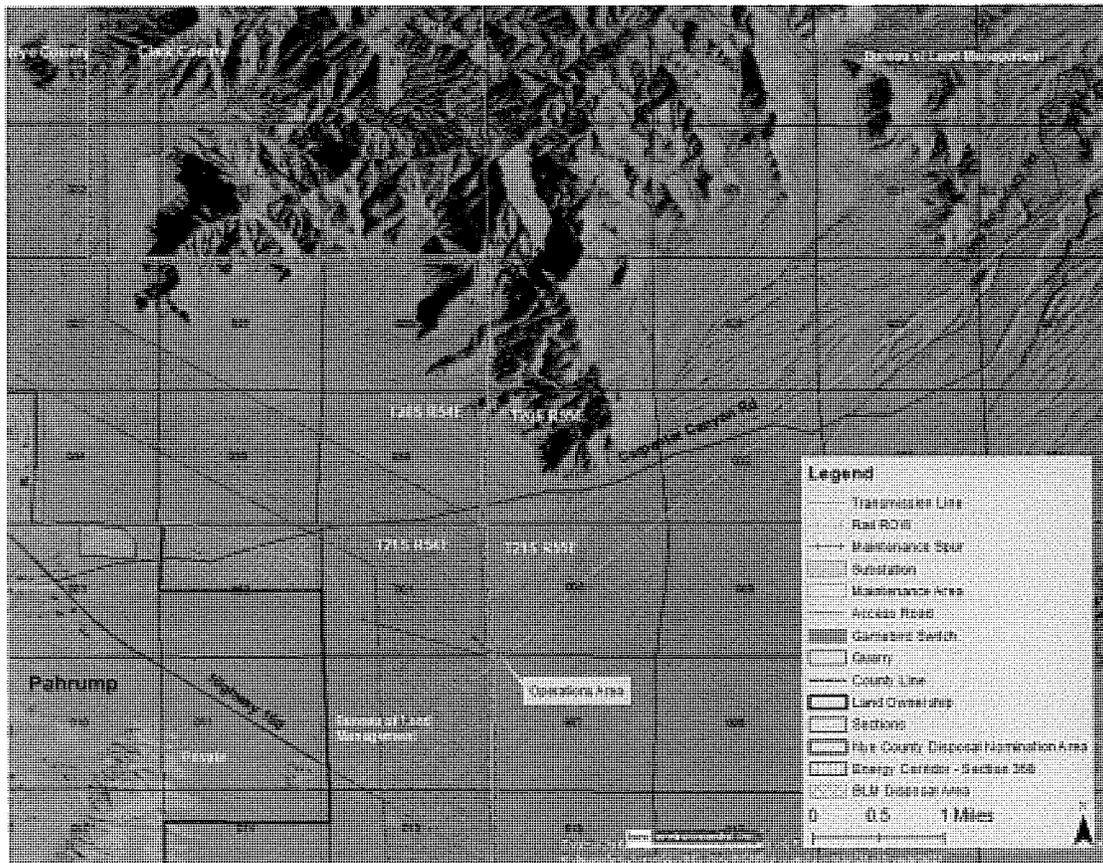


Figure 2. Proposed Action project components and locations.

This EA will analyze and disclose the direct, indirect, and cumulative impacts of the Proposed Action, an Alternative, and a No Action alternative. This EA also provides a basis for determining whether the Proposed Action, including associated mitigation measures, would result in impacts of sufficient scale to necessitate preparation of an Environmental Impact Statement (EIS) or would support a Finding of No Significant Impact (FONSI).

The proposed action would assist in electricity supply management and transmission system stability and reliability on the regional electrical transmission grid. The system accomplishes this by using electricity from the transmission grid when electricity is abundant (i.e. low energy usage times) to power locomotives uphill. Electricity is returned to the transmission grid when needed (i.e. high usage times) as the locomotives descend, the electric motors operating as generators.

The operation of the project will provide 12.5 megawatt hours (MWH) of fast-response energy storage necessary to assist in the balancing of electrical supply and demand to counter highly variable energy usage and unpredictably variable renewable energy supplies, while maintaining grid reliability.

The system, as proposed, would have an energy return efficiency of greater than 80% and could increase the amount of renewable energy resources added to the electric grid without compromising grid efficiency, reliability, or requiring additional impacts to the environment.

1.2 Purpose and Need

The BLM Southern Nevada District Office received a Right of Way application from ARES to construct a gravity based rail energy storage system on approximately 170 acres of BLM managed land in Clark and Nye Counties (BLM Standard Form 299, *Application for Transportation and Utility Systems and Facilities on Federal Lands*). ARES has identified a need to provide environmentally-friendly and sustainable energy storage system in support of promoting electrical grid stability and renewable energy consistency. The Valley Electric Association (VEA) transmission grid would support this project, allowing communities within southern Nye County as well as nearby California communities served through the California Independent System Operator (CAISO) network to benefit from enhanced grid stability and responsiveness to variable energy demands through consumer use and renewable energy sources.

The Proposed Action is to address current and future grid reliability and stability issues, in accordance with Federal Energy Regulatory Commission (FERC) objectives and in conformance with the objectives set forth in the Las Vegas Resource Management Plan (RMP) and Record of Decision approved in October 1998. Under Objective RW-1, the BLM is to “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,” with Management Direction RW-1-h stating, “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 rights-of-way under the authority of the Federal Land Policy Management Act” (FLPMA).

The BLM will review ARES’s proposal and, in accordance with NEPA, FLPMA, and other applicable laws, it will issue a decision to grant the proposed ROW; grant the ROW with modifications; or deny the ROW (43 CFR 2805.10(a)(1)).

1.3 Scoping, Public Involvement and Issues

An initial kickoff meeting was held between the BLM and ARES on August 14, 2013, as a first step in identifying potential environmental issues to be addressed. The potential issues were also internally scoped by BLM specialists after the meeting with ARES. Several issues emerged during the scoping effort which included:

- Air Quality
 - Temporary exceedances of ambient air quality standards (AAQS) for 24-hour and annual concentrations levels of particulate matter 10 microns in diameter or smaller (PM₁₀) and 24-hour concentration levels of particulate matter 2.5 microns in diameter or smaller (PM_{2.5}) concentration levels along the proposed ROW and in the immediate surrounding areas during construction of the facilities.
- Flood Plains
 - Direct impacts to storm water flow runoff due to modification of existing drainage channels.
- Threatened and Endangered Species
 - Impacts to federally listed Mojave desert tortoise (*Gopherus agassizii*).
- Migratory Birds
 - Direct impacts to breeding, nesting, and wintering areas, as well as migration routes.

- Human Health and Safety
 - Safety issues related to construction and the operation of electric shuttle trains.
 - Potential impacts to recreational users.
- Hydrologic Conditions
 - Modifications to surface water run-off patterns.
 - Increases in sedimentation in run-off waters.
- Land Use Authorizations
 - Upgrades to existing transmission will require modifications to existing land use authorizations.
 - Direct impacts to an existing utility corridor.
- Minerals
 - Handling of excess mineral materials related to excavations.
- Recreation
 - Potential limitations to current levels of recreational use.
- Socio-Economic Values
 - Direct and indirect impacts to the local economy and work force.
- Soils
 - Direct loss and cumulative impacts to soils and the ecosystem services soils provide, including the loss of desert pavement.
- Transportation
 - Direct impacts to existing BLM travel routes.
 - Existing road improvements and repairs.
- Vegetation
 - The spread of noxious weeds in disturbed areas and colonization of adjacent undisturbed habitats.
 - The deposition of fugitive dust from large areas of disturbed soil onto habitats outside the project area.
 - Cumulative loss and fragmentation of habitat for BLM special status species.
 - Cumulative loss and fragmentation of native plant communities and the ecosystem services they provide.
- Forestry
 - Direct impacts to special forest products (cactus and yucca) from the project area.
 - Removal of cactus and yucca species from the project area.
 - Direct and cumulative impacts to BLM lands used for commercial seed collection.
- Visual Resources
 - The Proposed Action occurs on Visual Resource Management Class III lands.
- Wild Horses and Burros
 - Direct impacts to the free movement of Wild Horses and Burros.
- Wildlife (including BLM sensitive species)
 - Impacts to birds and bats would require a Bird and Bat Conservation Strategy (BBCS).
 - Impacts to wildlife habitat and individuals, including BLM sensitive species.
 - Cumulative loss and fragmentation of wildlife habitat.
 - Cumulative loss and fragmentation of habitat for BLM sensitive species.

Section 101(d)(6)(B) of the National Historic Preservation Act of 1966 (NHPA) requires agency officials to consult with Indian tribes who may attach religious and cultural significance to historic properties which may be affected by the Proposed Action. Consulting party invitations were sent by certified letter on May 29, 2014, to:

- Chemehuevi Indian Tribe (Chairman Edward D. Smith and Ron Escobar)
- Las Vegas Paiute Tribe (Chairman Benny Tso and Cultural Coordinator Kenny Anderson)
- Moapa Band of Paiutes (Chairwoman Aletha Tom)
- Moapa Band of Paiutes Cultural Committee (Deanna Domingo)
- Pahrump Paiute Tribe (Chairman Eddie Jim)
- Timbisha Shoshone Tribe (Chairman George Gholson and THPO Barbara Durham)

1.3.1 Consultations with Cooperating Agencies/Organizations

As defined in 40 CFR 1508.5 (Council on Environmental Quality - CEQ), a cooperating agency is any federal agency other than a lead agency (BLM) which has jurisdiction by law or special expertise with respect to any environmental impact. A state or local agency of similar qualifications or, when the effects are on a reservation, an Indian Tribe may, by agreement with the lead agency, become a cooperating agency. No other agency has elected to become a cooperating agency.

The Proposed Action is located on BLM managed land, surrounded by BLM managed land; therefore, adjacent land owners were not consulted.

Section 106 of the NHPA requires Federal agencies to take into account the effects of their undertakings on historic properties, and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment. In January 2015, HDR Inc. submitted a “Cultural Resources Survey of the Proposed ARES Regulation Energy Management System Project, Clark and Nye Counties, Nevada” to the BLM detailing cultural findings which may be impacted by the Proposed Action. This report stated records reviews and pedestrian surveys failed to find any cultural materials which may be impacted physically, or any cultural sites which may be impacted visually. Additional Section 106 scoping will be performed with the Public Scoping procedures if needed.

Nye County (lower elevations of the proposed ROW, including the operations and maintenance facilities and transmission) has been actively working with ARES and the BLM on this project. The BLM and representatives from Nye County (Commissioners Frank Carbone and Dan Schinhofen, County Manager Pamela Webster, and County Planning Director Darrell Lacy) met on February 5, 2015, to discuss this project.

Users of the BLM managed land will have the opportunity to comment on the proposed action during the public comment period and during any public meetings (dates to be determined).

1.3.2 Public Meetings

The EA will be made available for a 30-day public review period.

Public meetings are anticipated to be held in Pahrump and Las Vegas, Nevada, after completion of the Draft EA. These meetings will be held to present information on the Proposed Project to communities that may be impacted by the Proposed Action, and provide copies of the Draft EA for public review.

1.3.3 Project Location and Existing Land Use

The Proposed Action is located entirely on BLM managed land in Clark and Nye County (see Figure 2).

Three components of the project are within the boundary of the designated West-wide Energy Corridor (Section 368 of the Energy Policy Act of 2005, 42 U.S.C. § 15926). The transmission interconnection from the project to the existing Valley Electric Association (VEA) transmission line would cross the

corridor for approximately 3,793 feet. The southwestern end of the main rail alignment extends into the corridor approximately 517 feet. The maintenance and spur rail line associated with the operation and maintenance facility extends beyond these structures 1,085 feet into the corridor. This Section 368 Energy Corridor has been designated for linear energy-based infrastructure development; the Corridor is not yet being utilized. ARES may shift the building location east, siting the building closer to the modular crew and facility control building, which would remain outside of the 368 Energy Corridor boundary.

Uses for the area include recreational off-road vehicle use and access to the Spring Mountains via Carpenter Canyon Road, and the Highway 160 Seed Collection Area. Adjacent uses include a BLM fire station (on Carpenter Canyon Road), a quarry (adjacent to proposed new transmission line and VEA Gamebird Switch Station Expansion, Township 21S, Range 54E, Section 3, Lots 1 and 2), and Pahrump Speedway (adjacent to proposed new transmission line and VEA Gamebird Switch Station Expansion).

BLM designated and Nye County proposed disposal lands exist within the transmission corridor for the project as well as on adjacent land, between the Proposed Project and the Town of Pahrump (see Figure 2).

2 PROPOSED ACTION AND ALTERNATIVES

2.1 The Proposed Action

ARES proposes to construct this project entirely on BLM managed land in the Carpenter Canyon area, east of Pahrump and Nevada State Highway 160, in Nye and Clark Counties, Nevada (see Figure 2).

The Proposed Action includes numerous components presented and discussed throughout this document as corridors or areas, including related or adjacent components in those corridors or areas (Figure 2). The corridors or areas are discussed briefly below and described in more detail throughout this document.

Rail line corridor: The corridor will include the main rail line, rail line overhead catenary power line, and trackside access and maintenance road. The main rail track will be 5.5 miles (29,036 feet) long, a mid-elevation spur track will be 0.19 miles (995 feet) long, and parallel facility area maintenance siding and maintenance storage spurs 0.22 miles (1,171 feet) and 0.33 miles (1,596 feet) long, respectively, for conducting maintenance on the locomotive components and storing the weighted cars. The rail line will not be lighted, though a lighted rail crossing sign will be active at Carpenter Canyon Road crossing when the train is in the area.

Operations, control and maintenance facilities: This area will be constructed on a concrete pad approximately 295 feet by 140 feet (0.8 acres). This area will include an operations building (two story, 48 feet by 28 feet), a maintenance building (125 feet by 42 feet), and an employee and visitor parking lot adjacent to the operations building. In this general a transmission interconnection substation (ARES substation - 170 feet by 140 feet) will be constructed. Outdoor lighting on these facilities will be minimal and shielded downward.

Transmission and access road corridor: The corridor will include a new transmission line connecting the ARES substation to the existing VEA transmission line (3,870 feet), and upgrades to a portion of the existing transmission line (7,200 feet). New transmission lines (6,260 feet) will also be constructed to reroute the existing line to connect to the existing Gamebird Switch Station; approximately 5,200 feet of the existing 230kV transmission line currently bypassing Gamebird Switch Station will be removed. The existing Valley Electric Association (VEA) Gamebird Switch Station (ROW N-59100) will be expanded

by 2.4 acres, within the existing ROW boundary. Access/maintenance roads will be co-located with transmission lines.

2.1.1 Applicant and Agencies involved

ARES is proposing to construct, operate and maintain a REM facility on BLM managed land in Clark and Nye Counties, Nevada, in coordination with Valley Electric Association (VEA), and the support of Nye County.

ARES is coordinating with Clark and Nye Counties to identify required local permits, easements or dedications. Additional permits required by other local, state, and federal agencies are being investigated.

ARES has set up an Energy Planning and Conservation Fund (Assembly Bill 307) with the Nevada Department of Wildlife (NDOW).

2.1.2 Action to be taken

The Proposed project will provide up to 50 megawatts (MW) of gravity-based electrical energy regulation on 72 acres of BLM managed land, in order to balance variable energy demands and potential intermittent renewable energy contributions through energy storage. The system is a gravity-based energy storage system utilizing electric shuttle trains operating on a standard railroad track with an overhead catenary system to store electric energy in the form of gravitational potential energy. A maintenance road will be constructed adjacent to the rail line.

Additionally, upgrades will be required to the existing VEA transmission line in the immediate area to connect the ARES REM facility to the regional electric grid.

2.1.2.1 Location

ARES proposes to construct this project entirely on BLM managed land in the Carpenter Canyon area, east of Pahrump and Nevada State Highway 160, in Nye and Clark Counties, Nevada (see Figure 2).

The legal land descriptions for each component of the project are located in Tables 2-1, 2-2, and 2-3.

The upslope (northeast) end of the Proposed Action will begin in Township 20 South, Range 55 East, Section 22. The railroad corridor section of the ROW will run southwest (down-slope) to an operations and maintenance area (support facilities) which will include a new substation (ARES substation), a shuttle train maintenance building, and an operations control center. The operations and maintenance area and the ARES substation will be located within Nye County, outside the eastern border of the Section 368 Corridor. The maintenance and spur rail line passes through the maintenance building and extends about 1,085 feet into the Section 368 Corridor.

A new 230 kilovolts (kV) transmission line (interconnection) to be operated by VEA, will run approximately 3,870 feet (1,179 meters) northwest across the Section 368 corridor to connect with the existing VEA 230kV transmission line ROW (N-057100), with approximately 3,793 feet (1,156 meters) within the corridor. The existing VEA transmission line will then become the interconnection for approximately 7,200 feet (2,195 meters), at which point a new 4,400-foot (1,341-meter) double circuit transmission line will run due west from the existing transmission to connect with the existing VEA Gamebird Switch Station (N-059100), located in Township 20 South, Range 54 East, Section 34. This new east/west line will consist of typical double-circuit structures approximately 120 to 200 feet (36.6 to 61 meters) tall, spaced 425 feet (129.5 meters) apart, and will include a co-located maintenance road.

The Gamebird Switch Station will be expanded; the expansion and related construction will remain within the boundaries of the existing ROW (N-059100). A new single-circuit transmission line, approximately 1,860 feet (567 meters) long, will be constructed north from Gamebird Switch Station to reconnect with the existing VEA (N-057100) 230kV transmission line. This new north/south line will consist of typical single-circuit structures approximately 120 to 200 feet (36.6 to 61 meters) tall, spaced 800 feet (244 meters) apart, and a co-located maintenance road. Both the new double-circuit and single-circuit transmission lines will be entirely on BLM managed land, and require ROWs consistent with the existing VEA ROW, which is 100 feet (30.5 meters) in width, containing the new transmission lines and a maintenance road.

Approximately 5,250 feet (1,600 meters) of the existing 230kV transmission line (N-57100) will be removed (see Figure 3).

Table 2-1: Proposed Rail Line Corridor Legal Land Description

Township and Range	Section	Aliquot Part
T. 20 South, R. 55 East	22	Begins in SW ¼ of the NE ¼, running southwest through the NW ¼ of the SE ¼, NE ¼ of the SW ¼, and SE ¼ of the SW ¼, to the SW ¼ of the SW ¼; then
T. 20 South, R. 55 East	27	NW ¼ of the NW ¼ of the NW ¼; then
T. 20 South, R. 55 East	28	NE ¼ of the NE ¼, running southwest through the SE ¼ of the NE ¼, SW ¼ of the NE ¼, NW ¼ of the NW ¼ of the SE ¼, NE ¼ of the SW ¼, and NW ¼ of the SE ¼ of the SW ¼, to the SW ¼ of the SW ¼, then
T. 20 South, R. 55 East	33	NW ¼ of the NW ¼ of the NW ¼; then
T. 20 South, R. 55 East	32	NE ¼ of the NE ¼, running southwest through the SW ¼ of the NE ¼, and NE ¼ of the SW ¼, SE ¼ of the NW ¼ of the SW ¼, to the SW ¼ of the SW ¼, then
T. 20 South, R. 55 East	31	SE ¼ of the SE ¼ of the SE ¼, then
T. 21 South, R. 55 East	06	NE ¼ of the NE ¼, running southwest through the SW ¼ of the NE ¼, and NE ¼ of the SW ¼, and NW ¼ of the SE ¼ of the SW ¼, to SW ¼ of the SW ¼, then
T. 21 South, R. 55 East	07	NW ¼ of the NW ¼ of the NW ¼, then
T. 21 South, R. 54 East	12	NE ¼ of the NE ¼ of the NE ¼.
T. 21 South, R. 54 East <i>-maintenance siding and spur line</i>	01	SE ¼ of the SE ¼.

Table 2-2: Proposed Operation, Control, and Maintenance Facilities Legal Land Description

Township and Range	Section	Aliquot Part
T. 21 South, R. 54 East <i>-maintenance and control buildings</i>	01	SE ¼ of the SE ¼, of the SE ¼.
T. 21 South, R. 54 East <i>-ARES substation</i>	12	NE ¼ of the NE ¼, of the NE ¼.

Table 2-3: Transmission Interconnection Line Legal Land Description

Township and Range	Section	Aliquot Part
Existing Transmission to be Upgraded		
T. 21 South, R. 54 East	01	NW ¼ of the SW ¼, running to the SW ¼ of the NW ¼
T. 21 South, R. 54 East	02	NE ¼ of the S ½ of the NE ¼, through the N ½ of the NE ¼, running to the N ½ of the NW ¼
New Transmission Connection to Gamebird Switch Station		
T. 21 South, R. 54 East	02	N Section border of the NW ¼ of the NW ¼
T. 21 South, R. 54 East	03	N Section border of the NE ¼, and N Section border of the NE ¼ of the NW ¼
T. 20 South, R. 54 East	34	Running north/south in the E ½ of the W ½ of the SW ¼
Existing Transmission to be Removed		
T. 20 South, R. 54 East	34	SE ¼ running to the NE ¼ of the SW ¼
T. 20 South, R. 54 East	35	SW ¼ of the SW ¼
New Interconnection Connecting ARES Substation to Existing Line		
T. 21 South, R. 54 East	12	Running northwest from the NE ¼ of the NE ¼, of the NE ¼, through
T. 21 South, R. 54 East	01	S ½ of the SE ¼ of the SE ¼, SW ¼ of the SE ¼, N ½ of the SE ¼ of the SW ¼, to the SE ¼ of the NW ¼ of the SW ¼.

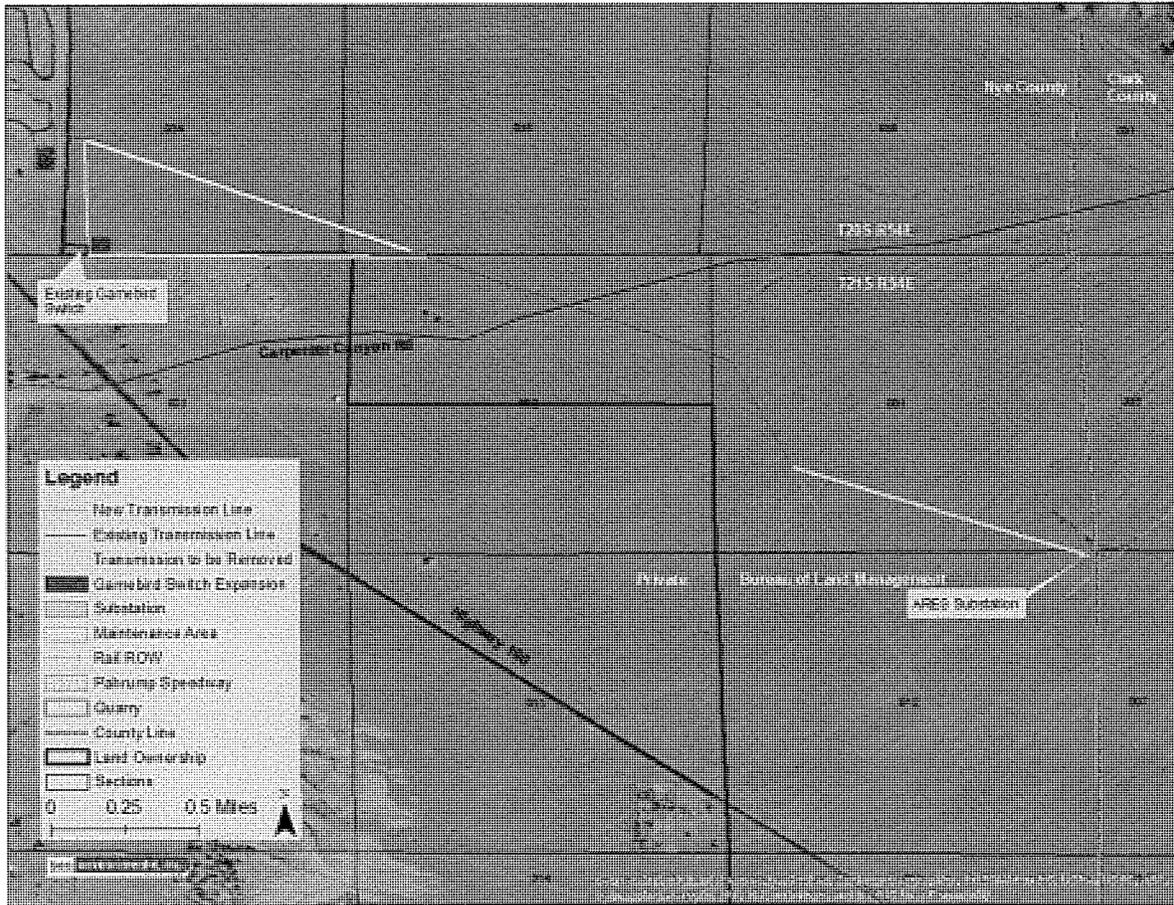


Figure 3. Gamebird Switch Station expansion and associated transmission components.

2.1.2.2 Time frame for construction and operation

Ideally, following the conclusion of required geotechnical and engineering surveys, ARES would begin construction of the project in the first quarter of 2017, with construction being completed mid 2017; operations would begin third quarter 2017. The system is designed to provide energy storage capabilities for 30 years.

2.1.3 Construction

The Proposed Project includes multiple temporary and permanent (long-term) components constructed and operated by ARES. Other components will be constructed and operated by VEA to directly support the project. Brief summaries of those components are provided below.

The Proposed Action includes four long-term disturbance areas and one short-term disturbance area (see Table 2-1, 2-2, and 2-3):

- A rail line corridor - 5.5 miles (8.9 kilometers) long averaging 75 feet (12.2 meters) wide (siding area will be wider, grading required to maintain a constant elevation change will vary)(see Figure 4).

- An operations, control and maintenance facilities area containing two to three buildings (offices and control center may be combined) and a small staff parking lot (graveled), for a total size of 0.8 acres (see Figure 5). These facilities would be constructed on a concrete pad.
- A transmission and access road corridor, which includes the new transmission interconnection as well as upgrades to the existing transmission - approximately 3,870 feet (1,179.6 meters) long by 100 feet (30.5 meters) in width (see Figures 4 and 5).
 - Removal of approximately 5,250 feet (1,600 meters) of existing transmission which will become obsolete with the upgrades required for the existing transmission to support the Proposed Action (see Figure 4).
- Construction related disturbance areas (cut and fill areas, equipment storage yards) will create a variable-width buffer along the rail corridor, and add 50 feet (15.2 meters) to all transmission corridors, for a short-term disturbance of 98 acres.

In total, 170 acres would be disturbed, 72 acres of which would be long-term infrastructure (see Table 2-4).

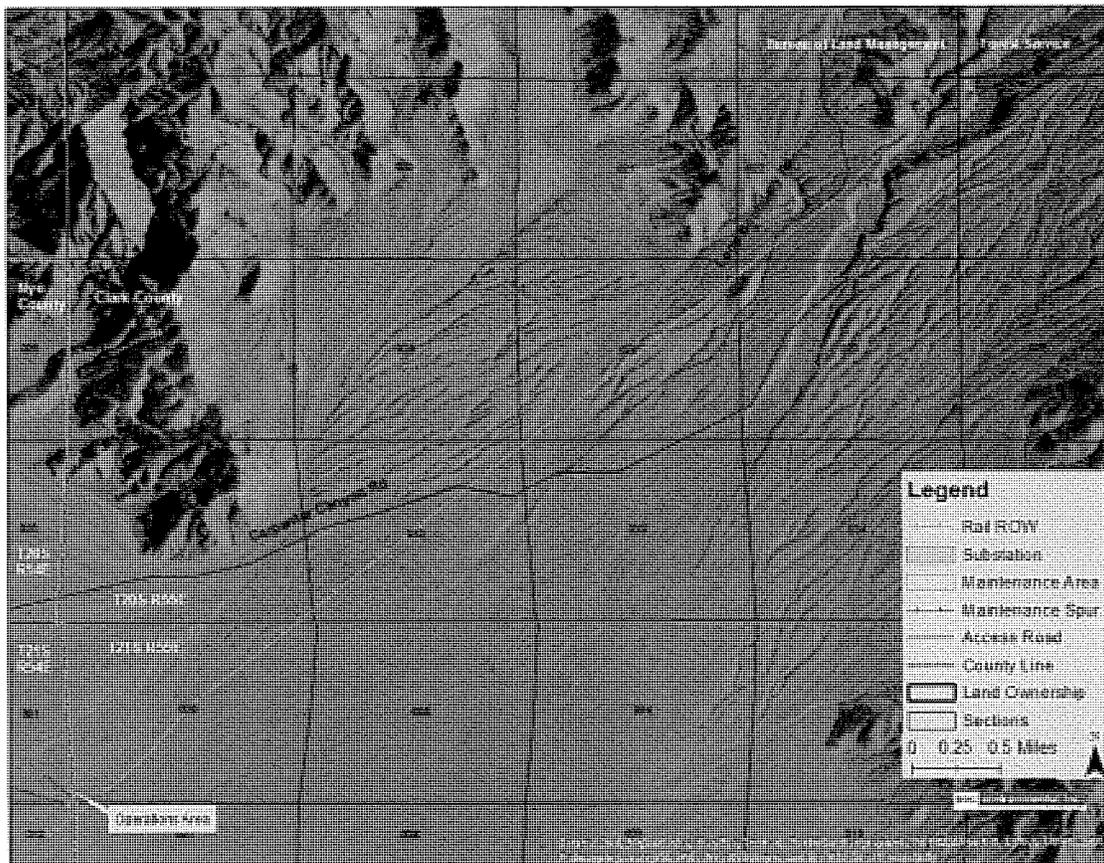


Figure 4. Rail Corridor for the Proposed Action.

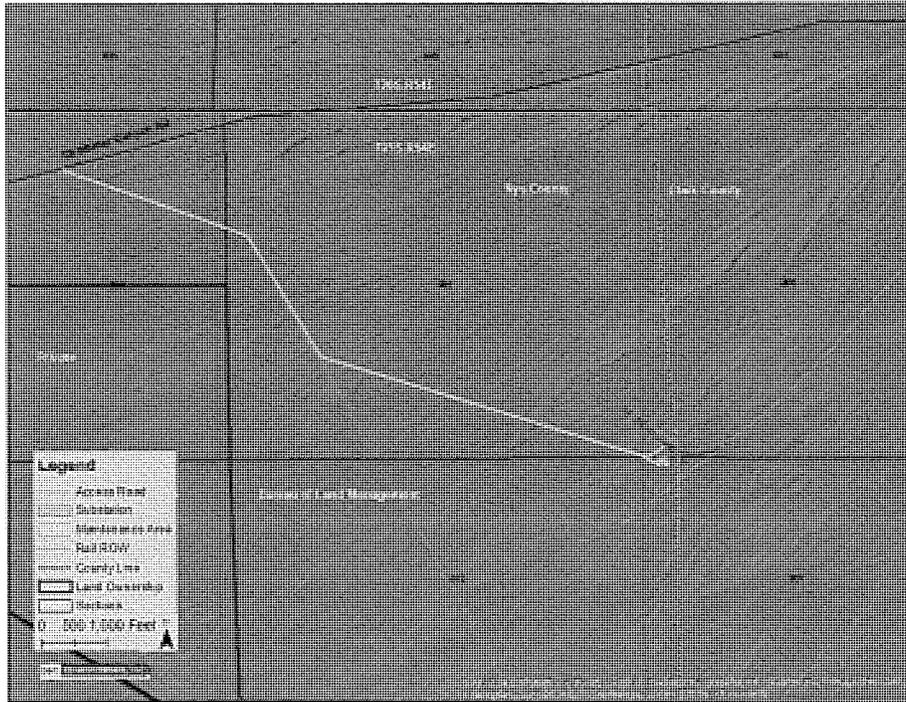


Figure 5. Project Access Road within the transmission line alignment.

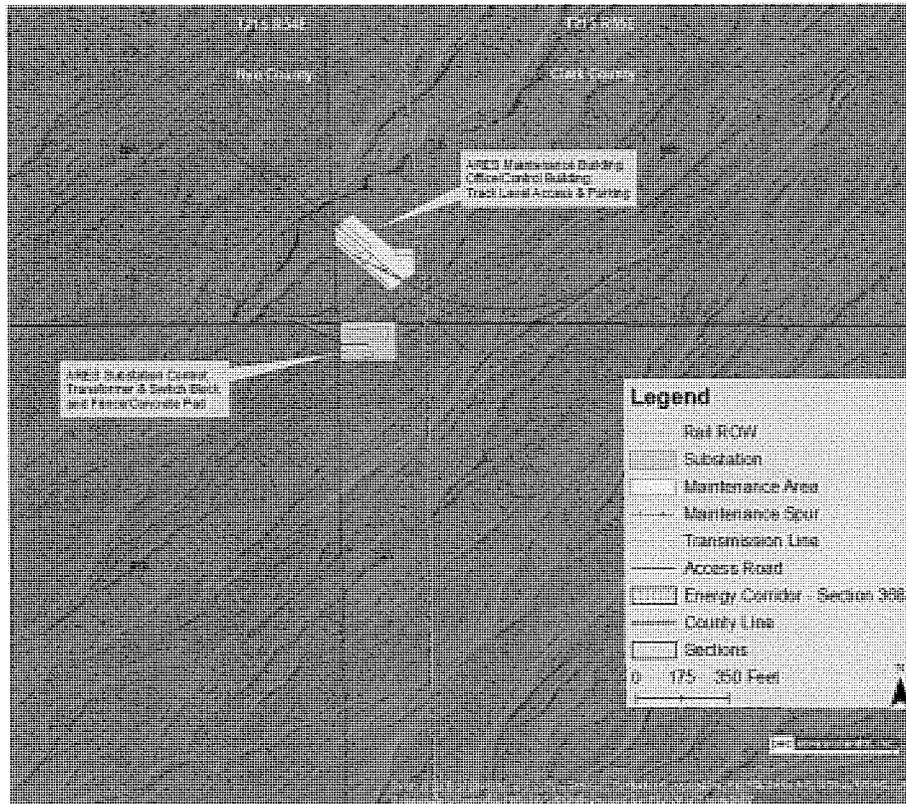


Figure 6. Operations, maintenance, and facilities area for the Proposed Action.

Table 2-4. Summary of Permanent and Temporary Disturbance for the Proposed Action

Disturbance Type	Acres of Disturbance	Notes
Long-Term Disturbance		
Rail Corridor	28.0	Rail corridor will include the rail line, overhead catenary line, and trackside access and maintenance road. The main rail track will be 5.5 miles (29,036 feet) long, the mid-elevation siding track will be 0.19 miles (995 feet) long, and the parallel facility area maintenance siding and maintenance storage spurs 0.22 miles (1,171 feet) and 0.33 miles (1,596 feet) long, respectively.
Operations Control and Maintenance Facilities	0.8	Operations and Maintenance Facilities area will be constructed on an approximate 260 foot by 140 foot concrete pad. Area will include an operations building (two story, 48 feet by 28 feet), a maintenance building (125 feet by 42 feet), and an employee and visitor parking lot adjacent to the operations building. (Rail lines are considered above, in the rail corridor summary.)
ARES Substation	0.5	A transmission interconnection substation (ARES substation) will be constructed on a separate fenced area in this location (170 feet by 140 feet).
Gamebird Switch Station Expansion	2.4	Located within existing VEA Gamebird Switch Station ROW N-59100.
Transmission Lines and Access Roads	39.8	Existing lines to be upgraded include 16.5 acres within an existing 100 foot wide ROW. New transmission consists of a 8.9 acre interconnection and 14.4 acres for the two new Gamebird Switch Station connections. Access roads will be co-located with transmission; acreage of disturbance for roads is included in the Transmission Lines acreage.
Total Long-Term	71.5 (72)	
Short-Term Disturbance		
Rail Corridor	51.5	Disturbance will occur on approximately 40 feet either side of the rail corridor infrastructure, for the length of the corridor.
Operations Control and Maintenance Facilities	6.0	Disturbance associated with the construction and installation of the operations building, maintenance building, ARES substation, parking lot, and laydown yard, materials storage, and vehicle parking.
Transmission Lines	40.6	Disturbance associated with the construction of the ARES substation interconnection (4.4 acres), upgrades to existing VEA transmission (8.3 acres), new VEA transmission lines (7.2 acres), removal of existing transmission (15.2 acres), Gamebird Switch Station expansion (0.6 acres), and five pulling stations (5 acres).
Total Short-term	98.1 (98)	
Total Disturbance	169.6 (170)	

2.1.3.1 Pre Construction Activities

2.1.3.1.1 Land Surveys

Multiple exploratory and environmental analysis surveys were conducted by ARES and their contractors during 2014. These surveys included botanical surveys, desert tortoise presence/absence surveys, preliminary alignment measurements, and a potential construction contractor on site meeting.

2.1.3.1.2 Aerial Surveys

In July 2014, an aerial survey of the proposed alignment was conducted in order to develop a more refined alignment and aid in the development of the initial engineering drawings.

2.1.3.1.3 Engineering Surveys

The BLM National Environmental Policy Act (NEPA) process will determine the preferred alignment for the project. Preliminary surveys and other investigations will be completed after a preferred alignment is selected by the BLM during the NEPA process, and on-the-ground investigations will be completed to precisely locate the centerline within the ROW. The exact centerline will be chosen to best implement design criteria, minimize environmental impacts, and satisfy the mitigation measures in the NEPA compliance document to be developed. Detailed surveying and final design drawings will be developed after the NEPA process has been completed. Required permits to conduct surveys on federal lands will be obtained. ARES is preparing to conduct engineering site surveys in consultation with rail design civil engineering consultants J.L. Patterson & Associates, Inc. and TRAMMCO, LLC, or other qualified entities. These more precise and detailed surveys conducted after the NEPA review will establish the exact project centerline, locations of drainage features, and address soil and geotechnical considerations of hydrology and hydraulics, critical drainage areas, climate induced track stability issues, and the anticipated Carpenter Canyon Road crossing.

Prior to construction, the ROW and temporary access roads for construction and maintenance of the 230 kV transmission lines and ARES Substation, will be surveyed to locate the centerlines accurately. Additional ground-based land surveys will be required including structure location (structure staking) surveying, and access road layout. On-ground investigations will be completed to accurately locate the centerline of the approved ROW for the 230 kV transmission lines and ARES Substation, and access roads for construction and maintenance. Construction survey work will consist of transmission line and access road centerline locations and ROW boundaries where necessary. Structure locations will be flagged and staked, and the proposed centerlines will be flagged and staked where needed.

2.1.3.1.4 Cultural Resource Surveys

A Class III cultural survey was conducted by HDR, Inc. during the period November 4 – 8, 2014. The purpose of the cultural resources survey was to locate, document, and evaluate archaeological resources located within the area of potential effects for both routes that could potentially be impacted by the proposed project.

Prior to conducting fieldwork, a Class I records search and review was conducted through the Southern Nevada Archaeological Archive of the Desert Research Institute. Sixteen cultural resources projects have been conducted within one mile of the proposed project area. Six previously recorded archaeological sites have been documented within one mile of the project area; however, none of the sites are located within the project's area of potential effect.

The archaeological survey did not locate any cultural materials.

2.1.3.1.5 Biological Surveys

The Mojave desert tortoise will require special consideration in consultation with BLM, NDOW, and U.S. Fish and Wildlife Service (USFWS). Specific mitigation measures for biological resources will be developed as part of the environmental evaluation. If necessary, additional surveys or Section 7 consultation will be supported through the BLM during the NEPA process. Desert tortoise surveys were conducted along the entire proposed ROW in May, September, and October of 2014. One live tortoise was observed, and multiple burrows were identified.

As requested by the BLM, disturbance of special status plants (e.g. cacti, yucca, etc.) will be avoided during construction to the extent possible. If requested by the BLM, native plants requiring special protections will be flagged in areas of potential surface disturbance prior to construction. Native plant surveys were conducted for the entire proposed ROW during the period April 27 – May 25, 2014. Per Nevada Revised Statutes, potentially impacted yucca and cacti will be mitigated for according to current BLM and/or Nevada Division of Forestry requirements. All other vegetation removed during construction will be disposed of in accordance with BLM guidelines.

2.1.3.1.6 Interconnection Geotechnical Investigation

Geotechnical investigation will be completed for the 230 kV transmission lines, the ARES Substation and the expansion of Gamebird Switch Station. The purpose of the geotechnical investigation is to collect information regarding subsurface stability and soil resistivity, which will be used in the final design of each transmission tower structure and foundation, and used in design of the grounding system for both the transmission line and substations. The geotechnical investigation will consist of the drilling and sampling of soils to a typical depth of 25 to 50 feet below the existing ground surface. The boreholes will have a diameter of approximately 8 inches and will be backfilled with auger cuttings and on-site soils. Each location will be accessed using existing roads and the same access routes that will be used for construction of the 230 kV transmission line and ARES Substation. Surface disturbance will be limited to the actual tracks left by the drill rig and support vehicles within the work areas and access routes. All areas on BLM lands that are disturbed by geotechnical testing activities will be restored per BLM guidance after construction of the 230 kV transmission line and ARES Substation has been completed.

Detailed surveying, geotechnical investigations, and final design drawings will be developed after the NEPA process has been completed to precisely locate the rail line and transmission interconnection centerline within the approved ROW, and address soil and geotechnical considerations of hydrology and hydraulics, critical drainage areas, and climate induced track stability issues. Additional ground-based land surveys will be required including structure location (structure staking) surveying, and access road layout. Construction survey work will consist of transmission line and access road centerline locations and ROW boundaries where necessary. Structure locations will be flagged and staked, and the proposed centerlines will be flagged and staked as necessary.

Geotechnical investigation will be completed for the 230 kV transmission lines, the ARES Substation and the expansion of Gamebird Switch Station. The purpose of the geotechnical investigation is to collect information regarding subsurface stability and soil resistivity, which will be used in the final design of each transmission tower structure and foundation, and used in design of the grounding system for both the transmission line and substation. The geotechnical investigation will consist of the drilling and sampling of soils to a typical depth of 25 to 50 feet (7.6 to 15.2 meters) below the existing ground surface. The boreholes will have a diameter of approximately 8 inches and will be backfilled with auger cuttings and on-site soils. Each location will be with the newly granted or existing ROWs. Surface disturbance will be limited to the actual tracks left by the drill rig and support vehicles within the work areas and access routes. All areas on BLM lands that are disturbed by geotechnical testing activities will be restored per

BLM guidance after construction of the 230 kV transmission line and ARES Substation has been completed.

The rail system will consist of 136 pound rails mounted on steel tensioned concrete rail ties, supported by track ballast comprised of three inch crushed granite or equivalent wear resistant rock. An overhead catenary line, running above the shuttle trains, will be constructed per ARES final electrical design specification.

2.1.3.2 Construction Activities

Construction will involve earth moving, drainage provisions, and placement of materials typical of service roadway and railway alignment construction, and the construction of operations buildings, power transmission line, and rail line. The railway track roadbed, track, overhead catenary, and parallel service road will be built simultaneously. Detailed site plans have not yet been completed; therefore, figures are currently estimates based on initial preliminary site plans and project design. Detailed site plans will be developed after NEPA surveys and reviews have been completed.

In order to not impede stormwater flows from the Spring Mountains, six culverts will be installed where the proposed rail line would cross existing drainages (See Figure 7). The exact dimensions of the culverts will be determined during engineering, but will be of sufficient size to allow desert tortoises to see light on the other side and to use them for passage from one side of the rail line to the other.

A rail line siding, or spur line, to allow shuttle cars to be re-sequenced on the main rail line, will be included. The siding rail will be located adjacent to Carpenter Canyon Road, and be approximately 960 feet (292.6 meters) in length (see Figure 8).

Operations, control, and maintenance facilities will be constructed in an area perpendicular to the southwestern end of the rail corridor (Figure 9) to provide operational support, vehicle control, and shuttle train maintenance facilities (Township 21S, Range 54E, Section 1). This area will be approximately 295 feet by 140 feet (90 by 43 meters); approximately 0.8 acres (see Figure 9). Included in this area are:

- A shuttle car maintenance shop (see Figure 10).
- A modular building to house facilities controls and crew offices (see Figure 11).
- The ARES substation to connect the catenary distribution line and VEA transmission interconnection (see Figure 12).

Designated staff and visitor parking areas will be covered with gravel.

The control facilities will have the equipment necessary to respond to grid requirements by controlling the speed and number of shuttles in motion. Buildings will be standard modular type buildings and require normal foundation preparation, pouring of slab and footers. The maintenance shop will require erection of a pre-fabricated steel building, using lifts, cranes, and fork trucks.

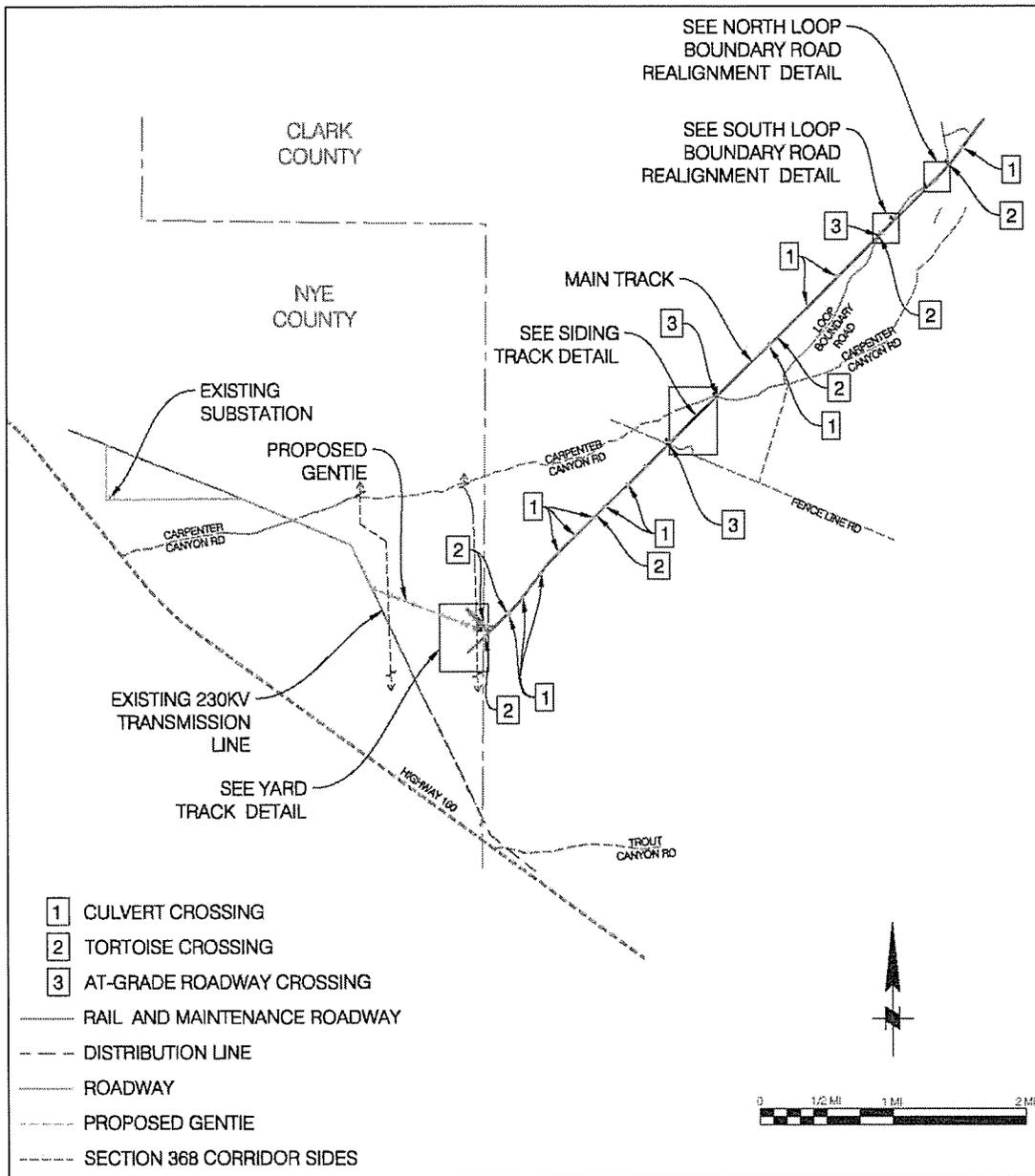


Figure 7. Layout overview of the Proposed Action.

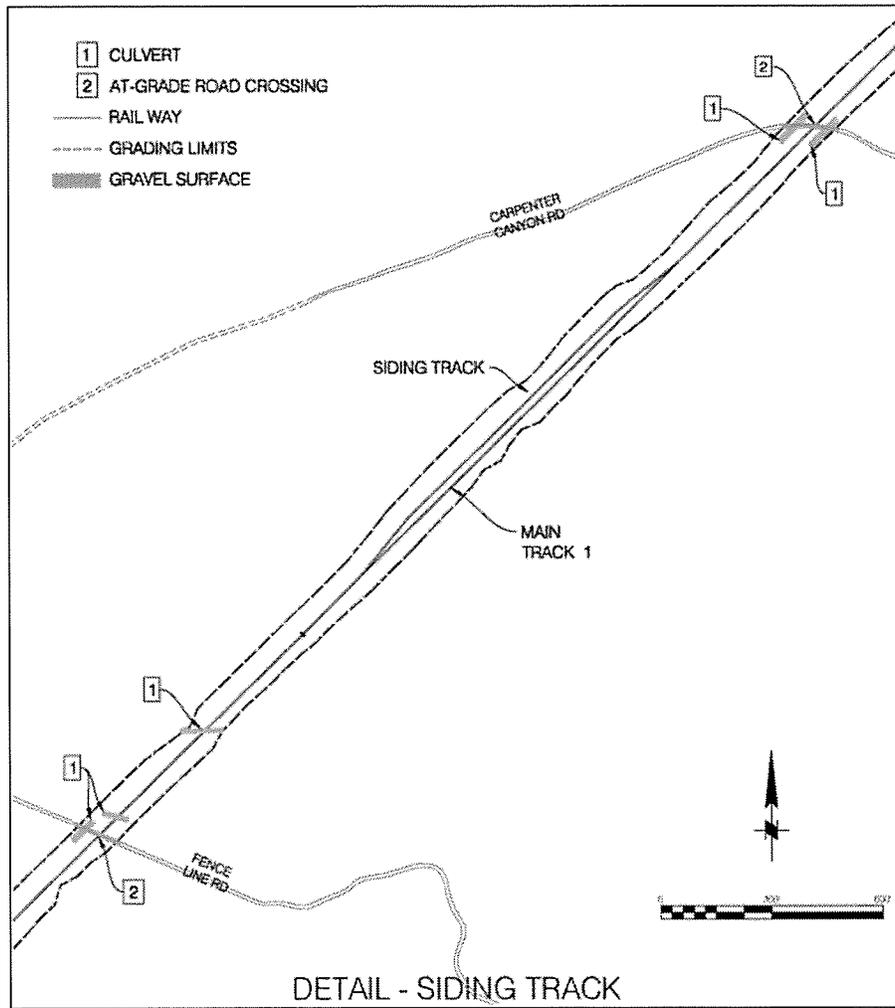


Figure 8. Preliminary design detail for the track siding.

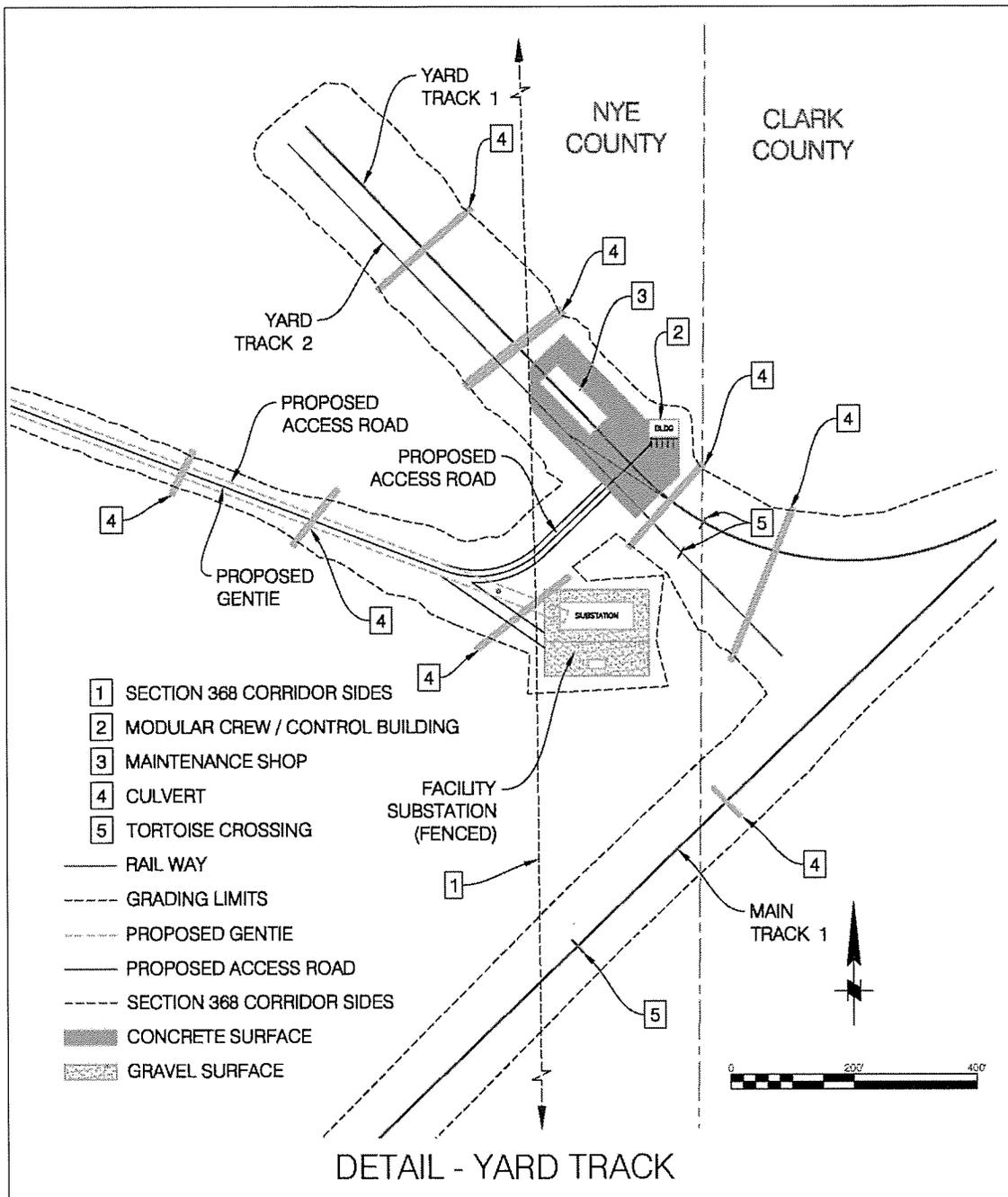


Figure 9. Yard Track Detail for the Proposed Action.

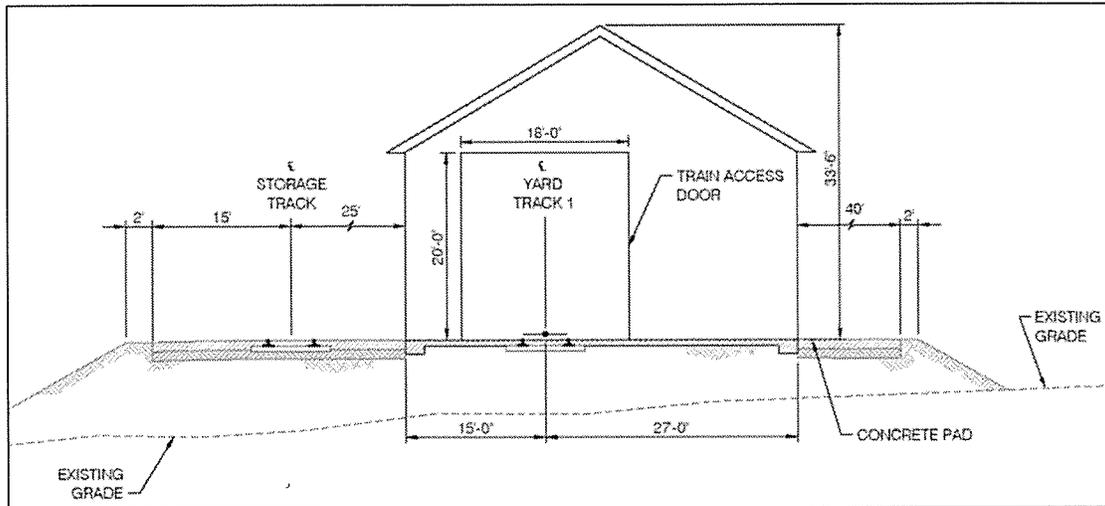


Figure 10. Elevation view of the shuttle car maintenance building.

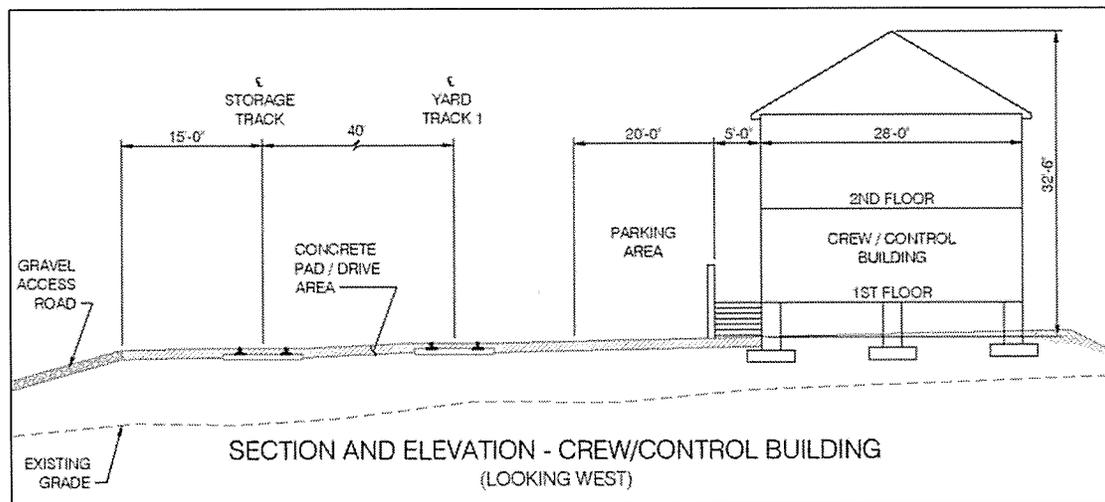


Figure 11. Elevation view of a possible configuration for the control facilities and crew building.

ARES will also provide additional administrative offices for project support staff off-site in Pahrump, Nevada. Office space would be leased from existing commercial office space in Pahrump. No other future components are envisioned either on or off public land.

Communication facilities needed to integrate the ARES REM system into the VEA transmission system and the California Independent System Operator (CAISO) grid will require access to a T1 Energy Communications Network (ECN – for Internet services) Circuit and dedicated telephone lines which will be co-located with an Optical Ground Wire (OPGW) on the transmission lines. Additional details of the communication system are currently being developed.

Construction of the ARES Substation and expansion of Gamebird Switch Station would include site grading, installation of a fence or block wall with access gates around the perimeter of the station, ground mat installation below grade, and application of gravel. The outdoor electrical equipment to be installed includes circuit breakers, switches, transformers and instrument transformers, electrical bus work, steel support structures, foundations, oil containment for the transformer, insulators, wiring and installation of a control building. Within the substation building protective relaying and control equipment, batteries, communication devices and fiber termination equipment would be installed. The construction equipment required may include similar equipment needed for construction of the 230 kV transmission line.

A single circuit 230 kV gen-tie will run directly from the new ARES Substation, to the existing VEA 230kV transmission line. This component will be 100 feet (30.5 meters) wide and 3,870 feet (1,180 meters) long. The interconnection would then connect with the existing VEA 230kV transmission line.

The total workforce is dependent on scheduling, but a reasonable estimate if all construction activities occur simultaneously is 100 to 125 workers present at the jobsite. Temporary parking required for construction workers will be identified within the ROW, with the assistance of the construction contractor.

The clearing and grading plan has not yet been developed as it will depend on the detailed site development plans to be prepared by J. L. Patterson & Associates, or other qualified entities, BLM approved mitigation measures (i.e. cactus and yucca disposition), and will follow the normal, approved BLM, Nye County, Clark County, and Nevada Division of Environmental Protection requirements regarding runoff, potential pollution issues, and disposal sites and methods. Engineering plans, as required by BLM, the Army Corps of Engineers, and others, will be developed by ARES. Grading will be minimized where possible to reduce mitigation requirements.

2.1.3.2.1 Materials

Typical materials include Type 2 road gravel, concrete, asphalt and crushed ballast stone, to be obtained from existing commercial permitted sources.

Sand, gravel and other materials generated from cut and fill activities within the project will be used for road construction to the extent possible. All necessary materials not collected from the site will be purchased from a permitted commercial source. Rail roadbed ballast and road material sourcing is still subject to engineering specification and procurement standards review.

2.1.3.2.2 Project Access Roads

Rail line and transmission line construction requires the movement of vehicles along the ROW. For the proposed project, existing access roads will be utilized whenever possible, although a new access road to connect to the facilities area will be necessary (see Figures 4 and 5). Upon completion of construction,

any access roads with the sole purpose of construction access, if created, will be reclaimed according to current BLM standards.

Site access and maintenance roads will be surfaced with Type 2 Gravel and constructed in accordance with Clark and Nye County requirements for Type 2 Gravel Road construction, dependent upon the type and number of anticipated construction vehicles necessary for completion of the project. Permitted commercial vendors will supply the materials for roadbeds. Mitigation measures to reduce impacts during construction and use will be implemented, as detailed Section 3. The maximum grade of the access road will be 8%. Requirements and final locations of drainage ditches and culverts will be determined during engineering site surveys. Subsequent design drawings will be developed after NEPA evaluation and detailed engineering surveys.

To the extent that on-site native soil and rock from cut activities is not acceptable for use as crushed three inch rail roadbed ballast or Type 2 gravel road building aggregates, this material will be trucked in from existing permitted vendors in Nye, Clark or San Bernardino County, dependent upon transportation routes road classifications.

2.1.3.2.3 Rail Line

The railway infrastructure will adhere to minimum standards per the Recommended Practices in the American Railway Engineering & Maintenance-of-Way Association (AREMA) Manual of Railway Engineering (latest); the maximum engineering standards will be based on those recommended in the publication "Guidelines to Best Practices for Heavy Haul Railway Operations - Infrastructure Construction and Maintenance Issues," published in 2009 by the International Heavy Haul Association (IHHA). ARES also expects to adopt promising new practices presently under test at the American Association of Railroad's Transportation Test Center, Inc., Pueblo, Colorado, related to rail and ballast/sub-grade life, once the practices are approved. These improved practices are not as yet codified in any of the current published standards and/or recommended practices.

The order of construction generally is:

- Prepare roadbed, spread base ballast (ballast spreader machine).
- Distribute and space ties (tie distributing).
- Weld and thread rail onto ties (rail threader, welding machine).
- Clip rail (clip applicator machines).
- Install turnouts (cranes).
- Spread additional ballast (special trailer and dump trucks).
- Raise transmission line and tamp the track (ballast tamping and dressing machines).
- Install overhead catenary lines, connect power wires.

Track construction uses common construction equipment such as boom trucks, low-bed trucks, high-lifts, rubber-tired loaders, rubber-tired hydraulic cranes, and dozers, plus specialized equipment such as tie distributing spreaders, rail threaders, a portable rail welding machine, and tamping and ballast handling/dressing equipment. Construction of the rail system will be coordinated to minimize blocking the Carpenter Canyon road crossing for extended periods.

The existing native topsoil will be moved and/or removed, primarily with scrapers and other heavy equipment such as bulldozers, loaders and excavators, and stored for future use in the restoration of disturbed areas and possibly as train ballast. Any remaining material will be recycled as road topping and

fill. Topsoil will be salvaged for reclamation activities occurring at a later date. Hot-mix asphalt may be required along any areas of the railway roadbed that are subject to groundwater seepage. Groundwater interactions are not expected due to the depth of the water table in this area, and will be confirmed through geotechnical surveys.

2.1.3.2.4 Catenary Power Distribution Line

Parallel to the rail line will be an overhead catenary power distribution line (see Figure 13). The catenary power distribution line will be designed in accordance with the published standards of the Rural Utility Services (RUS) as a Distribution System. The line will consist of wooden poles less than 50 feet (15.2 meters), spaced at approximately 325 foot (99 meters) intervals, carrying 4-wire 24.9kV circuits in a wishbone cross arm configuration supporting four - 954 Aluminum Conductor Composite Core (ACCC) wires as well as an optical ground wire (OPGW) for facilities communication requirements. Span lengths will vary in areas presenting terrain restrictions. The power distribution poles will be wood with brown fiberglass cross arms supporting ACCC wire. The design, construction, operation and maintenance of the interconnection line will meet or exceed the requirements of the National Electrical Safety Code (NESC), U.S. Department of Labor, Occupational Safety and Health Standards and ARES's requirements for safety.

Surveying and routing of the rail line and support structures for the overhead power distribution line will assist in identifying any areas of poor soil stability. If soil conditions are unsuitable for installation of poles at specified locations, ARES's contractor will notify the Project Engineer and the BLM of the conditions present. If possible, the issue will be remedied through relocations of the pole up-line or down-line from the previously specified location.

At each structure site, areas will be needed to stage and facilitate the operation of equipment. A temporary construction disturbance area will be necessary within the proposed ROW. Excavations for poles will be made with power equipment. Where the soil conditions permit, a vehicle-mounted power auger or backhoe will be used. If necessary, the foundation holes may be excavated by drilling. After the hole is augered, poles will be set, backfilled, and tamped using existing soils. Remaining soils and salvaged topsoil will be spread on the ground, and BLM approved reclamation activities will be conducted. Foundation materials will be determined based on final design specifications and geotechnical specifications. Materials will likely consist of gravel or concrete. Alternatively, depending on final design, no foundation may be necessary.

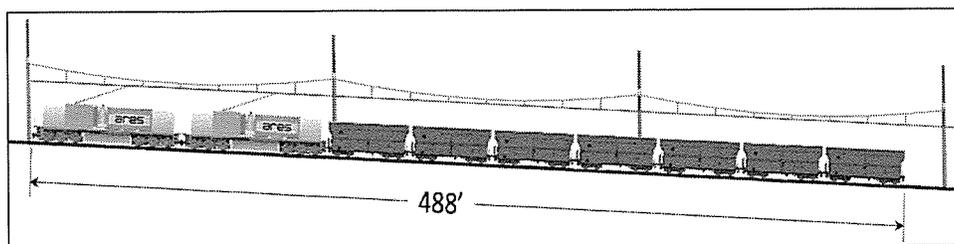


Figure 13. Artistic rendering of the proposed shuttle train and overhead catenary line

2.1.3.2.5 Building and Support Facilities

Structures will be pre-fabricated modular and steel frame buildings on reinforced concrete foundations, where necessary (see Figures 10 and 11). The clearing of natural vegetation will be required. Topsoil will be salvaged for future reclamation activities; unused topsoil will be disposed of as required by BLM. Selective clearing will be performed where necessary for electrical clearance, line reliability, and

construction and maintenance operations. The ROW will not be chemically treated, if possible. Any potential treatments will be reviewed and approved by the BLM prior to application.

A step-down substation (ARES substation) will be located in this component of the ROW (see Figure 12). Additional miscellaneous support service locations, including, outside lighting, emergency power, fire prevention measures, parking facilities, and fencing will be detailed in subsequent updates to the Preliminary Plan of Development (POD) and refined during the detailed site engineering survey stage. Outdoor lighting will be directed downwards to the extent possible to minimize the impact on dark skies while still meeting site safety requirements.

2.1.3.2.6 Transmission Line

Since the existing transmission support structures currently in place are unable to support an additional line, a 7,200 foot (2,194.5 meter) section of existing VEA 230kV transmission infrastructure will require tower upgrades to support the addition of the new line. A new double circuit 230 kV transmission line (see Figure 14) would turn west for 4,400 feet (1,341 meters) to connect the project to the expansion area within the existing Gamebird Switch Station. Upgrades necessary to accommodate terminating the new 230 kV line at the Gamebird Switch Station will be constructed within the existing Gamebird Switch Station ROW (N-059100); no new ROW is needed for the Switch Station upgrade. From the Switch Station a new single circuit line (see Figure 15) will run north for 1,860 feet (567 meters) to connect again with the existing VEA 230kV line. The current, existing 230 kV transmission line currently bypasses Gamebird Switch Station, which is why the new double-circuit and single-circuit lines are required. With the proposed configuration, approximately 5,000 feet (1,524 meters) of the existing 230kV line (currently bypassing the Gamebird Switch Station) will be removed. In addition to the above components, a transmission line maintenance road will be constructed along the ROW where existing roads do not already exist.

Construction of the power distribution and 230 kV transmission interconnection lines involve augering holes, pouring concrete or Type 2 foundations, erecting poles, installing insulators and hardware, stringing wire, installation of optical ground wire (OPGW), testing and commissioning; the construction equipment required may include pickup trucks, bucket trucks, pole trailers, wire trailers, all terrain vehicles (ATVs), concrete trucks, flat bed trucks, excavators, loaders, dozers, cranes, backhoe, wire-stringing trailers, water trucks and a helicopter.

2.1.3.2.7 Cleanup

Construction sites, material storage yards, and access roads will be kept in an orderly condition throughout the construction period. Refuse and trash, including stakes and flags, will be removed from the sites and disposed of in an approved manner. No construction equipment oil or fuel will be drained on the ground. Oils or chemicals will be hauled to an approved site for disposal. No burning of construction trash will occur on BLM managed lands.

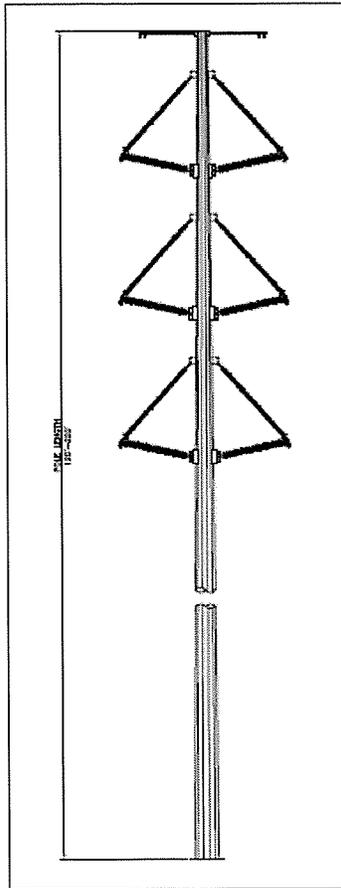


Figure 14. Typical double-circuit transmission line support pole.

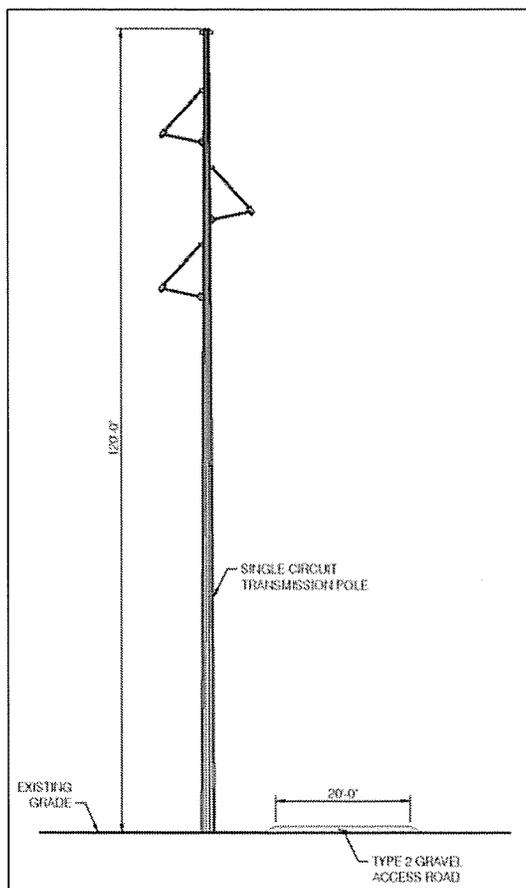


Figure 15. Typical single-circuit transmission pole.

2.1.4 Operations and Maintenance

The facility will be staffed seven days a week, 24 hours a day, for the duration of the project. Weekday shifts would be staffed by five personnel including a control/operator, a security officer, a general manager, maintenance worker and administrative worker. During the night, graveyard, and weekends, shifts may be staffed by up to three personnel, which would at least include a control/operator and a security officer.

Inspection and maintenance schedules will be developed by the Maintenance Manager who, with staff, will develop the schedules necessary for the various elements of the operating system and on the recommendation of the various manufacturers and suppliers of the equipment, and best practices recommended by organizations such as the American Railway Engineering and Maintenance-of-Way Association, International Heavy Haul Association (IHHA), American Association of State Highway and Transportation Officials, Nevada Department of Transportation (NDOT), Electric Utility Distributors Association, Institute of Electrical and Electronics Engineers, etc.

Approximately 12 shuttle-trains will be located on the single track. Each shuttle-train will be comprised of two electric locomotives weighing approximately 220 tons each, and seven cars with a weighted load of salvaged soil or concrete, weighing approximately 150 tons each (see Figure 13). The shuttles are propelled by high-efficiency regenerative traction drive motors mounted on rail-car chassis. The facility

will be compliant with Institute of Electrical and Electronics Engineers (IEEE) 519 generation equipment standards.

Rapid detection and remediation of failures via redundant speed, location, thermal, visual, and vibration sensors, will operate on each shuttle for safety control. Each locomotive will have three redundant breaking systems. Although each shuttle has the potential to reach 25 miles per hour, the average speed for each will be 18.8 miles per hour.

The track and roadway will be inspected daily, possibly employing robotic equipment that can work 24 hours a day, seven days a week, without direct manual control. The inspection criteria will be, at a minimum, based on Title 49 CFR 213 Track Safety Standards as published in the Federal Register (latest), supplemented by recommendations of the IHHA and in-house developed criteria based on best practices from a world-wide network of specialized, heavy-haul railroad operations. There will be an internal process for automatic evaluation of inspection results data, tied into a system to generate work orders that will direct the Maintenance of Way (MOW) Department to repair or replace any defective guideway elements. The MOW Department will operate on a proactive basis to minimize the possibility of guideway components slipping below the State of Good Repair, by grinding rail, correcting surface anomalies, ultrasound testing of rail, etc., based on the inspection data and a planning forecast program that prevents any serious exceptions from developing.

Rail vehicle inspection processes and procedures will be provided by the shuttle vehicle component manufacturers.

2.1.5 Design features and mitigation to reduce/eliminate potential impacts

As part of standard operating procedures, standard mitigation measures will be implemented throughout the construction and operation of the project in order to reduce potential adverse environmental impacts. Most impacts are short term and generally occur during the construction period. Project design and implementation of site-specific or selectively recommended mitigation measures will minimize the effect of the project where the potential for long-term adverse impacts may occur.

Standard rail crossings will be installed where the rail line crosses dirt roads to maintain access to public lands. The Carpenter Canyon road crossing, which is frequently utilized based on the condition of the road, will include flashing lights as well as warning signs. Other minor crossings will include signage, but not lighting. To further improve public safety by minimizing track crossings, Loop Boundary Road, which, as currently aligned, would cross the rail corridor in multiple locations at the northeast end of the corridor, will be rerouted to reduce the necessary crossings from three to one, and still allow public access to the upper elevations of Carpenter Canyon. The rail system will be operated to minimize blocking the Carpenter Canyon road crossing for extended periods. Much of the rail line will be at or near grade level, but there will be areas where the embankment will be built up and a tortoise passage installed between the ties and under the two rails, to allow desert tortoise (and other smaller wildlife) to cross the rail line unimpeded by the rails. Tortoise escape passages will be installed approximately every mile to allow the tortoise to exit from between the rails should one find itself in that position. Final spacing of the tortoise escape passages will be determined based on consultation with BLM resource specialists.

Remote monitoring of the rail corridor will be installed to protect and monitor the system for maintenance issues and from outside interference. ARES will install a remote monitoring system at the facility to monitor the rail line and potentially the tortoise crossings, as well as provide an on-site security officer to monitor the support facilities 24 hours a day, 365 days a year.

BLM approved weed control measures and best management practices will be used to avoid or mitigate any weed infestations, if necessary. Should the use of herbicides be requested by the BLM on potential future occurrences of weeds, only those which are in accordance with the US Fish and Wildlife Service (USFWS) biological opinion, or subsequent to further Section 7 consultation, to avoid possible harm to threatened or endangered species such as the desert tortoise. Only certified weed free straw bales will be used on site, if required. Revegetation areas and growth will be monitored for the presence of noxious weeds throughout the life of the project.

The operator or any contractor company working for the operator will be required by the Occupational Safety and Health Administration (OSHA) regulations to have Material Safety Data Sheets (MSDS) available for all chemicals, compounds, or substances that are used or anticipated to be encountered during the course of construction and operations. All chemicals would be handled in an appropriate manner to prevent leaks or spills in the environment. Because the project operations would comply with all applicable federal and state laws concerning hazardous materials and the operator's spill prevention and clean up procedures, and only limited amounts of hazardous materials will be on site, no impacts from hazardous or solid waste are anticipated. However, project mitigation plans will specifically address hazardous and solid waste handling, spill and leak prevention and handling procedures, and clean up processes and procedures for petroleum, oil, lubricants, and other materials that may be used on site.

Water for drinking, sanitary purposes, and dust mitigation during construction will be obtained off site and transported to the site.

2.1.6 Connected actions

The transmission interconnection line from the existing VEA transmission line to the ARES Substation will be constructed, owned, operated and maintained by VEA; therefore, it is anticipated this will be permitted as a BLM Connected Action as well as the VEA system upgrades and Gamebird Switch Station expansion. VEA would not be conducting the system upgrades and Gamebird Switch Station expansion but for supporting the ARES project.

2.1.7 Land Use Plan Conformance

The Proposed Action conforms to the Las Vegas RMP and Record of Decision approved in October 1998. Sections that specifically apply to this Project include:

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

In conjunction with FLPMA, the BLM's applicable authorities include the following:

- Executive Order 13212, dated May 18, 2001, mandates that agencies act expeditiously and in a manner consistent with applicable laws to increase the production and transmission of energy in a safe and environmentally sound manner.
- Section 211 of the Energy Policy Act of 2005, establishes a goal for the Secretary of the Interior to approve 10,000 MW of non-hydropower renewable energy on public lands by 2015.
- Secretarial Order 3285A1, dated February 22, 2010, establishes the development of renewable energy as a priority for the Department of the Interior.

2.2 The Alternative

The Alternative includes the same project components outlined under the Proposed Action, but locates the operations, maintenance and control facilities and the ARES substation in a configuration that places the Maintenance building at the end of a relatively short rail spur, avoids the need for a secondary parallel rail spur and reduces the total area of impact slightly. This configuration and location also maintains a straight rail alignment within the southern portion of the main rail alignment. The Alternative locates the operations and control facilities and the ARES substation adjacent to the maintenance facility on a concrete pad that would be smaller than the area required for the Proposed Action. However, this alternative places these structures within the Congressionally-designated Section 368 West-wide Energy Corridor (Section 368 of the Energy Policy Act of 2005, 42 U.S.C. § 15926) boundary, which has been designated for linear energy-based infrastructure development.

The slight modification in the location of these facilities under the Alternative decreases the length of the interconnection between the ARES substation and existing VEA 230 kV transmission line by approximately 65 feet, and reduces the length of new road needed to access the facilities by approximately 450 feet. The maintenance building would be sited between 225 and 335 feet within the eastern boundary of the 368 Energy Corridor; the control building would be between 110 and 165 feet within the eastern boundary of the 368 Energy Corridor.

2.2.1 Applicant and Agencies involved

The agencies involved do not differ between the Proposed Action and Alternative.

2.2.2 Action to be taken

The Alternative will also provide up to 50 megawatts (MW) of gravity-based electrical energy regulation, but on 70 acres of BLM-managed land rather than 72 acres, in order to balance variable energy demands and potential intermittent renewable energy contributions through energy storage. The system components are the same for both the Proposed Action and Alternative.

The same upgrades to the existing VEA transmission line described in the Proposed Action will be required under the Alternative to connect the ARES REM facility to the regional electric grid.

2.2.2.1 Location

The locations of the Alternative are the same as those described for the Proposed Action with the exceptions discussed below.

The legal land descriptions for each component of the project are located in Tables 2-5, 2-6, and 2-7.

The upslope (northeast) end of the Proposed Action will begin in Township 20 South, Range 55 East, Section 22, as with the Proposed Action. For the Alternative, a single spur line off the railroad corridor will extend to the operations and maintenance area, whereas the Proposed Action includes two spurs for vehicle storage. The support facilities, which will include the new substation (ARES substation), a shuttle train maintenance building, and an operations control center, will be located within Nye County. However, compared to the Proposed Action, these facilities will be within the eastern border of the Section 368 Energy Corridor.

As with the Proposed Action, the new 230 kilovolts (kV) transmission line (interconnection) to be operated by VEA, will run northwest across the Section 368 corridor to connect with the existing VEA 230kV transmission line ROW (N-057100). The remaining aspects of the transmission system would be the same as described for the Proposed Action.

Table 2-5: Proposed Rail Line Corridor Legal Land Description

Township and Range	Section	Aliquot Part
T. 20 South, R. 55 East	22	Begins in SW ¼ of the NE ¼, running southwest through the NW ¼ of the SE ¼, NE ¼ of the SW ¼, and SE ¼ of the SW ¼, to the SW ¼ of the SW ¼; then
T. 20 South, R. 55 East	27	NW ¼ of the NW ¼ of the NW ¼; then
T. 20 South, R. 55 East	28	NE ¼ of the NE ¼, running southwest through the SE ¼ of the NE ¼, SW ¼ of the NE ¼, NW ¼ of the NW ¼ of the SE ¼, NE ¼ of the SW ¼, and NW ¼ of the SE ¼ of the SW ¼, to the SW ¼ of the SW ¼, then
T. 20 South, R. 55 East	33	NW ¼ of the NW ¼ of the NW ¼; then
T. 20 South, R. 55 East	32	NE ¼ of the NE ¼, running southwest through the SW ¼ of the NE ¼, and NE ¼ of the SW ¼, to the SW ¼ of the SW ¼, then
T. 20 South, R. 55 East	31	SE ¼ of the SE ¼ of the SE ¼, then
T. 21 South, R. 55 East	06	NE ¼ of the NE ¼, running southwest through the SW ¼ of the NE ¼, and NE ¼ of the SW ¼, to the SW ¼ of the SW ¼, then
T. 21 South, R. 54 East	12	NE ¼ of the NE ¼ of the NE ¼, ending at the SW ¼ of the NE ¼ of the NE ¼.

Table 2-6: Proposed Operation, Control, and Maintenance Facilities Legal Land Description

Township and Range	Section	Aliquot Part
T. 21 South, R. 54 East	01	S ½ of the SE ¼, and E ½, of the SW ¼.

Table 2-7: Transmission Interconnection Line Legal Land Description

Township and Range	Section	Aliquot Part
Existing Transmission to be Upgraded		
T. 21 South, R. 54 East	01	NW ¼ of the SW ¼, running to the SW ¼ of the NW ¼
T. 21 South, R. 54 East	02	NE ¼ of the S ½ of the NE ¼, through the N ½ of the NE ¼, running to the N ½ of the NW ¼
New Transmission Connection to Gamebird Switch Station		
T. 21 South, R. 54 East	02	N Section border of the NW ¼ of the NW ¼
T. 21 South, R. 54 East	03	N Section border of the NE ¼, and N Section border of the NE ¼ of the NW ¼
T. 20 South, R. 54 East	34	Running north/south in the E ½ of the W ½ of the SW ¼
Existing Transmission to be Removed		
T. 20 South, R. 54 East	34	SE ¼ running to the NE ¼ of the SW ¼
T. 20 South, R. 54 East	35	SW ¼ of the SW ¼

New Interconnection Connecting ARES Substation to Existing Line		
T. 21 South, R. 54 East	01	S ½ of the SE ¼ of the SE ¼, running northwest through the NW ¼ of the SE ¼ of the SW ¼ of the SE ¼, N ½ of the SW ¼ of the SE ¼, NE ¼ of the SE ¼ of the SW ¼, and SW ¼ of the SW ¼ of the NE ¼ of the SW ¼, to connect with the existing VEA line in the SE ¼ of the NW ¼ of the SW ¼

2.2.2.2 Time frame for construction and operation

The time frame for construction for the Alternative would be the same as for the Proposed Action. Ideally, following engineering and geotechnical surveys, ARES would begin construction of the project in the first quarter of 2017, with construction being completed mid 2017; operations would begin third quarter 2017. The system is designed to provide energy storage capabilities for 30 years.

2.2.2.3 Construction

The construction process for the Alternative would be the same as for the Proposed Action, though the detailed location and amounts of disturbance vary. The Proposed Project includes multiple temporary and permanent (long-term) components constructed and operated by ARES. Other components will be constructed and operated by VEA to directly support the project. Brief summaries of those components are provided below.

As with the Proposed Action, the Alternative includes the same four long-term disturbance areas and one short-term disturbance area, though the sizes of these areas differ from the Proposed Action (see Table 2-5, 2-6, and 2-7):

- A rail line corridor - 5.5 miles (8.9 kilometers) long averaging 75 feet (22.9 meters) wide (siding area will be wider, grading required to maintain a constant elevation change will vary) (see Figure 16).
- An operations, control and maintenance facilities area on a concrete pad containing two to three buildings (offices and control center may be combined) and a small staff parking lot, for a total size of 0.3 acre (see Figure 17).
- A transmission and access road corridor, which includes the new transmission interconnection as well as upgrades to the existing transmission - approximately 3,700 feet (1,128 meters) long by 100 feet (30.5 meters) (see Figure 18).
 - Removal of approximately 5,250 feet (1,600 meters) of existing transmission which will become obsolete with the upgrades required for the existing transmission to support the Proposed Action (see Figure 18).
- Construction related disturbance areas (cut and fill areas, equipment storage yards) will create a variable width buffer along the rail corridor, and add 50 feet (15.2 meters) to all transmission corridors, for a short-term disturbance of 98 acres.

In total for the Alternative, 168 acres would be disturbed, 70 acres of which will be long-term infrastructure (see Table 2-8).

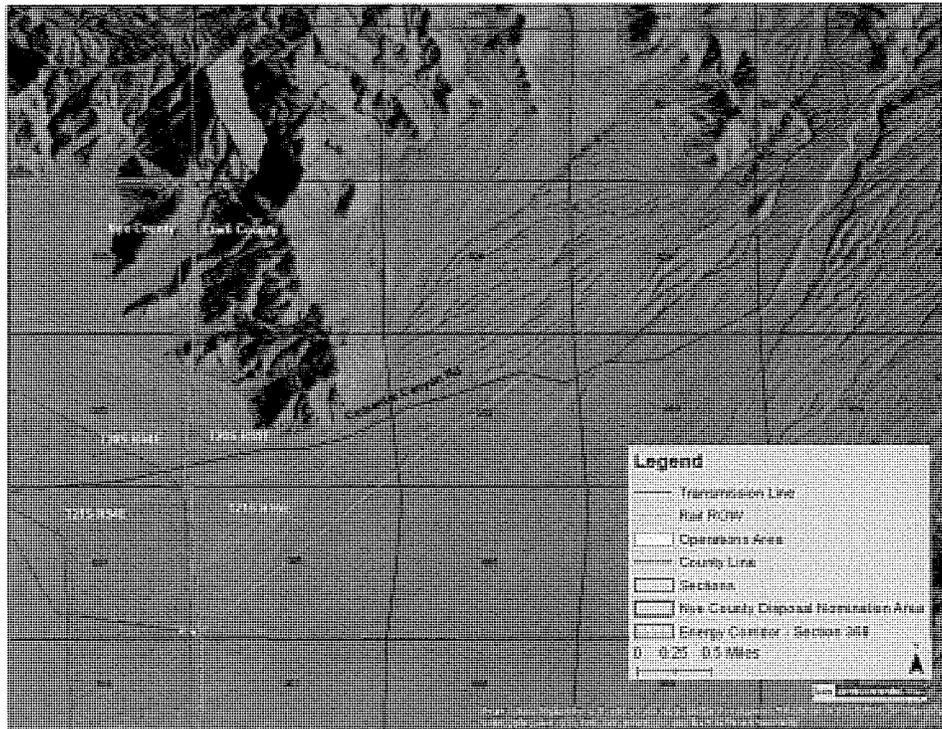


Figure 16. Rail Corridor for the Alternative.

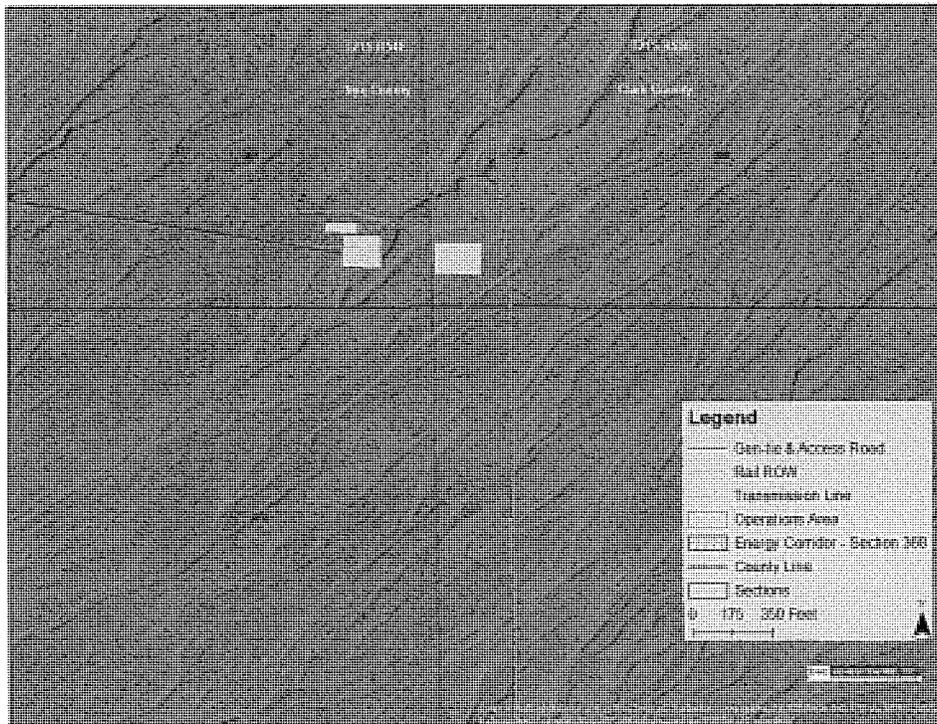


Figure 17. Operations and Maintenance area and transmission interconnection for the Alternative.

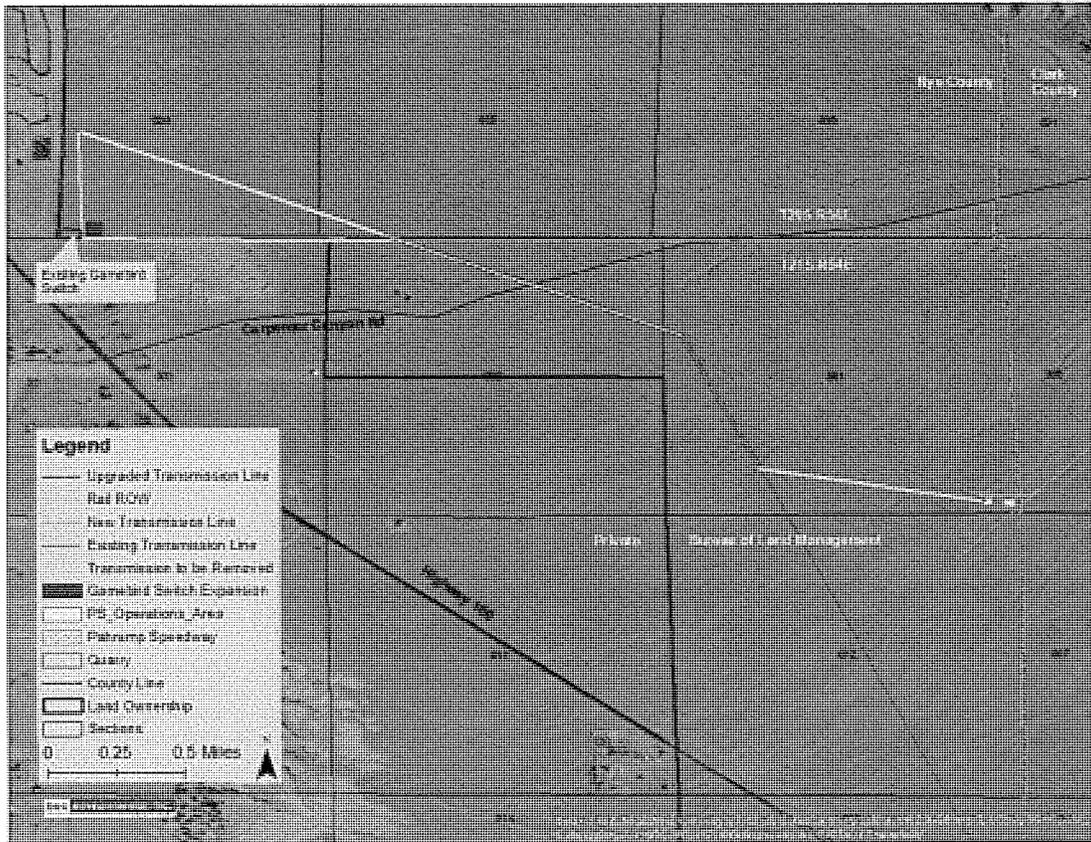


Figure 18. Gamebird Switch Station and Transmission Components for the Alternative.

Table 2-8. Summary of Permanent and Temporary Disturbance for the Alternative

Disturbance Type	Acres of Disturbance	Notes
Long-Term Disturbance		
Rail Corridor	27.2	The main rail track will be 5.5 miles (29,036 feet) long, the mid-elevation spur track will be 0.19 miles (995 feet) long, the facility area curve and storage track will be 0.23 miles (1,218 feet) long, and the maintenance building track will be 0.1 miles (284 feet) long. The facility area curve and storage track and maintenance building track may be shortened based on conversations with the BLM regarding the West-wide Energy Corridor.
Operations Control and Maintenance Facilities	0.3	Facilities will be placed on an area approximately 70 feet by 185 feet (0.3 acres) and will include an operations building (0.06 acres), a maintenance building (0.11 acres), and a gravel employee and visitor parking lot (0.07 acres). (Rail lines are considered above, in the rail corridor summary.)
ARES Substation	0.5	A transmission interconnection substation and control building (ARES substation)
Gamebird Switch Station Expansion	2.4	Located within existing VEA Gamebird Switch Station ROW N-59100.
Transmission Lines and Access Roads	39.4	Existing lines to be upgraded include 16.5 acres. New transmission consists of an 8.5 acre interconnection and 14.4 acres for the two new Gamebird Switch Station connections. Access roads will be co-located with transmission; acreage of disturbance for roads is included in the Transmission Lines acreage.
Total Long-Term	69.8 (70)	
Short-Term Disturbance		
Rail Corridor	51.5	Disturbance will occur on approximately 40 feet either side of the rail corridor infrastructure, for the length of the corridor.
Operations Control and Maintenance Facilities	6.0	Disturbance associated with the construction and installation of the operations building, maintenance building, ARES substation, parking lot, and laydown yard, materials storage, and vehicle parking.
Transmission Lines and Access Roads	40.4	Disturbance associated with the construction of the ARES substation interconnection (4.44 acres), upgrades to existing VEA transmission (8.26 acres), new VEA transmission lines (5.05 acres), removal of existing transmission (17.22 acres), Gamebird Switch Station expansion (0.60 acres), and five pulling stations (5 acres).
Total Short-Term	97.9 (98)	
Total Disturbance	167.7 (168)	

2.2.2.3.1 Pre Construction Activities

Land Surveys

Multiple exploratory and environmental analysis surveys were conducted by ARES and their contractors during 2014. These surveys included botanical surveys, desert tortoise presence/absence surveys, preliminary no impact initial alignment measurements, and a potential construction contractor on site meeting.

Aerial Surveys

In July 2014, an aerial survey of the proposed alignment was conducted in order to develop a more refined alignment and aid in the development of the initial engineering drawings.

Engineering Surveys

The BLM National Environmental Policy Act (NEPA) process will determine the preferred alignment for the project. As described for the Proposed Action, preliminary surveys and other investigations will be completed after a preferred alignment is selected by the BLM during the NEPA process, and on-the-ground investigations will be completed to precisely locate the centerline within the ROW. The details of these surveys and design efforts for the Alternative are the same as for the Proposed Action.

Cultural Resource Surveys

A Class III cultural survey was conducted by HDR, Inc. during the period November 4 – 8, 2014. The Alternative is within the areas surveyed and the description summarized for the Proposed Action is applicable to the Alternative. The archaeological survey did not locate any cultural materials.

Biological Surveys

As with the Proposed Action, the Mojave desert tortoise will require special consideration in consultation with BLM, NDOW, and USFWS for the Alternative. Specific mitigation measures for biological resources will be developed as part of the environmental evaluation. If necessary, additional surveys or Section 7 consultation will be supported through the BLM during the NEPA process. The area encompassing the Alternative was covered by desert tortoise surveys conducted in May, September, and October of 2014. One live tortoise was observed, and multiple burrows were identified.

As with the Proposed Action, special status plants (e.g. cacti, yucca, etc.) will be avoided during construction to the extent possible. The Alternative is within the area where native plant surveys were conducted during the period April 27 – May 25, 2014.

Interconnection Geotechnical Investigation

Geotechnical investigation will be completed for the 230 kV transmission lines, the ARES Substation and the expansion of Gamebird Switch Station for the Alternative as was described for the Proposed Action.

2.2.2.3.2 Construction Activities

Construction activities associated with the Alternative will be consistent the construction activities described for the Proposed Action. Detailed site plans for the Alternative have not yet been completed; therefore, figures are currently estimates based on initial preliminary site plans and project design. Detailed site plans will be developed after NEPA reviews have been completed and the Alternative is selected.

As with the Proposed Action, the Alternative will be installed where the proposed rail line would cross existing drainages in order to not impede stormwater flows from the Spring Mountains. The exact

dimensions of the culverts will be determined during engineering (see Figure 19), but will be of sufficient size to allow desert tortoises to see light from the other side and to pass back and forth through the culverts.

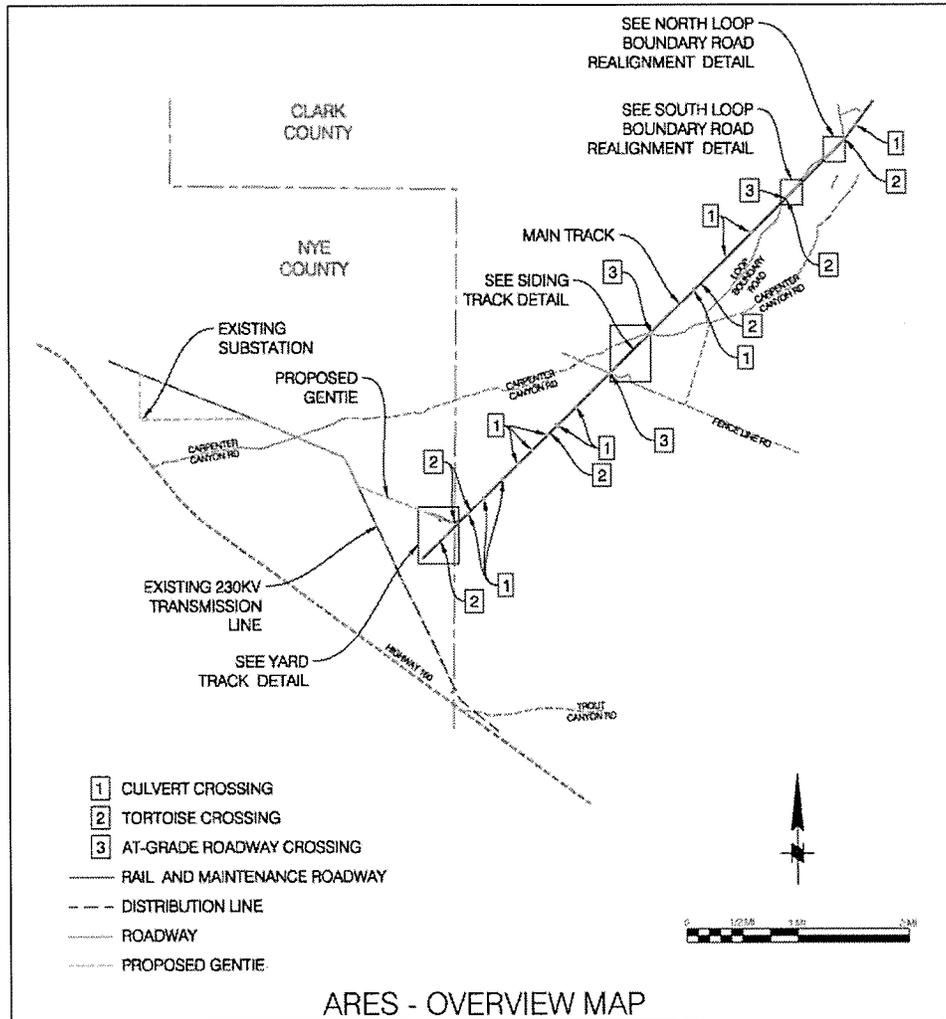


Figure 19. General site layout for the Alternative.

As described with the Proposed Action, a rail line siding, or spur line, to allow shuttle cars to be re-sequenced on the main rail line, will be included in the Alternative (see Figure 7).

The primary difference between the Proposed Action and the Alternative is the location and configuration of the operations, control, and maintenance facilities, as well as the ARES substation. These portions of the Alternative are within the boundary of the Section 168 west-wide energy corridor (Figure 17). The operations, control and maintenance facilities would be constructed on a concrete pad in an area perpendicular to the southwestern end of the rail corridor along a spur rail line that gradually curves from the primary rail alignment, providing a relatively level area to move and arrange the locomotives and the cars. The facilities would provide operational support, vehicle control, and shuttle train maintenance facilities (Township 21S, Range 54E, Section 1). This area will be approximately 70 feet by 185 feet (85 by 39 meters); approximately 0.3 acres (see Figure 17). Included in this area are:

- A shuttle car maintenance shop (see Figure 20).
- A modular building to house facilities controls and crew offices (see Figure 21).

Designated staff and visitor parking areas will be on the concrete pad to be constructed for the operations and maintenance facilities area.

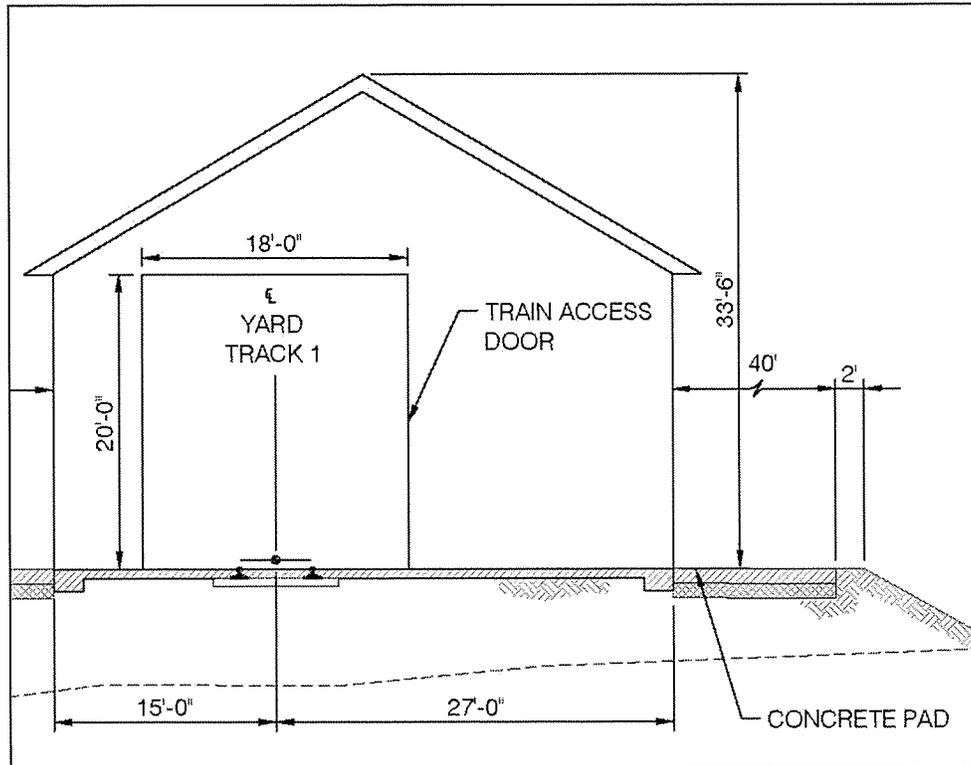


Figure 20. Elevation view of the shuttle car maintenance building.

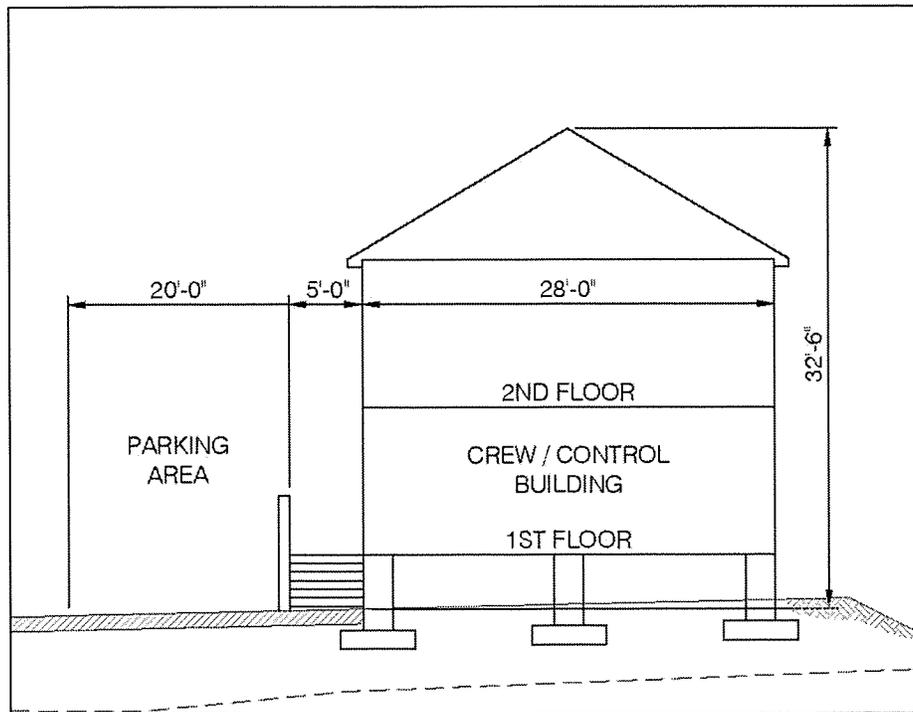


Figure 21. Elevation view of a possible configuration for the control facilities and crew building.

As with the Proposed Action, ARES will also provide additional administrative offices for project support staff off-site in Pahrump, Nevada, in office space that would be leased from existing commercial facilities. .

Communication facilities needed for the Alternative would be the same as described for the Proposed Action.

The location of the ARES Substation would be near the support facilities, adjacent to the rail line in close proximity to the overhead catenary system. This component of the project is within the Section 368 energy corridor (see Figure 17).

Construction of the ARES Substation and expansion of Gamebird Switch Station, as well as construction, upgrade or removal of the transmission lines for the Alternative would be the same as described for the Proposed Action and are not repeated here. The single circuit 230 kV gen-tie line that would run directly from the new ARES Substation, to the existing VEA 230kV transmission line for the Alternative will be similar to the line for the Proposed Action, with the exception that it is only 3,700 feet (1,180 meters) long, which is a result of the ARES substation being closer to the existing VEA 230kV transmission line, inside the Section 168 Corridor.

The total workforce is dependent on scheduling, but will be the same as the Proposed Action.

As with the Proposed Action, the clearing and grading plan has not yet been developed for the Alternative, as it will depend on the detailed site development plans to be prepared once the NEPA process has been completed.

2.2.2.3.3 Materials

Materials to be used for the Alternative would be consistent with those described for the Proposed Action.

2.2.2.3.4 Project Access Roads

Construction of the access roads for the Alternative would be the same as for the Proposed Action.

2.2.2.3.5 Rail Line

Detailed design and construction of the rail line for the Alternative will be consistent with the description provided for the Proposed Action. The slight adjustments to the alignment of the rail line at the southern end of the alignment will not alter construction processes or drainage components of the project. The same design and construction standards and guidelines will be used on the Alternative as with the Proposed Action.

2.2.2.3.6 Catenary Power Distribution Line

The overhead catenary power distribution line for the Alternative will be consistent with the line described for the Proposed Action.

2.2.2.3.7 Building and Support Facilities

The construction and design of the buildings and support facilities for the Alternative will be the same as those described for the Proposed Action.

Construction and design of the step-down substation (ARES substation) for the Alternative will be the same as for the Proposed Action.

2.2.2.3.8 Transmission Line

The construction, upgrade and removal of components of the transmission system for the Alternative will be the same as for the Proposed Action. The only difference with the Alternative is that the length of the gen-tie line from the ARES Substation to the existing VEA transmission line is approximately 130 feet shorter than for the Proposed Action due to the closer proximity of the ARES substation to the existing line.

2.2.2.3.9 Cleanup

As with the Proposed Action, construction sites, material storage yards, and access roads will be kept in an orderly condition throughout the construction period. Refuse and trash, including stakes and flags, will be removed from the sites and disposed of in an approved manner. No construction equipment oil or fuel will be drained on the ground. Oils or chemicals will be hauled to an approved site for disposal. No burning of construction trash will occur on BLM managed lands.

2.2.2.4 Operations and Maintenance

The Operations and Maintenance of the Alternative are consistent with those described for the Proposed Action, therefore they are not repeated here.

2.2.2.5 Design features and mitigation to reduce/eliminate potential impacts

All design features and mitigation measures identified and incorporated into the Proposed Action are included in the Alternative and are not repeated here.

2.2.3 Connected actions

As with the Proposed Action, the transmission interconnection line from the existing VEA transmission line to the ARES Substation will be constructed, owned, operated and maintained by VEA as part of the Alternative; therefore, it is anticipated this will be permitted as a BLM Connected Action as well as the VEA system upgrades and Gamebird Switch Station expansion. VEA would not be conducting the system upgrades and Gamebird Switch Station expansion but for supporting the ARES project.

2.2.4 Conformance

2.2.4.1 Land Use Plan Conformance

The Proposed Action conforms to the Las Vegas RMP and Record of Decision approved in October 1998. Sections that specifically apply to this Project include:

- RW-1-h, Management Direction: “All public land within the planning area, except as stated in RW-1-c through RW-1-g area available at the discretion of the agency for rights-of-way under the Federal Land Management Policy Act.”

In conjunction with FLPMA, the BLM’s applicable authorities include the following:

- Executive Order 13212, dated May 18, 2001, which mandates that agencies act expeditiously and in a manner consistent with applicable laws to increase the production and transmission of energy in a safe and environmentally sound manner.
- Section 211 of the Energy Policy Act of 2005, which establishes a goal for the Secretary of the Interior to approve 10,000 MW of non-hydropower renewable energy on public lands by 2015.
- Secretarial Order 3285A1, dated February 22, 2010, which establishes the development of renewable energy as a priority for the Department of the Interior.

Section 368 of the Clean Energy Act established west-wide energy corridors, within which linear energy transmission projects would be developed. That Act provides guidance to federal land management agencies that other activities that may interfere with or preclude such development would require a review and waiver from the U.S. Department of Energy prior to ROW grants. Given that several components of the Alternative would be constructed within the west-wide corridor, such waivers would be required for the Alternative.

2.3 No Action Alternative

Under the No Action alternative, the BLM would not grant the ROW request, transmission grid stability and reliability would not be enhanced, renewable energy variability balancing would not be available, and the Proposed Action ROW would remain unchanged.

2.4 Alternative Considered but Eliminated from Detailed Analysis

The following alternatives were eliminated from detailed analysis because they were not reasonable or feasible from technical and economical standpoints:

2.4.1 Wheeler Wash

ARES considered an alignment for the Proposed Project in the area of Wheeler Wash, northwest of the Proposed Action. During analysis, this site was determined to be infeasible for the following engineering and construction related issues:

Flood Control – Due to the topography of the area, extensive flood control measures would have been required to control and divert runoff from the Spring Mountains. Additional infrastructure and coordination with the Town of Pahrump and Nye County would have been required as well, due to the potentially modified runoff patterns which would drain into the Town of Pahrump. The negative economic impact on the Town and County could have been significant. This area is also adjacent to FEMA designated Zone AO: Areas subject to inundation by 1% annual chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between one and three feet. Average flood depths derived from detailed hydraulic analyses are shown in this zone. Some Zone AOs have been designated in areas with high flood velocities such as alluvial fans and washes.

Slope – The variability in the slope would have required extensive cut and fill actions to achieve the steady slope required for efficient operation of the rail energy management system. This variability in slope would have also required a longer rail corridor than the 5.5 miles proposed for the Pahrump South (Action) location.

Species of Concern – Approximately six miles of this project would lie within high value desert tortoise habitat. The site is also adjacent to the Nye County proposed Mojave Desert Tortoise Habitat Conservation Area (requested by the County as part of the BLM Resource Management Plan revision). If this area becomes established, there may be a higher density of desert tortoise in the area than in surrounding areas.

Transmission – The extent of transmission infrastructure upgrades required for the construction of the Wheeler Wash alternative would have been much greater and economically infeasible for both ARES and VEA.

2.5 Relationship to Statutes, Regulations, Policy, Plans or Other EAs

2.5.1 BLM Resource Management Plan

The Proposed Action is located on federal lands managed by the BLM Southern Nevada District Office under the October 1998 Las Vegas RMP (Bureau of Land Management, 1998).

The principles of multiple-use management for the BLM are established through FLPMA. The current BLM Las Vegas RMP is consistent with FLPMA and guides the decisions for the BLM. The Proposed Action is in conformance with the following management objectives and directions of the 1998 BLM Las Vegas RMP/EIS as amended:

Objective AR-1. “Ensure that actions occurring on BLM-administered lands do not violate local, state, tribal and Federal air quality laws, regulations, and standards.”

Objective LD-2. “All public lands within the planning area, unless otherwise classified, segregated or withdrawn, and with the exception of Areas of Critical Environmental Concern and Wilderness Study Areas, are available at the discretion of the agency, for land use leases and permits under Section 302 of Federal Land Policy and Management Act.”

Objective LG-1. “Provide for continued grazing of domestic livestock on public lands, consistent with law, regulation established standards and guidelines and policy on areas open to livestock grazing.”

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

Management Direction 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 rights-of-way under the authority of the FLPMA.”

Objective WHB-1. “In Herd Management Areas not constrained by desert tortoise restrictions (see Maps 2-1 and 2-7), manage for healthy, genetically viable herds of wild horses and/or burros in a natural, thriving ecological balance with other rangeland uses.”

Objective WHB-2. “Maintain the wild, free-roaming character of the wild horses and burros on the public lands.

2.5.2 Statutes, Regulations, and Policies

This EA has been prepared in accordance with the following statutes and implementing regulations, policies and procedures:

- The National Environmental Policy Act of 1969, as amended (PL 91-190, 42 USC 4321 (*et seq.*)
 - 40 Code of Federal Regulations (CFR) 1500 (*et seq.*). Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act
 - Considering Cumulative Effects under the National Environmental Policy Act [CEQ 1997]
 - U.S. Department of the Interior (USDOI) requirements (Departmental Manual 516, Environmental Quality [USDOI 2007])
 - BLM NEPA Handbook (H-1790 1) (BLM 2008)
- The Federal Land Policy and Management Act of 1976 (PL 94 579, 43 USC 1761 (*et seq.*)
 - 43 CFR 2800, Rights-of-Way, Principles and Procedures; Rights-of-Ways under the Federal Land Policy and Management Act and the Mineral Leasing Act; Final Rule, April 22, 2005
- The 2005 Energy Policy Act; The National Energy Policy, Executive Order 13212 - Actions To Expedite Energy-Related Projects
- The Endangered Species Act of 1973, as amended (ESA) (16 United States Code [USC] Section 1531)
 - The Migratory Bird Treaty Act of 1918, as amended (MBTA; 16 USC 703 *et seq.*):
 - Bald and golden Eagle Protection Act (16 USC 668 *et seq.*)
- National Historic Preservation Act (36 CFR 800)
 - Nevada State Historic Preservation Office, required consultation under 36 CFR 800
- Federal Water Pollution Control Act (Clean Water Act) Section 404, as amended (33 U.S.C. §1251 *et seq.* (1972)
- Utility Environmental Protection Act (UEPA Permit) (NRS 704.820 to 704.900)
- Avian Protection Plan Guidelines, 2005

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section describes the current status of resources associated with the various supplemental authorities that may be affected by the Proposed Action, Alternative or No Action Alternative. The table is followed

by a description of each resource, the current conditions, the environmental effects, mitigation measures and residual effects.

3.1 Supplemental Authorities

NEPA is only one of many authorities that contain procedural requirements pertaining to treatment of elements of the environment when the BLM is considering a federal action. To comply with NEPA and these supplemental authorities, the BLM mandates all EAs address specific elements of the environment subject to requirements specified in statute, regulation, or by Executive Order. Table 3-1 identifies the supplemental authorities that must be addressed in all EAs and whether or not the Proposed Action potentially affects those authorities. Only those supplemental elements that are “Present/May be Affected” will be analyzed.

Other resources that have been considered in this EA are listed in Table 3-2. Elements that may be affected are further described in the EA. Rationale for those elements that would not be affected by the Proposed Action are described in the table.

Table 3-1. Supplemental Authorities Considered in the Analysis

Supplemental Authority ¹	Not Present ²	Present/Not Affected	Present/May be Affected ³	Rationale
Air Quality			•	Carried forward for analysis. See Affected Environment, Environmental Consequences, and Cumulative Impacts in Section 3.3 Air Quality.
Area of Critical Environmental Concern (ACEC)	•			There are no ACECs within or near the Proposed Action area. Stump Springs ACEC, the closest to either proposed location, is more than ten miles south.
Cultural/ Historical	•			A Class I records review was conducted through the Southern Nevada Archaeological Archive of the Desert Research Institute. Six previously recorded archaeological sites have been documented within one mile of the project area; however, none of the sites are located within the proposed alignment area of potential effect. Archaeological surveys of proposed routes, conducted on July 8 and November 4 and 8, 2014, failed to disclose any cultural materials.

¹ See BLM National Environmental Policy Act Handbook H-1790-1 (January 2008) Appendix 1 Supplemental Authorities to be Considered.

² Supplemental Authorities determined to be Not Present or Present/Not Affected need not be carried forward for analysis or discussed further in the document.

³ Supplemental Authorities determined to be present/May be Affected must be carried forward for analysis in the document.

Supplemental Authority ¹	Not Present ²	Present/Not Affected	Present/May be Affected ³	Rationale
Environmental Justice	•			The Proposed Action is located within Clark County Census Tract 75 and Nye County Census Tract 9604.01 (US Census Bureau, 2014). No minority or low-income populations would be disproportionately affected. The nearest qualified Housing and Urban Development (HUD) low income/minority census tract in Clark County is approximately 35 miles east, in Las Vegas, Nevada (U.S. Department of Housing and Urban Development, 2015). The nearest low income/minority census tract in Nye County is more than 17 miles northwest, in the Amargosa Valley, Nevada, area, on the California state border (U.S. Department of Housing and Urban Development, 2015).
Farmlands Prime or Unique	•			No prime or unique farmlands are located within the Proposed Action areas.
Noxious Weeds/ Invasive Non-native Species			•	Carried forward for analysis. See Affected Environment, Environmental Consequences, and Cumulative Impacts in Section 3.4 Noxious Weeds.
Native American Religious Concerns	•			The Proposed Action would not compromise the integrity of any traditional, spiritual, cultural or ceremonial use area, nor would it limit or prevent access to any traditional or ceremonial sites that may be currently in use based on no comment or negative responses received from the tribes to which letters of interest were sent by BLM.
Floodplains			•	Carried forward for analysis. See Affected Environment, Environmental Consequences, and Cumulative Impacts in Section 3.5 Floodplains.
Riparian/ Wetlands	•			The US Fish and Wildlife Service (USFWS) National Wetlands Inventory does not identify any wetlands or riparian areas along, or in the vicinity of, Proposed Action. No riparian dependant vegetation was observed during botanical surveys.

Supplemental Authority ¹	Not Present ²	Present/Not Affected	Present/May be Affected ³	Rationale
Threatened and Endangered Species			•	Carried forward for analysis. See Affected Environment, Environmental Consequences, and Cumulative Impacts in Section 3.6 Threatened & Endangered Species.
Migratory Birds - including BLM Sensitive Species			•	Carried forward for analysis. See Affected Environment, Environmental Consequences, and Cumulative Impacts in Section 3.7 Migratory Birds.
Waste – Hazardous or Solid		•		Hazardous material waste, solid, nonhazardous substances and wastes must be handled and disposed of in accordance with the applicable federal state, and local regulations and BLM Policy. Virtually all impacts can be mitigated onsite. The design features, which require development of an emergency response plan, will reduce the chances of a hazardous material release and provide a protocol for mitigating the site, should one occur.
Water Resources/ Quality		•		No surface water bodies are located in the Project Area. Groundwater (Central Region, Administrative Groundwater Basin 162) will not be used, encountered, or impacted. Water would be brought in from off-site for crew use only (drinking water and sanitary uses). The daily use of water for dust control during construction would not adversely affect water quality or quantity in the Pahrump Valley due to the limited amount (to be determined during project engineering) of water to be used and the high evaporation rate for the area.
Wild & Scenic Rivers	•			No wild and scenic rivers are located within the area of the Proposed Action.

Supplemental Authority ¹	Not Present ²	Present/Not Affected	Present/May be Affected ³	Rationale
Wilderness/ Wilderness Study Areas/ Lands with Wilderness Characteristics		•		The Action Area does not possess wilderness characteristics or lie within the boundaries of a Wilderness Area or Wilderness Study Area. However, the Proposed Action may be visible from high peaks and west facing ridgelines within the Mount Charleston Wilderness Area. The project would not notably stand out with the Town of Pahrump in the background and would look similar to existing roads (Carpenter Canyon) on the alluvial fans, and therefore would not affect or modify existing Wilderness Characteristics.
Forests and Rangelands (HFRA only)	•			This project and surrounding areas do not meet the requirements to qualify as a Healthy Forests Restoration Act project.
Human Health and Safety			•	Carried forward for analysis. See Affected Environment, Environmental Consequences, and Cumulative Impacts in Section 3.8 Human Health & Safety

Table 3-2. Other Resources Considered in the Analysis

Other Resources	Not Present ⁴	Present/Not Affected	Present/ May be Affected	Rationale
Fuels/Fire Management		•		Compliance with fire restrictions current at the time of project implementation will mitigate any risks introduced by the Proposed Project.

⁴ Other Resources determined to be Not Present or Present/Not Affected need not be carried forward for analysis or discussed further in the document based on the rationale provided.

Other Resources	Not Present ⁴	Present/ Not Affected	Present/ May be Affected	Rationale
Greenhouse Gas Emissions and Climate Change		•		<p>Greenhouse gas emission levels during construction and operation would be consistent with existing conditions and would not reach a level that would warrant additional analysis in this EA.</p> <p>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. However, there are, and would continue to be, several efforts to address GHG emissions from federal activities, including BLM authorized uses in future planning documents.</p>
Grazing Management		•		<p>The Proposed Action is located in the Wheeler Wash allotment (05431 – 64,701 acres). The Wheeler Wash allotment is inactive and does not have permittees. The BLM trend is toward a decrease in the number of active grazing allotments. This allotment has been designated to have the highest need and priority for intensive management by the BLM (BLM Southern Nevada District Office, 2014).</p> <p>Due to the linear nature and limited size of the Proposed Action, and the ability for cattle to cross the rail corridor at any location (other than wash crossings with culverts), the Proposed Action is not expected to reduce Animal Unit Months or produce other effects to Grazing Management.</p>
Hydrologic Conditions			•	<p>Carried forward for analysis.</p> <p>See Affected Environment, Environmental Consequences, and Cumulative Impacts in Section 3.9 Hydrologic Conditions.</p>
Land Use Authorization			•	<p>Carried forward for analysis.</p> <p>See Affected Environment, Environmental Consequences, and Cumulative Impacts in Section 3.10 Land Use Authorizations.</p>

Other Resources	Not Present ⁴	Present/ Not Affected	Present/ May be Affected	Rationale
Geology and Minerals			•	Carried forward for analysis. See Affected Environment, Environmental Consequences, and Cumulative Impacts in Section 3.11 Geology and Minerals.
Noise Impacts		•		Existing ambient noise levels will remain unchanged. Results of a study conducted for ARES by Dave Scott Consulting showed the rail cars in the Proposed Action would have a noise level of 57 decibels from a distance of 50 feet. This noise level is comparable to a rail transit train at a speed of 20 miles per hour (Federal Transit Administration, 2006). It is equivalent to the noise of an air-conditioning unit at a distance of 100 feet (see Appendix B). Sound will not be noticeable at Nevada State Highway 160, area neighborhoods, and will likely be drowned out by recreation vehicle noise on existing roads and at the Pahrump Speedway. At no distance will ear protection be needed by personnel. Wildlife in close proximity to the rail will notice the 'not natural' noise, but based on the operational parameters of the shuttle trains, the noise level will not be startling.
Paleontological Resources	•			Initial cultural surveys conducted at the site (HDR, 2015), found no evidence of artifacts. In the event of a discovery, the BLM archaeologist will be notified prior to continuing any work.
Recreation			•	Carried forward for analysis. See Affected Environment, Environmental Consequences, and Cumulative Impacts in Section 3.12 Recreation.
Socio-Economic Values			•	Carried forward for analysis. See Affected Environment, Environmental Consequences, and Cumulative Impacts in Section 3.13 Socio-Economic Values.
Soils			•	Carried forward for analysis. See Affected Environment, Environmental Consequences, and Cumulative Impacts in Section 3.14 Soils.

Other Resources	Not Present ⁴	Present/ Not Affected	Present/ May be Affected	Rationale
Transportation			•	Carried forward for analysis. See Affected Environment, Environmental Consequences, and Cumulative Impacts in Section 3.15 Transportation.
Vegetation - including BLM Sensitive Species			•	Carried forward for analysis. See Affected Environment, Environmental Consequences, and Cumulative Impacts in Section 3.16 Vegetation.
Forestry			•	Carried forward for analysis. See Current Environment in See Affected Environment, Environmental Consequences, and Cumulative Impacts in Section 3.17 Forestry.
Visual Resources			•	Carried forward for analysis. See Current Environment in See Affected Environment, Environmental Consequences, and Cumulative Impacts in Section 3.18 Visual Resources.
Wild Horses and Burros			•	Carried forward for analysis. See Current Environment in See Affected Environment, Environmental Consequences, and Cumulative Impacts in Section 3.19 Wild Horses and Burros.
Wildlife - including BLM Sensitive Species			•	Carried forward for analysis. See Current Environment in See Affected Environment, Environmental Consequences, and Cumulative Impacts in Section 3.20 Wildlife.
Water Resources/ Quantity		•		The water will be brought in from offsite by a local provider. There will be no drawdown of groundwater from the local hydrographic basin by the Proposed Action.

3.2 Cumulative Scenario

The Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 CFR 1508.7) define cumulative impacts as:

“ . . . the impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”

The BLM NEPA Handbook states that the purpose of the cumulative effects analysis is to ensure decision-makers consider the full range of the consequences of the Proposed Action, Alternative, and No Action Alternative. Those resources identified for detailed analysis that would be directly or indirectly affected by the Proposed Action are analyzed below. If the actions under the Proposed Action, Alternative, and No Action Alternative have no direct or indirect effect on a resource, then the cumulative impacts on that resource are not addressed below.

The geographic area of cumulative impacts analysis is generally based on the natural boundaries of the resource affected and is described below in each resource section. Past actions are considered those that have occurred within the past 50 years. Present actions are considered those occurring at the time of this evaluation. Future actions are those that are in planning stages with a reasonable expectation of occurring over the next 20 years.

As discussed in the Draft Resource Management Plan and Environmental Impacts Statement of the Las Vegas and Pahrump Field Offices, vegetation (native plant communities) in the Las Vegas Field Office and Mojave Ecoregion is experiencing severe declines in quality and quantity that affect the level of ecosystem services they provide to humans. In general, direct and indirect impacts to native plant communities are additive and cumulative over time, most Mojave Desert native plant communities will not fully recover from temporary disturbances within the lifetime of the average BLM resource management plan. Using a survey of 47 studies examining natural re-establishment after a variety of disturbances, such as fire, abandoned roads, power line corridors, and a linear regression, Scott Abella (Abella, 2010) estimates that without active restoration, it takes the Mojave Desert 76 years for re-establishment of perennial plant cover and 215 years for re-establishment of perennial and annual species cover. Almost all native vegetation in the Mojave ecoregion is being subjected to multiple environmental stressors that affect the quality of native plant communities. Summarized below are the trends in stressors and effects on vegetation from 1998 to 2013 in the Las Vegas and Pahrump Field Offices according to the draft RMP and EIS:

Non-native species – The trend is an increase in area occupied by non native species. Invasive non-native plants are a major threat to native plant communities because they thrive in disturbed areas and are better competitors for water, nutrients, and space than many native species (Billings, 1990) (D'Antonio & Vitousek, 1992) (DeFalco, Fernandez, & Nowak, 2007) (Mack, 1981) (Salo, 2005) (Vitousek, 1990). This competition slowly reduces the stability and resiliency of native plant communities because it gradually reduces the amount of seed produced by native species and, subsequently, the amount available for recovery. An estimated 2.9 million acres (or 94 percent) of Las Vegas and Pahrump Field Offices are moderately to heavily impacted by non native plants, primarily red brome and Mediterranean grass.

Fire – The trend is an increase in number of acres burned and higher frequency of repeat burning. In lower elevation vegetation, non-native annual grasses are now responsible for an annual grass/fire cycle that did not exist before (Brooks, 1999) (Brooks, et al., 2004). This is largely because the spaces between individual shrubs were bare, and acted as a fuel break. Now, non-native annual grasses create a nearly continuous fuel load that carries fire between shrubs (Brooks 1999). Following fire, non-native annual grasses are some of the first species to return. If fire returns too quickly, the surviving native plants do not have enough time to grow and produce the seed needed for recovery. An estimated 1.3 million acres (or 42 percent) of Las Vegas and Pahrump Field Offices burned from 1998 to 2013.

Livestock Grazing – The trend is toward a decrease in the number of active grazing allotments, grazing use is constant in wild horse and burro herd management areas. Grazing affects the species composition and biomass production of native plant communities through selective foraging. It is generally agreed that present-day Mojave ecosystems did not evolve with significant selective pressure from large-bodied herbivores (Beever, Tausch, & Brussard, 2003) (Brown & McDonald, 1995) (Grayson, 1987) (Hall, 1946), and desert vegetation is very slow to recover if overgrazed or disturbed (Abella, A Systematic Review of Wild Burro Grazing Effects on Mojave Desert Vegetation, 2008) (Tueller, 1989) (Chambers, Brooks, Pendleton, & Raish, 2013). Currently 9.2 percent of the Las Vegas and Pahrump Field Offices are being grazed by domestic livestock, wild horses and burros.

Climate change – The trend is toward less stable atmospheric conditions leading to more extremes in temperature and precipitation, increase in the average low temperature, potential changes in seasonality, potential decrease in total precipitation. Changes in temperature and precipitation affect the ability of seeds to germinate, and plants to grow, which can affect the plant species are present and which species are dominant. The entire 3.1 million acres in Las Vegas and Pahrump Field Offices are affected. Evidence of changes in vegetation shifts over the last 30 years - including shifts in the distribution of Mojave yucca, pinyon pine and juniper trees.

Lands and minerals use authorizations – Trend is increasing number of authorizations issued that reflect trends in economic growth. BLM issued 2,917 lands and minerals authorizations directly and indirectly affecting 304,000 acres (roughly 9.8 percent) of the planning area between 1998 and 2013.

Development of desert tortoise habitat, habitat for BLM special status and habitat for wildlife – Trend is increasing development in desert tortoise habitat that reflects trends in economic growth. Based on desert tortoise Section 7 fees, an estimated 40,000 acres of creosote bursage scrub was impacted between 1998 and 2013.

Recreation use – Trend is increasing permitted and casual recreation on public lands. Since 2007, casual visitor use in the Las Vegas Field Office has increased by approximately 11 percent annually. Casual recreation is estimated to have directly impacted between 3,000 to 6,000 acres (0.12 percent to 0.25 percent) of native plant communities in the Las Vegas Field Office under the 1998 RMP. As of 2009, there is an estimated 11,151 miles (estimated 13,500 acres) of dirt roads and trails present in the Las Vegas Field Office. This represents 0.56 percent increase in the field office. Similar percentages are likely in the Pahrump Field Office. Impacts to vegetation from casual recreation are the highest in Special Recreation Management Areas. The number of acres of indirect impacts and cumulative impacts is unknown.

3.2.1 Past and Present and Reasonably Foreseeable Future Actions (RFFAs)

The approach to cumulative impacts of the proposed projects considers “past” projects to be those that have completed construction and are in operation. “Present” projects include those that are currently under construction or have been fully permitted such that they are likely to be part of the existing environment when the proposed projects would begin construction. “Reasonably foreseeable” future projects are those for which a formal permit application has been filed or the project has been detailed in an existing land use plan. Table 3-3 lists existing and proposed ROWs potentially impacted by the Proposed Action.

Table 3-3 Past, Present and RFFAs in the vicinity of the Proposed Action

Existing Public Land Use (Includes past and present Actions)			
Proponent	Project	Width/Size	Serial Register
BLM	Community gravel pits	variable	NA
BLM	Fire Station	2.8 acres	NA
NDOT	Highway 160	400 feet	NVN-016109
Nevada Bell	Buried fiber optic line (Pahrump to Sandy Valley)	20 feet	NVN-079653
Unknown	Unspecified (Non-energy FLPMA),	0.4 acres	NVN-062888
VEA	230kV transmission line	100 feet	NVN-057100
VEA	138kV transmission line	80 feet	NVN-059100
VEA	24.9kV transmission line	20 feet	NVN-066289
Reasonably Foreseeable Future Actions			
Proponent	Project	Size	Status
Multiple Federal Agencies	Proposed Section 368 multi- modal Energy Corridor (see Figure 2)	3,500 feet	Final EIS released
Nye County	Proposed Great Basin College campus (Tule Springs sale legislation, 2014 National Defense Authorization Bill)	approximately 280 acres	Pahrump Regional Planning District Master Plan
Nye County	Proposed Public Safety Center on Highway 160 at the County border (see Figure 22) Center is mapped in the Plan, but not discussed, therefore the Center may no longer be planned	Unknown	Pahrump Regional Planning District Master Plan
Nye County	Proposed Pahrump beltway and truck route (see Figure 23)	218 feet wide	Pahrump Regional Planning District Master Plan
Nye County	Proposed Wheeler Wash flood control dams	variable	Pahrump Regional Planning District Master Plan
Nye County	Proposed multiple flood control retention	variable	Pahrump Regional Planning District Master Plan
Western Area Power Administration	750kV transmission intertie - partially completed from Oregon to Mead Substation - construction halted in 1969 due to lack of funding	200 feet	NVN-065524

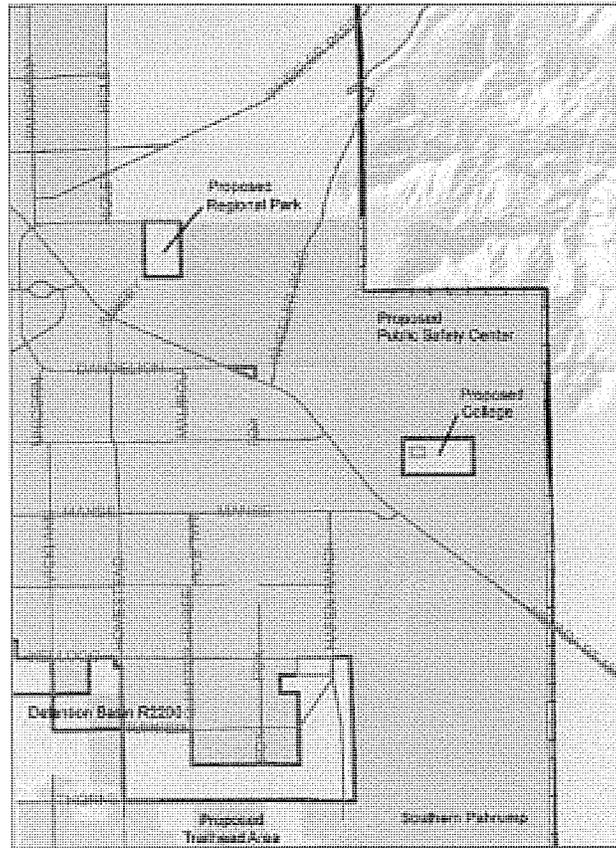


Figure 22. Pahrump Regional Master Plan map of projects proposed, and BLM land requested for disposal status, in the vicinity of the Proposed Project (Pahrump Regional Planning Commission, 2014).



Figure 23. Proposed Pahrump beltway (red) and truck route (purple) passing the Proposed Project areas.

3.2.2 Cumulative Effects Study Area

The cumulative effects study area (CESA) encompasses approximately 142,830 acres (57,800 hectares) and is bounded by Nevada State Highway 160 to the west, Trout Canyon Road to the south, Spring Mountains ridgeline to the east, with the northern boundary running through Santa Cruz spring (see Figure 24).

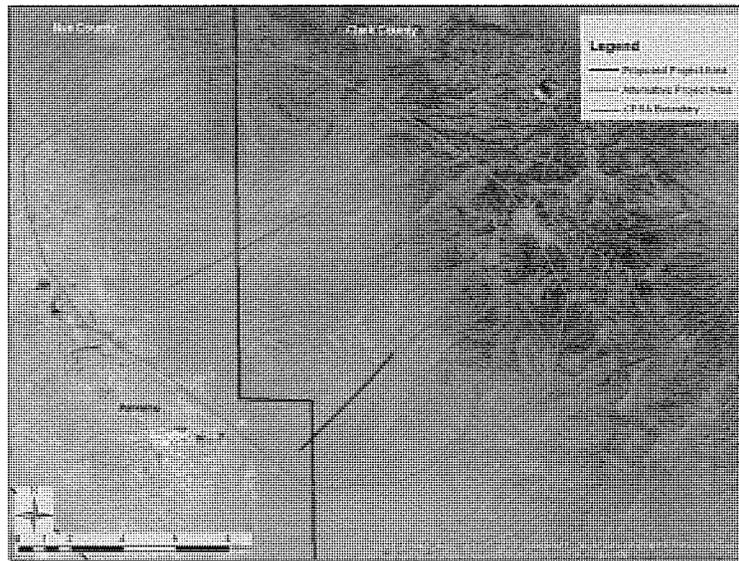


Figure 24. Cumulative Effects Study Area (CESA).

As discussed above, native plant communities in the Mojave Ecoregion are gradually declining and slow to recover. Contributing to this are: 1) wildfires that are increasing in frequency and intensity because non-native grasses are invading the natural plant communities and providing more fuel than is seen with native plants; 2) selective grazing by horses, burros and livestock; 3) recreational use that is increasing and can exacerbate erosion by breaking through desert pavement, crush plants, etc.; 4) increasing land and mineral use; and 5) climate change. In turn, these can adversely affect wildlife by reducing habitat/nesting areas and forage.

3.2.2.1 Proposed Action

The Proposed Action would contribute marginally to the decline of native plant communities and animals in the area through the long-term removal of 72 acres and short-term removal of 98 acres of habitat (the 98 acres will be restored following construction). Construction will contribute to a slight increase in dust and noise in the area. The dust will be controlled with water or a BLM approved palliative) and noise will be mitigated by operating only during daylight hours when most people are active, but will have almost no dust or noise impact during operations. It should have minimal impact to recreation and recreational access, since the land will remain largely open, the roads will be provided with rail crossing signs, and Loop Boundary Road will be straightened to only cross the railbed once, rather than the three times it would if it remained unchanged. The Proposed Action will have little effect on wildfires, other than to possibly act as a fire break. In the realm of climate change, it will contribute engine exhaust products during construction, almost none (mainly from employee travel) during operations phase, and will produce no emissions while storing and releasing energy. It will provide a significant positive impact to the community.

Approximately 100 to 125 personnel (mostly local) will be employed during construction, providing increased business (e.g., restaurants, gas stations, food and clothing stores, entertainment and housing). Additionally, supplies and equipment will be sourced locally whenever possible. During the operations period (approximately 30 years) 15 to 16 employees will operate, maintain, and provide security for the site on a 24-hour basis. Most of the 16 will likely purchase homes in the area for their families, and put their children in local schools. Increased business will lead to a badly needed increase in the tax base for local government.

To avoid disrupting habitat connectivity, the 5.5 mile rail bed will be constructed at grade level with a catenary power line to allow easy and safe passage by wild horses, burros and other large animals. A series of culverts and safe passage ways will allow tortoises and small animals passage from one side of the railbed to the other. The presence of the Proposed Action, its personnel, and their contribution to local business and taxes may help to jumpstart or lend credence to other projects, such as the Great Basin College, or the Public Safety Center, and could create a synergistic effect to help growth in other areas such as a park, or the Pahrump truck bypass route. It would provide an outstanding example of sustainable development and possibly convince other developers to build sustainably. However, it would continue to contribute very slightly to habitat fragmentation and gradual deterioration if those projects were constructed.

3.2.2.2 Alternative

Cumulative impacts and contributions to the existing and foreseeable future actions from the Alternative would not differ noticeably from those discussed in the Proposed Action. As with the Proposed Project, the Alternative would contribute marginally to the decline of native plant communities and animals in the area through the long-term removal of 70 acres and short-term removal of 98 acres of habitat (the 95 acres will be restored following construction), which is slightly lower than for the Proposed Project.

3.2.2.3 No Action Alternative

Under the No Action Alternative the Project ROW would be denied and no energy storage or site disturbance would take place. There would be no increase in jobs, so local businesses (gas stations, restaurants, grocery stores, etc.) would see no increase and there would be no change in the tax base to support state and local government. Vegetation and habitat would continue to gradually decline and be affected by wildfires. Invasive plants and weeds may crowd native plant communities when fire or other disturbance provides access to the area for them.

3.3 Air Quality

The principal ambient air pollutants, based on public health concerns, have been identified by the U.S. Environmental Protection Agency (EPA) as "criteria" pollutants. The EPA established National Ambient Air Quality Standards (NAAQS) for these criteria pollutants. The standards of quality for ambient air in Nevada differ from EPA's.

3.3.1 Affected Environment

The unincorporated township of Pahrump and Pahrump Valley currently meet attainment standards for all criteria pollutants as set forth in the NAAQS (BLM Southern Nevada District Office, 2014).

Nevada Bureau of Air Quality Planning (BAQP) has identified fugitive dust as a significant concern in the Pahrump Regional Planning District (PRPD) and Pahrump Valley. Fast population growth in the '90s through mid-2006 created intensive development. Large parcels of land were cleared of vegetation, subdivided and prepared for housing construction. Dirt and gravel roads were constructed. Many of the planned housing developments never materialized and the lots are now disturbed, vacant areas.

As a result of the disturbed, vacant land and the number of dirt and gravel roads, fugitive dust (particulate matter less than 10 microns, or PM¹⁰) became a problem. The Pahrump valley is subject to high winds and these winds often create dust storms. Even the slightest wind can pick up dust from the disturbed areas, allowing it to become a health hazard.

The BAQP has been monitoring for PM¹⁰ in the Town of Pahrump since January 2001. Monitors record ambient air data continuously, which is downloaded to the BAQP office in Carson City. Based on a 2001

inventory, fugitive emissions from unpaved roads and disturbed vacant land were found to be the biggest sources of PM¹⁰ emissions, accounting for 92% of PM¹⁰ emissions in the Valley. As of fall 2010, monitors are located and operating at Linda Street, Manse Elementary School, Glenoaks Street and the church on Gamebird Road (Nevada Division of Environmental Protection, 2010).

The PRPD Dust Control Regulations (Nye County Ordinance 289) were adopted by the Nye County Board of Commissioners on August 17, 2004, and became effective on January 1, 2005. The Nye County Air Quality Department enforces the dust control regulations for the PRPD.

3.3.2 Methodology

In evaluating potential impacts, the acres of potential surface disturbances were compared with known and potential emissions from construction and operation of the facility. The potential air quality impacts were then compared with existing conditions, including current issues and trends.

3.3.3 Environmental Consequences

3.3.3.1 Proposed Action

The Proposed Action includes the construction of 5.5 miles of rail line and associated catenary line, 7 miles of new road, 3 miles of existing road improvements, 5,000 feet of transmission line removal, 7,200 feet of transmission line upgrades, and grading of 0.8 acres for a facilities and maintenance area (see Tables 2-1, 2-2, and 2-3).

3.3.3.1.1 Direct and Indirect Effects

Air quality would decrease during construction activities. Pollutants generated during these activities would include combustion emissions and fugitive dust associated with construction equipment and vehicles. Construction activity is planned to occur between 7:00 am and 7:00 pm daily for approximately six to eight months. Dust control activities utilizing water will be conducted during all construction activities as indicated in project mitigation plans.

There will be a one month period during the construction phase when a majority of the rail line ballast will be delivered, potentially further increasing fugitive dust levels and vehicle emissions at that time due to the increased heavy truck traffic. Additional mitigation for dust may be required during that time.

Once construction is complete, air quality impacts associated with these activities would cease. Emissions anticipated during operation will be nominal. The electric trains operate without emissions. Fugitive dust from travel on the track-side maintenance road would be due mainly to recreational vehicles; maintenance vehicles are not anticipated to make more than two trips each day along the length of the road. Recreational vehicle use is not expected to rise above current use levels due to the development of this project.

3.3.3.1.2 Mitigation Measures

Limiting dust during construction and operation activities will be an adopted design feature. The fugitive dust control measures, including the application of water to disturbed surfaces, would keep off-site particulate matter levels reduced. In addition, dust control permits from the Clark County Department of Air Quality for all soil-disturbing activities within Clark County, and Nye County Planning for all soil-disturbing activities within Nye County, would be required for the Project. Clark and/or Nye County may defer management and oversight of the dust control permit to the Nevada Division of Environmental Protection, Air Quality Bureau.

The construction contractor will cover construction materials and stockpiled soils if these are sources of fugitive dust. To minimize fugitive dust generation, land surfaces will be watered before and during surface clearing or excavation activities.

Mitigation plans will provide a speed limit for project access roads to help reduce dust emissions.

3.3.3.1.3 Residual Impacts

After mitigation measures are applied, limited residual impacts are anticipated. These would mainly occur during the construction phase, due to vehicle and heavy equipment emissions. Decommissioning operations would be similar to construction, with fewer vehicle emissions.

Residual impacts during operation will be minimal due to the limited number of full time employees needing to commute to the site each day.

3.3.3.1.4 Cumulative Impacts

The Proposed Action would result in new disturbance of up to 170 acres. The project, in combination with other past, present, and reasonably foreseeable future actions in Hydrographic Basin 162 would contribute to cumulative increases in particulate levels and other criteria pollutants in the Basin.

Other reasonably foreseeable future actions in the basin that would result in soil-disturbing activities of greater than 0.25 acre would be required to obtain a dust permit from the Clark County Department of Air Quality and/or Nye County Air Quality Department, and to comply with the all permit stipulations.

3.3.3.2 Alternative

The Alternative includes the construction of generally the same facilities and similar amount of land disturbance as described for the Proposed Action (see Tables 2-5, 2-6, and 2-7 for the acreages of disturbance).

3.3.3.2.1 Direct and Indirect Effects

The direct and indirect effects of the Alternative on air quality would be the same as described for the Proposed Action because the same construction procedures would be use and a similar level of ground disturbance would occur and the same construction methods and best management practices would be implemented.

3.3.3.2.2 Mitigation Measures

Mitigation measures described for the Proposed Action would be adopted and implemented for the Alternative.

3.3.3.2.3 Residual Impacts

As with the Proposed Project, limited residual impacts are anticipated, and would be the same as those described for the Proposed Action.

3.3.3.2.4 Cumulative Impacts

The Cumulative Impacts from the Alternative would be minimal and similar to those described for the Proposed Project.

3.3.3.3 No Action Alternative

3.3.3.3.1 Direct and Indirect Effects

Under the No Action Alternative, the Proposed Project would not be built and the area would continue to be subject to existing conditions. The land would remain available for future development. Any future developments within this area could result in impacts to air quality of a similar or greater degree.

3.3.3.3.2 Cumulative Impacts

Because the No Action Alternative would result in no direct or indirect impacts related to air quality, there would be no cumulative impacts associated with the No Action Alternative.

3.4 Noxious Weed

3.4.1 Affected Environment

Southern Nevada lands are impacted by the presence of noxious and invasive, non-native vegetation. Invasive plants and noxious weeds are managed on public lands by the BLM under the direction of the National Invasive Species Council established in 1999 (Executive Order 13112). Noxious weeds are regulated by NRS 555.130-201 and NAC Chapter 555. Lists of weed species reviewed included the Nevada Department of Agriculture (NDA) Noxious Weed List (Nevada Department of Agriculture, 2014) and the Federal Noxious Weed List (US Department of Agriculture, December 2010). The BLM Las Vegas Field Office has prepared the Noxious Weed Plan that provides guidance for an active integrated weed management program using BMPs.

No noxious weeds were observed during the 2014 botanical surveys.

3.4.2 Methodology

The analysis makes use of the best available data, and the professional judgment and field observations of BLM specialists. The analysis also compares elements of the Proposed Action and the project area boundary with the habitat and describes the risk of spread and introduction of new weeds in those disturbed areas.

3.4.3 Environmental Consequences

3.4.3.1 Proposed Action

3.4.3.1.1 Direct and Indirect Effects

The Proposed Action has the potential to impact 72 acres in the long-term and impact 98 acres in the short-term through ground-disturbing activities which could introduce noxious weed populations. Construction associated with the Proposed Action would involve clearing and grubbing which would result in a decrease in native plant cover and increased soil disturbance. Vegetation removal provides an opportunity for non-native weeds species to colonize the project area. Noxious weeds effectively compete with native species for sunlight, soil, water, nutrients, and space, reducing forage productivity. Additionally, soil disturbance could reduce the native seed bank associated with the site.

Increased vehicle traffic during all phases of the Proposed Action would also contribute to the potential spread of noxious weeds. Vehicles are effective at introducing and/or spreading weeds by dispersing seeds along roadways.

Increased vehicle activity also has the potential to spread non-native invasive annual grasses. Although the non-native annual grasses are not legally designated as noxious by the State of Nevada, their role

within the Mojave Desert ecosystem is increasingly important with respect to their relationship to fire and future disturbance. The increase of fine fuels may result in ignitions and ultimately increase the number of wildfires in the area. Aggressively managing invasive or noxious species would limit residual effects to manageable levels. This is made possible by maintaining discontinuous, dispersed native vegetation, nonflammable native species, propagation and planting of native species, or complete removal of all vegetation. In addition, for the life of the project, fires originating outside of the project area on adjacent lands could impact the project area. These areas have had increased wildfire risk over time due to invasive annual grasses.

3.4.3.1.2 Mitigation Measures

Implementation of standard BMPs and project stipulations would help identify, prevent, and treat the spread of noxious and/or invasive species. An Integrated Weed Management Plan would be prepared in coordination with the BLM. ARES proposes to reduce and control invasive plants within the project area by manual methods, and if necessary and approved by the BLM, herbicides, to lessen the potential for the dispersal or increased abundance of any new noxious weeds. A Fire Protection Plan would be prepared to minimize the occurrence of unwanted human-caused and naturally caused fires. The plan would describe an emergency notification procedure, site evacuation process, and fire prevention procedures.

3.4.3.1.3 Residual Impacts

If not monitored and/or actions not taken to mitigate or eradicate noxious weeds which may find their way onto the Proposed ROW, noxious weeds could spread to areas not currently inhabited, degrading not only the lands within the Proposed ROW, but adjacent lands as well.

3.4.3.1.4 Cumulative Impacts

The Proposed Action would contribute to the cumulative impacts from noxious weeds, and in conjunction with other projects, would result in cumulative impacts on native vegetation communities, including the potential spread of noxious and/or invasive weeds. The combined effects of the reasonably foreseeable future actions have the potential to increase the rate at which the noxious weeds colonize lands with the cumulative impacts area.

It is assumed that all reasonable foreseeable future development on BLM lands would be subject to the same design features and mitigation measures which reduce the potential cumulative increases in noxious weeds and invasive species. In addition, other reasonably foreseeable future actions that would result in ground-disturbing activities would be required to comply with the Las Vegas Field Office Noxious Weed Plan.

3.4.3.2 Alternative

3.4.3.2.1 Direct and Indirect Effects

The potential direct and indirect effects of the Alternative would be the same as the effects from the Proposed Project except that a slightly smaller amount of habitat would be affected.

3.4.3.2.2 Mitigation Measures

As described for the Proposed Action, implementation of standard BMPs and project stipulations would help identify, prevent, and treat the spread of noxious and/or invasive species.

3.4.3.2.3 Residual Impacts

Residual impacts from implementing the Alternative would be the same as described for the Proposed Project.

3.4.3.2.4 Cumulative Impacts

The potential cumulative impacts of implementing the Alternative are the same as described for the Proposed Action.

3.4.3.3 No Action Alternative

3.4.3.3.1 Direct and Indirect Effects

Under the No Action Alternative, the Project ROW would be denied and noxious weeds would continue to grow and spread under current conditions. The land would remain available for future development; future development could result in impacts of a similar or greater degree.

3.4.3.3.2 Cumulative Impacts

Because the No Action Alternative would result in no direct or indirect impacts related to invasive species and noxious weeds there would be no cumulative impacts associated with the No Action Alternative.

3.5 Floodplains

3.5.1 Affected Environment

There are no perennial streams within the project area; there are a number of ephemeral washes. Flow in the ephemeral washes can be substantial during rainfall events or spring snow melt, and may result in flash flooding in the washes and floodplains.

The Proposed Action is located on an alluvial fan originating from the Spring Mountains. Alluvial fans are triangular or fan-shaped, gently-sloping landforms found along the base of mountain fronts in western states. Carpenter Canyon exhibits characteristics of an active fan, such as braided channels and deeper flow paths.

Flooding can occur on the surface of an alluvial fan, originating at the apex, and is characterized by high-velocity flows; active processes of erosion, sediment transport, and deposition; and unpredictable flow-paths.

3.5.2 Methodology

This analysis makes use of the best available data. FEMA flood insurance rate maps and letters of map revision were reviewed to determine flood potential along the proposed alignment for the project. Field observations and professional judgment (project design engineers' site visit on June 11 and 12, 2014) were incorporated to determine culvert use.

3.5.3 Environmental Consequences

3.5.3.1 Proposed Action

The Proposed Action lies within FEMA designated Zone A (designated as Peak Springs alluvial fan in Figure 25) and Zone X (unshaded). Zone A is defined by FEMA as areas subject to inundation by the one-percent-annual-chance flood event generally determined using approximate methodologies. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations or flood depths are shown. Zone X is defined by FEMA as an area of minimal flood hazard, i.e. areas outside the Special Flood Hazard Areas and higher than the elevation of the 0.2-percent-annual-chance flood.

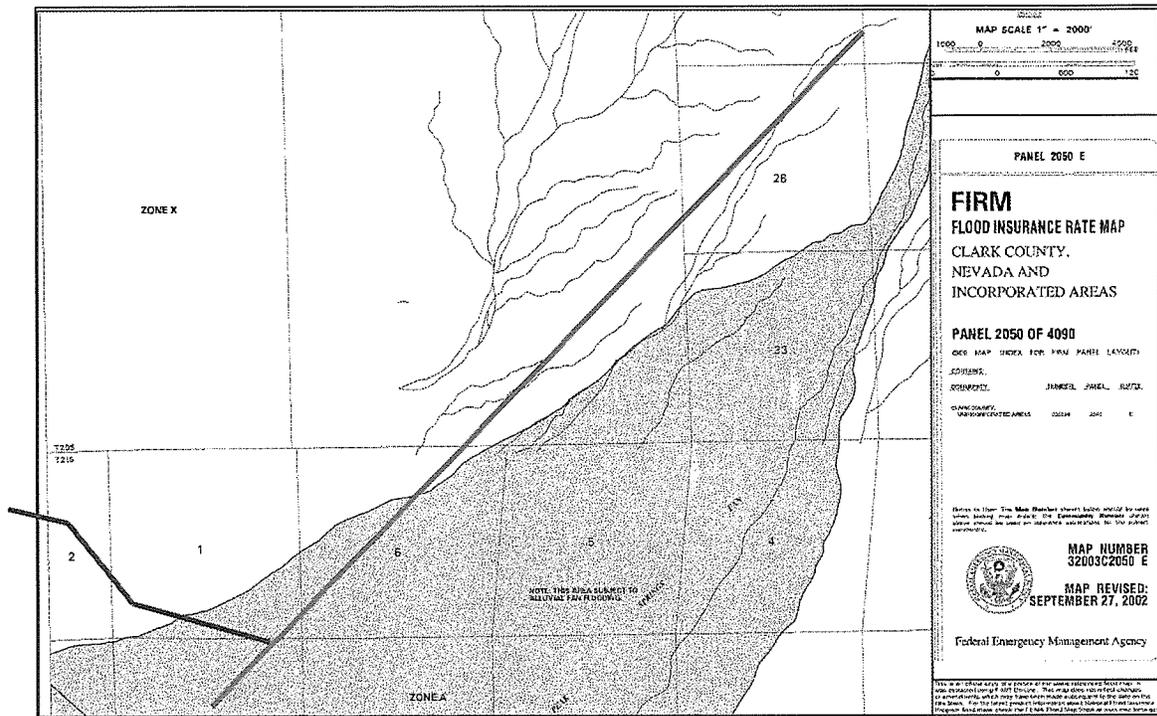


Figure 25. FEMA Flood Control Zone (Flood Insurance Rate) map for the Clark County portion of the Proposed Action.

3.5.3.1.1 Direct and Indirect Effects

The Proposed Action would utilize culverts (see Figure 26) to allow the train to travel along a constant elevation and avoid changing drainage patterns, or impede or redirect flows outside of existing flow channels, to the extent possible. Sediment levels would not be increased to any measurable degree during runoff events by abiding to the NDEP required Stormwater Pollution Prevention Plan best management practices.

All runoff from the Proposed Project would encounter the established drainage features installed by Nevada Department of Transportation (Highway 160), therefore, drainage patterns and flows in inhabited areas, such as the Town of Pahrump, should not be impacted.

3.5.3.1.1 Mitigation Measures

Application of proposed design features would reduce floodplain impacts. Surface water protection measures will be taken for runoff and storm events. US Army Corps of Engineers Nationwide Permit 43 applies to stormwater management facilities.

ARES would also prepare a Site Drainage Plan and Stormwater Pollution Prevention Plan (SWPPP).

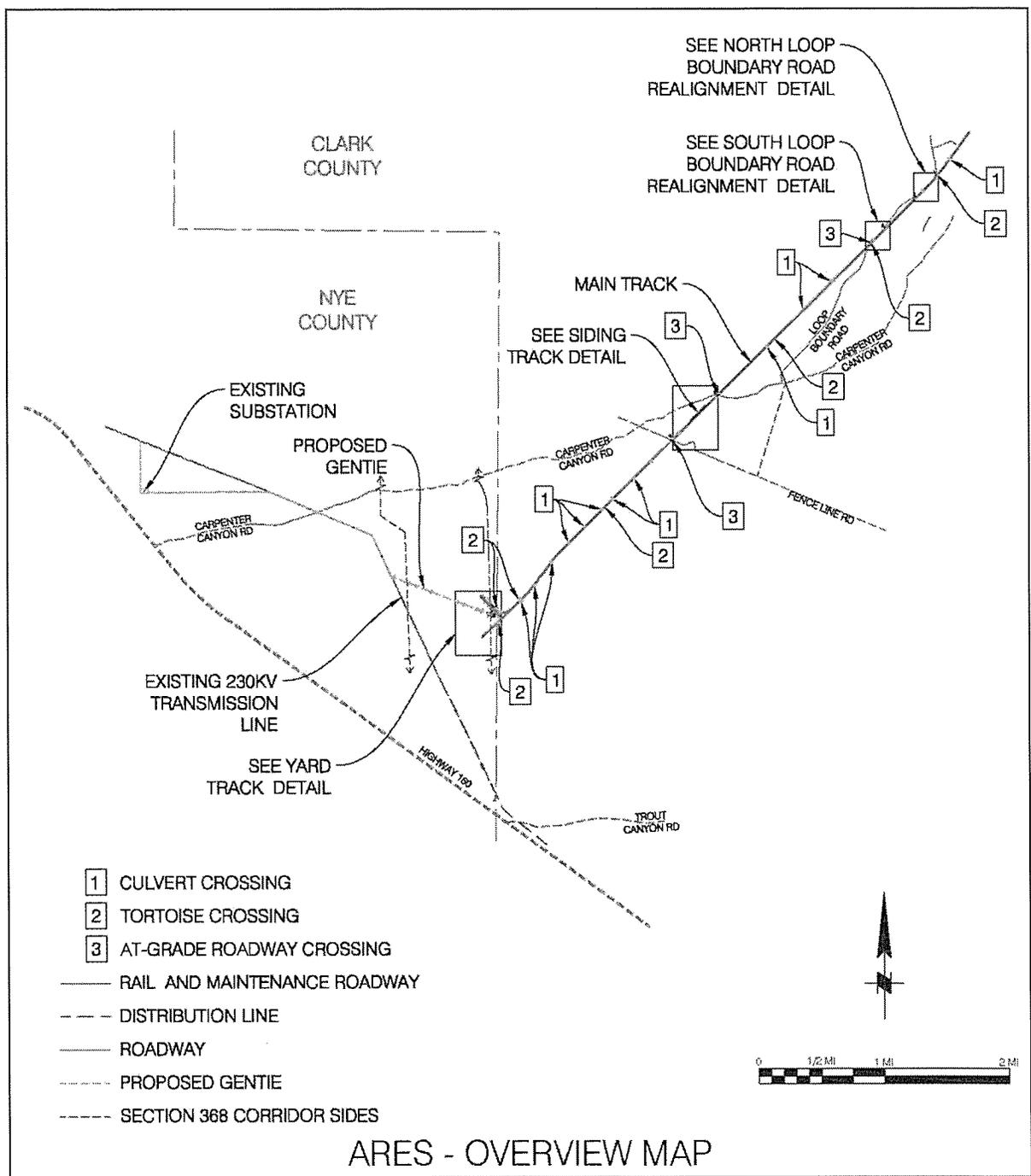


Figure 26. Proposed culvert, road, and tortoise crossing locations within the rail corridor for the Proposed Action.

3.5.3.1.2 Residual Impacts

After mitigation measures are applied, limited residual impacts are anticipated, particularly to the down-slope areas, which are across Highway 160.

Residual impacts during operation would be negligible assuming rehabilitation of temporary disturbance areas is successful. Stormwater Pollution Prevention best management practices will be utilized to limit storm water runoff from the facilities area.

3.5.3.1.3 Cumulative Impacts

The Proposed Action would result in new disturbance of up to 170 acres. The project, in combination with other past, present, and reasonably foreseeable future actions in Hydrographic Basin 162 would contribute to cumulative increases in erosion and sedimentation.

3.5.3.2 Alternative

As with the Proposed Action, the Alternative lies within FEMA designated Zone A (designated as Peak Springs alluvial fan in Figure 25) and Zone X (unshaded). Zone A is defined by FEMA as areas subject to inundation by the one-percent-annual-chance flood event generally determined using approximate methodologies. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations or flood depths are shown. Zone X is defined by FEMA as an area of minimal flood hazard, i.e. areas outside the Special Flood Hazard Areas and higher than the elevation of the 0.2-percent-annual-chance flood.

3.5.3.2.1 Direct and Indirect Effects

As with the Proposed Action, the Alternative would utilize culverts (see Figure 27) to allow the train to travel along a constant elevation and avoid changing drainage patterns, or impede or redirect flows outside of existing flow channels, to the extent possible. Sediment levels would not be increased to any measurable degree during runoff events by abiding to the NDEP required Stormwater Pollution Prevention Plan best management practices.

All runoff from the Proposed Project would encounter the established drainage features installed by Nevada Department of Transportation (Highway 160), therefore, drainage patterns and flows in inhabited areas, such as the Town of Pahrump, should not be impacted.

3.5.3.2.2 Mitigation Measures

Application of proposed design features would reduce floodplain impacts. Surface water protection measures will be taken for runoff and storm events. US Army Corps of Engineers Nationwide Permit 43 applies to stormwater management facilities.

ARES would also prepare a Site Drainage Plan and Stormwater Pollution Prevention Plan (SWPPP).

3.5.3.2.3 Residual Impacts

After mitigation measures are applied, limited residual impacts are anticipated, particularly to the down-slope areas, which are across Highway 160.

Residual impacts during operation would be negligible assuming rehabilitation of temporary disturbance areas is successful. Stormwater Pollution Prevention best management practices will be utilized to limit storm water runoff from the facilities area.

3.5.3.2.4 Cumulative Impacts

The Proposed Project would result in new disturbance of up to 170 acres. The project, in combination with other past, present, and reasonably foreseeable future actions in Hydrographic Basin 162 would contribute to cumulative increases in erosion and sedimentation.

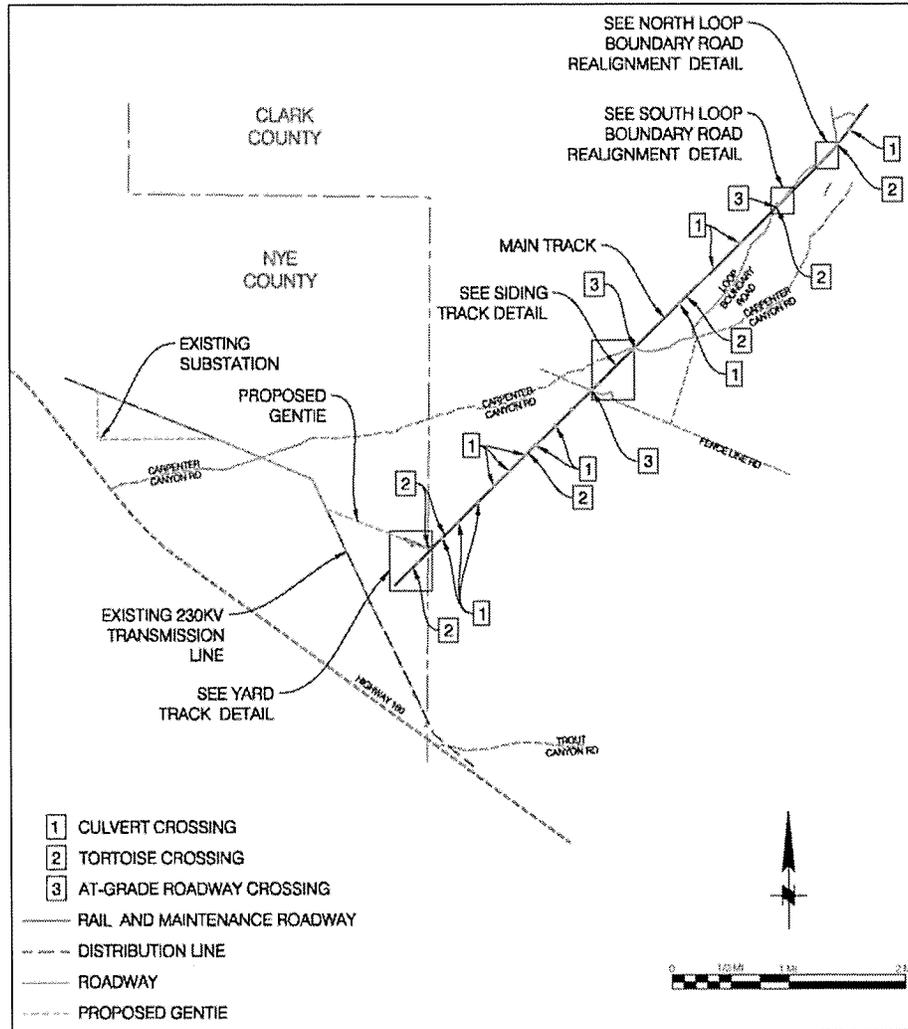


Figure 27. Proposed culvert, road, and tortoise crossing locations within the rail corridor for the Alternative.

3.5.3.3 No Action Alternative

3.5.3.3.1 Direct and Indirect Effects

Under the No Action Alternative, the Proposed Project would not be built and no impact to the existing flood regime would occur. Intermittent flooding would continue to occur along the FEMA designated Peak Spring Alluvial Fan

3.5.3.3.2 Cumulative Impacts

Because the No Action Alternative would result in no direct or indirect impacts on the Peak Spring Alluvial Fan, there would be no cumulative impacts associated with the No Action Alternative.

3.6 Threatened and Endangered Species – Including Proposed and Candidate Species

Special status species include animals and plants that require specific management attention as a result of population or habitat concerns. The categories of these species include federally listed threatened and endangered species and their respective designated critical habitats, federally proposed species and proposed critical habitats, federal candidate species, and Nevada BLM sensitive species.

3.6.1 Affected Environment

Threatened and endangered species are placed on a Federal list by the USFWS and receive protection under the Endangered Species Act of 1973, as amended.

According to the Information, Planning and Conservation (IPaC) support tool created by the USFWS (ESA Section 7(c) compliant species list), three federal threatened and endangered species have potential to occur in the vicinity of the project area: the endangered southwestern willow flycatcher, the threatened yellow-billed cuckoo, and the threatened Mojave desert tortoise. The southwestern willow flycatcher and the yellow-billed cuckoo are riparian birds requiring surface water, and no riparian habitat occurs in or near the project area. The project area is not within a path that would connect any aquatic features.

The only USFWS noted endangered, threatened, proposed, or candidate species known to occur in the vicinity of the project area is the state and federally threatened Desert Tortoise (*Gopherus agassizii*). The Proposed Action is within desert tortoise habitat. The Action Area lies within the desert tortoise's geographic range, within the Eastern Mojave Recovery Unit. The Project site is not located in designated critical habitat. Based on the existing habitat and location, the project will have no impacts to any other federally protected species and/or habitats. No further analysis required.

The Mojave desert tortoise occurs primarily on flats and bajadas with soils ranging from sand to sandy-gravel. They are also found on rocky terrain and slopes. Tortoises occur in saltbush scrub, creosote scrub, and blackbrush scrub habitat types. Within these vegetation types, desert tortoises can potentially survive and reproduce provided 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.

Biologists from BEC Environmental, Inc. surveyed the project area for desert tortoise in May, September, and October, 2014. Pre-project surveys followed USFWS guidance. One live juvenile tortoise (approximately 75 millimeters) was observed on bare ground within the proposed project boundary in the southeast ¼ of Section 32, Township 20 South, Range 55 East, on September 30, 2014. No other live tortoises were observed within the proposed project boundary. Desert tortoise sign was observed in all Sections comprising the proposed project site with the exception of Township 20 South, Range 55 East, Section 22. All categories of tortoise sign were observed (burrows, pellets, scat, carcasses, and footprints). Evidence of nesting from a previous year was observed with the presence of small eggshell fragments on one Class 3 burrow apron.

Historical survey data indicate that the area surrounding the project site ranges from very low to very high density tortoise habitat. Desert tortoise survey data show live tortoise and tortoise sign within and in close proximity to the Proposed Project.

Desert tortoises were translocated east of the Project to the Trout Canyon Large Scale Translocation Site in 2013 and 2104. The translocation site encompasses approximately 59,000 acres of public lands

managed by the BLM and 1,144 acres of the Spring Mountain National Recreation Area (part of the Humboldt-Toiyabe National Forest) managed by the U.S. Forest Service within Clark County, Nevada (Averill-Murray, Field, Allison, & Germano, January 2013). The translocation site occurs outside of designated critical habitat, but it does lie within a block of contiguous desert tortoise habitat that may be valuable for population connectivity. The site is bordered on the south by Nevada State Highway 160, and extends to the 1,250 meter elevation line in the Spring Mountains to the north. The remaining boundaries are open to adjacent land, and include a western boundary which runs North-South along the current Clark and Nye County line and an eastern boundary which follows the west bank of Lovell Wash (see Figure 28). This places the rail corridor within the boundary of the Trout Canyon Large Scale Translocation Site.

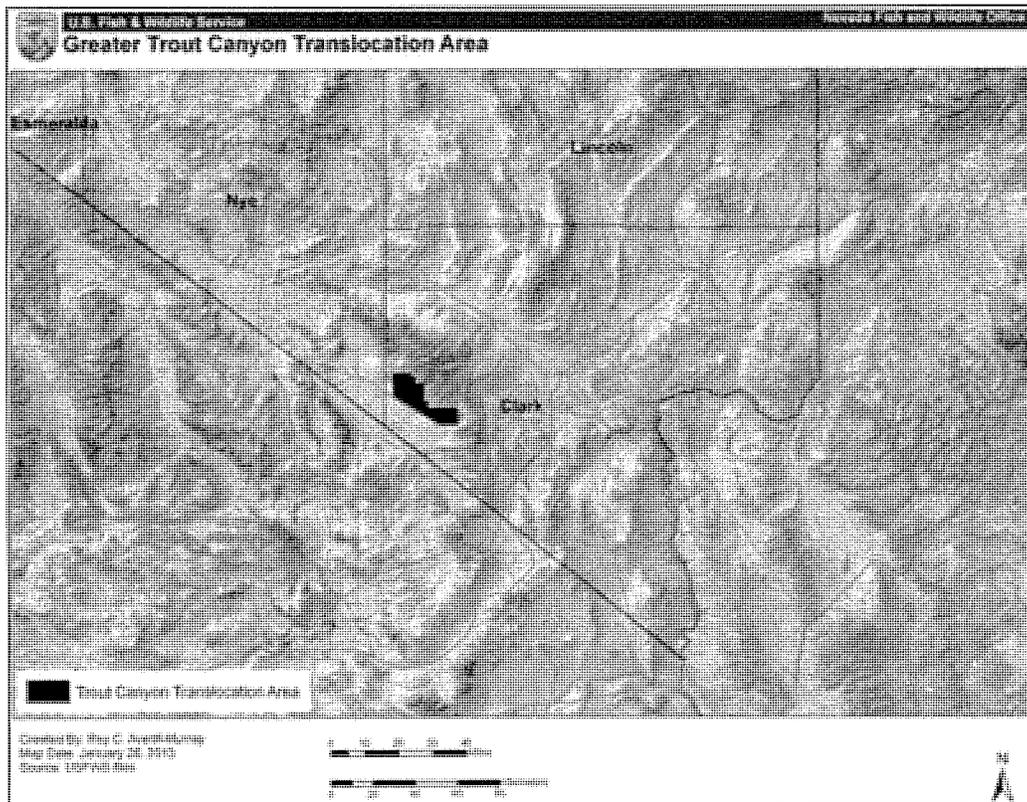


Figure 28. Greater Trout Canyon Translocation Area in relation to southern Nevada (Averill-Murray, Field, Allison, & Germano, January 2013).

Impacts to potential habitat could result from noxious weed invasion following soil disturbing activities proposed for the Action Area. Noxious weeds are aggressive and can develop dense stands that tend to out-competed native plants. Mitigation measures developed with the BLM will address potential adverse impacts.

The upper elevations of the Proposed Action Area does enter known elk distribution habitat. Any impacts to elk populations are anticipated to be minor as the impact would occur in a very small portion of the distribution area and construction for that portion of the rail corridor will be short in duration. If requested as part of the mitigation measures, construction within the elk habitat can be scheduled to reduce potential impacts.

Use of the Action Area by most raptors is expected to be transitory during hunting rather than for nesting. For this reason, and because the same type of habitat is very extensive throughout the area, the Proposed Action is not expected to affect any species adversely. The exception may be use by burrowing owls. No signs of burrowing owls were observed during the desert tortoise presence/absence surveys, but the Proposed Action is within suitable burrowing owl habitat.

Despite the data supporting a majority of avian deaths due to transmission towers are passerines, raptor mortality historically has received the most attention. The Proposed Action is located on an alluvial fan, which does not provide suitable nesting habitat for raptors; however, the area can be considered foraging habitat for raptors as the area contains small mammals and reptiles, and contains existing transmissions lines and fences which can be used to perch.

No caves or other suitable roosting sites for bats occur in the project vicinity. Loss of feeding habitat would also be minimal, and disturbance due to construction activities would not occur at night when the bats are feeding. During operation of the facility, minimal security lighting will be used which may draw insects, and thus bats, to the area.

3.6.2 Methodology

Nevada Department of Wildlife and Nevada Natural Heritage Program were contacted to provide potentially impacted species lists. Additionally, maps of tortoise habitat and connectivity were reviewed. Database information from NNHP, Nevada Native Plant Society (NNPS), BLM, and USFS, USFWS were used to determine special status plant species with the potential to occur within the Project area.

3.6.3 Environmental Consequences

3.6.3.1 Proposed Action

Threats to the desert tortoise include loss of habitat from construction projects such as roads, housing, and energy developments. Grazing and off-highway vehicle activities not only degrade tortoise habitat, but could also collapse burrows, killing any tortoises present. Also threatening the desert tortoise's continuing existence is illegal collection by humans for pets or consumption, predation on juvenile desert tortoises by common ravens (*Corvus corax*) and kit foxes (*Vulpes macrotis*), and collisions with vehicles on paved and unpaved roads. Fire is an increasingly important threat to desert tortoise habitat, mainly due to introduction of non-native annual grasses. Introduction of non-native plants can also impact tortoises by reducing the quantity and quality of forage that may stress tortoises and make them more susceptible to drought-and disease-related mortality. Anthropogenic changes to habitat or natural factors such as drought may enhance the effects of naturally occurring diseases in the desert tortoise.

Potential impacts to threatened and endangered species may result from the construction, operations, maintenance, and decommissioning of the Proposed Project. Overall impacts to desert tortoise habitat are expected to be small (a loss of $\leq 1\%$ of desert tortoise habitat in the region. There are dangers to tortoise associated with handling and removal from harm's way. Development of the area may fragment tortoise populations by creating impediments to natural migration patterns.

3.6.3.1.1 Direct and Indirect Effects

The Proposed Project has a may affect, likely to adversely affect determination for the federally threatened desert tortoise, and a no effect determination for its designated critical habitat, as the project is outside of this range. The Proposed Action has the potential to permanently impact 72 acres and temporarily impact 98 acres of desert tortoise habitat.

The proposed Project would have both direct and indirect impacts on desert tortoises on the site and tortoises in the area. Since tortoises are known to occur on the site, direct impacts would occur through loss and fragmentation of 72 acres of habitat. Direct impacts could occur during construction if a tortoise is within the site and is either injured or killed. If not noticed and avoided during construction, operation, or maintenance activities, desert tortoises could be either injured or killed (by crushing) or harassed (by being moved out of harm's way) during construction, operation, and/or maintenance activities. The project may contribute to displacement of individuals, and increased potential for harassment of federally protected species, increased human presence leading to death or harm to individuals or collection, increased weeds and increased access to area by general public.

In addition to loss of habitat, any tortoise located onsite prior to construction would have to be moved to an appropriate adjacent area out of harm's way. In doing so, both the moved tortoises as well as the tortoises located on the recipient site may be affected. This effect could be minimized by moving tortoises within the current home range of tortoises cleared from the developed areas on-site. Tortoises might also be harmed by the maintenance and operation of the train, employee vehicles, and possibly private off road vehicles utilizing the maintenance road. The addition of transmission poles less than 50 feet in height may also increase predation by birds on juvenile tortoises.

Unique to this area is also the Large Scale Tortoise Translocation area located in Trout Canyon and to the north and east of the Proposed ROW, encompassing a majority of the rail corridor. The use of this Translocation area could introduce a higher number of desert tortoises to the Project Area than would otherwise normally be encountered, thus increasing the chances for an encounter.

Indirect effects from noise and vibration associated with construction activities could cause some tortoise to abandon their burrows and seek other existing cover sites. This would temporarily expose them to an increased risk of predation as they seek other burrows within their home range. In addition, desert tortoise mortality may result from increased human presence and construction-related traffic.

The Proposed Action may not result in adverse impacts to local or regional genetic connectivity of the desert tortoise population. A modeled connectivity area (least cost corridor) is located northwestern of the project area (Averill-Murray, Darst, Strout, & Wong, 2013). However, according to the same Averill-Murray study, approximately 123 acres of the Proposed Action could be considered a least cost corridor.

3.6.3.1.2 Mitigation Measures

Mitigation for desert tortoise would be addressed through measures outlined in the Biological Opinion and would be supported by the desert tortoise fees paid to the BLM.

The following plans would be prepared and implemented that would further reduce impacts to listed species:

- Worker Environmental Awareness Plan
- Desert Tortoise Translocation Plan
- Bird and Bat Conservation Strategy
- Raven Management Plan
- Integrated Weed Management Plan

In order to minimize habitat fragmentation impacts and address the possibility of a tortoise becoming trapped between the track rails, special tortoise crossings and escape routes are being incorporated into the project design (see Figure 29), as well as culverts (see Figure 30) approved by the Fish and Wildlife

Service and developed in coordination with the BLM resource specialists. The desert tortoise escape routes, or passages, will be areas between the constructed crossings where the soil between the rail ties is removed to allow a tortoise to walk under the rail and down the embankment. Spacing of the crossing areas and escape passages will be finalized based on discussions with the Fish and Wildlife Service and BLM.

Anti-perch devices will be utilized. The transmission lines will be Avian Power Line Interaction Committee (APLIC) compliant and a raven management plan will be developed.

Proposed Project actions will be minimized through a project specific Biological Opinion and is discussed in the Biological Assessment, Section 2.2 (BEC Environmental, Inc., July 2015). A Project-specific Biological Opinion will be issued that will include non-discretionary reasonable and prudent measures and terms and conditions to minimize take and be exempted from Section 9 of the ESA. Mitigation for birds would be addressed by the development and implementation of a Project-specific Bird and Bat Conservation Strategy.

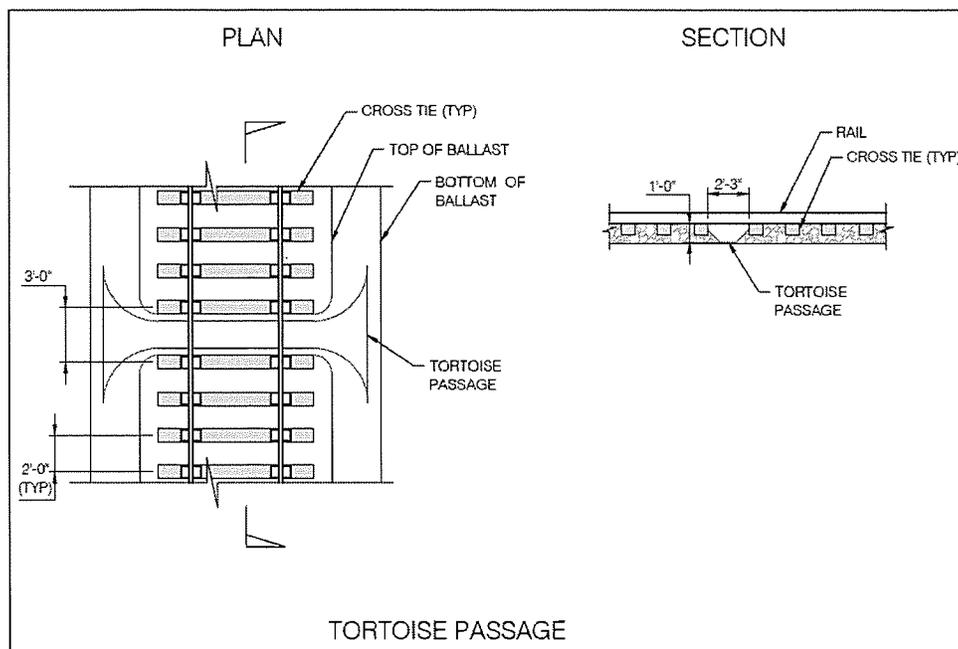


Figure 29. Preliminary design of the tortoise crossing and escape routes.

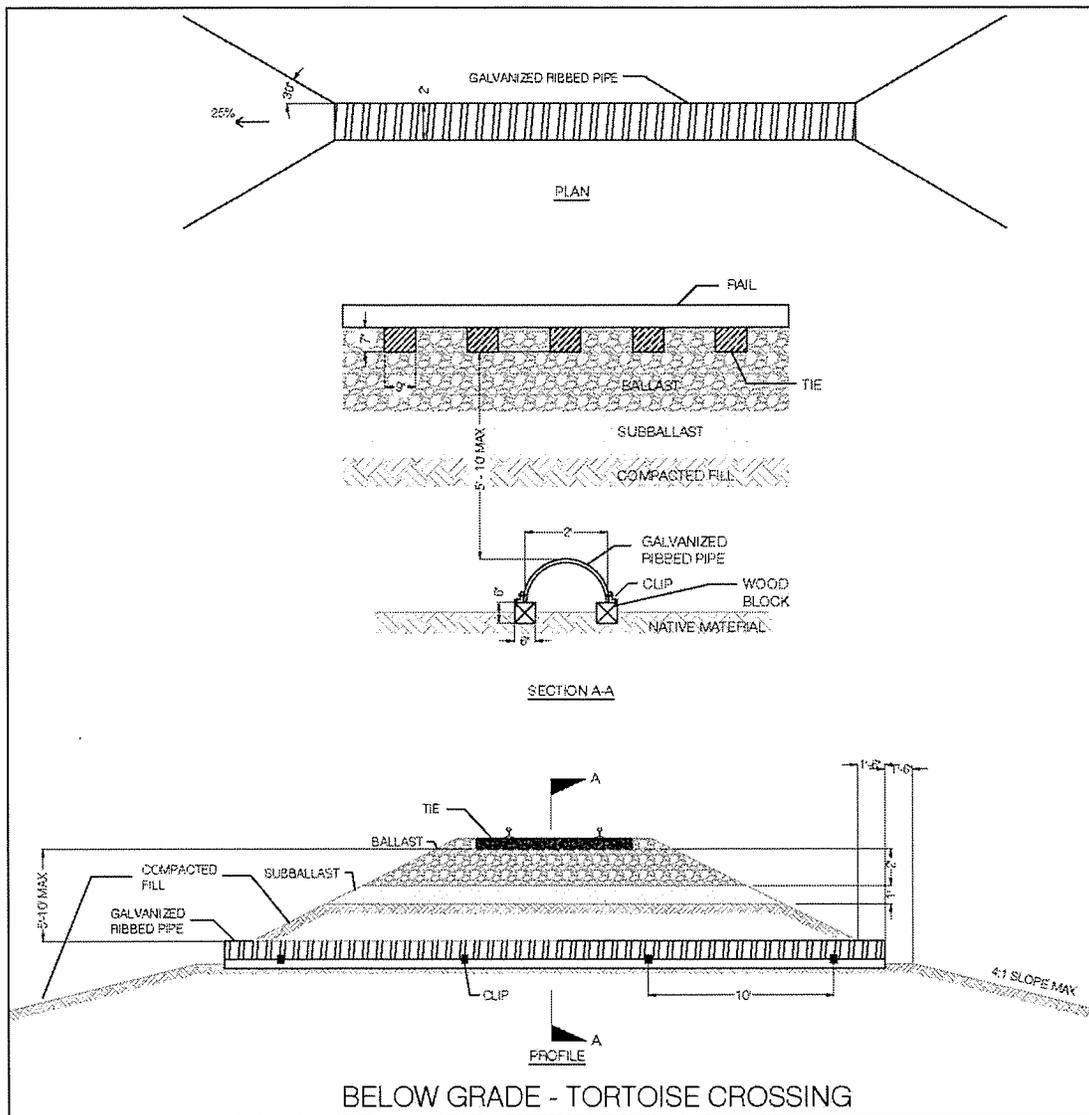


Figure 30. Proposed tortoise crossings under the rail alignment.

3.6.3.1.3 Residual Impacts

As proposed, the Proposed Action would disturb 170 acres of desert tortoise habitat; therefore, remuneration fees of \$143,310 are required as described below (BLM Southern Nevada District Office, 2014).

BLM shall collect remuneration fees to offset residual impacts to desert tortoises from project-related disturbance to desert tortoise habitat. The current rate is \$843 per acre of disturbance, as indexed for inflation, effective March 1, 2015. The next adjustment will become effective March 1, 2016.

3.6.3.1.4 Cumulative Impacts

The Proposed Action would have a long term impact on 72 acres of desert tortoise habitat. Additionally, the Project has the potential to impact translocated tortoises which have dispersed throughout and beyond the borders of the Trout Canyon Large Scale Translocation area. Desert tortoises found in the Project

ROW would not be translocated to other locations; tortoises encountered during construction would be moved out of harm's way in adjacent habitat by an Authorized Biologist.

Because habitat for the southwestern willow flycatcher and the yellow-billed cuckoo does not occur within or near the project area, the Proposed Action, in conjunction with other projects, would not contribute to cumulative impacts on habitat for these listed bird species.

The combined effects of the reasonably foreseeable future actions do have the potential to increase risk of mortality of individual animals within the cumulative impacts area.

3.6.3.2 Alternative

The Alternative differs from the Proposed Action in the specific location and configuration of the Operations and Support Facilities, and a slight lateral adjustment in the location of the southern end of the rail alignment. The amount of habitat potentially disturbed by the Alternative would be slightly smaller than for the Proposed Action. Surveys conducted in these areas for desert tortoises indicate the presence and relative abundance of tortoises in those areas are the same as those for the Proposed Action.

3.6.3.2.1 Direct and Indirect Effects

The direct and indirect effects of the Alternative on desert tortoises are expected to be the same as have been described for the Proposed Action, although a slightly smaller area would be affected by the Alternative.

3.6.3.2.2 Mitigation Measures

The same mitigation measures described for the Proposed Action would be implemented for the Alternative.

3.6.3.2.3 Residual Impacts

The potential residual impacts from the Alternative on desert tortoises after implementation of the mitigation measures would be the same as the impacts described for the Proposed Action.

3.6.3.2.4 Cumulative Impacts

The cumulative impacts that would result from implementing the Alternative would be similar to the cumulative impacts described for the Proposed Action.

3.6.3.3 No Action Alternative

3.6.3.3.1 Direct and Indirect Effects

Under the No Action Alternative, the Project ROW would be denied and the current conditions of the desert tortoises and tortoise habitat would continue unchanged. The land would remain available for future development or recreational use.

3.6.3.3.2 Cumulative Impacts

Because the No Action Alternative would result in no new direct or indirect impacts related to listed species, there would be no project-related cumulative impacts associated with the No Action Alternative.

3.7 Migratory Birds

3.7.1 Affected Environment

For the purpose of this EA, the term “migratory birds” applies generally to native bird species protected by the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-711). A list of the protected bird species can be found in 50 C.F.R. 10.13. Under the MBTA it is unlawful to take, kill, or possess migratory birds. Executive Order 13186 issued January 11, 2001, further defines the responsibilities of federal agencies to protect migratory birds. Additionally, bald eagles (*Haliaeetus leucocephalus*) and golden eagles are protected under both the MBTA and the Bald and Golden Eagle Protection Act. In addition to the MBTA Executive Order 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds, signed in January 2001) requires the BLM to evaluate the effects of federal actions on migratory birds. In addition, there is a Memorandum of Understanding between the BLM and USFWS to promote the conservation of migratory birds. The purpose of the Memorandum of Understanding is to strengthen migratory bird conservation by identifying and implementing strategies that promote conservation and avoid or minimize adverse impacts on migratory birds through enhanced collaboration between the two agencies, in coordination with state, tribal, and local governments.

To minimize unintentional take as defined by Executive Order 13186, the BLM has issued Washington Office Instruction Memo (IM) No. 2008-050, *Migratory Bird Treaty Act–Interim Management Guidance* (BLM 2008b) to provide interim guidance to meet the BLM responsibilities under the MBTA, and IM 2010-156 for the Bald and Golden Eagle Protection Act. This provides the BLM with a consistent approach for addressing migratory bird populations and habitats.

Table 3-4 BLM designated sensitive bird species.

Common Name	Species name	Nevada Status
Bald eagle	<i>Haliaeetus leucocephalus</i>	Endangered
Bendire’s thrasher	<i>Toxostoma bendirei</i>	Protected
Brewer’s sparrow	<i>Spizella breweri</i>	Sensitive
Ferruginous hawk	<i>Buteo regalis</i>	Protected
Golden eagle	<i>Aquila chrysaetos</i>	Protected
LeConte’s thrasher	<i>Toxostoma lecontei</i>	Protected
Lewis’s woodpecker	<i>Melanerpes lewis</i>	Protected
Loggerhead shrike	<i>Lanius ludovicianus</i>	Sensitive
Peregrine falcon	<i>Falco peregrines</i>	Endangered
Pinyon jay	<i>Gymnorhinus cyanocephalus</i>	Protected
Swainson’s hawk	<i>Buteo swainsoni</i>	Protected
Western burrowing owl	<i>Athene cunicularia</i>	Protected
Western snowy plover	<i>Charadrius alexandrinus nivosus</i>	Protected

3.7.2 Methodology

The analysis makes use of the best available data, and professional judgment. Correspondence with NDOW and NNHP for species potentially occurring in the area was reviewed. The analysis also compares elements and timing of the Proposed Action and the project area boundary with suitable habitat.

3.7.3 Environmental Consequences

3.7.3.1 Proposed Action

Migratory birds could be found in the Action Area as either seasonal residents or as migrants. Among the wide variety of species protected by the MBTA, special concern is usually given to the following groups:

- Species that migrate across long distances, particularly Neotropical migrant passerines that winter in tropical or Southern Hemisphere temperate zones.
- Birds of prey, which require large areas of suitable habitat for finding sufficient prey.
- Species that have narrow habitat tolerances and hence are vulnerable to extirpation from an area as a result of a relatively minor habitat loss.
- Species that nest colonially and hence are vulnerable to extirpation from an area and hence are vulnerable to extirpation from an area as a result of minor habitat loss.

The Proposed Action site is expected to exhibit species typical to the Mojave Desert, populations within which typically exhibit little variation seasonally. Songbirds, gamebirds, and pigeons/doves are likely to use the project area most frequently. It is unlikely the Action Area is located in a major passerine migratory route due to the harsh desert conditions. Thus, migratory species making stopovers in the area are unlikely to concentrate within the Action Area due to similar habitat being readily available throughout the region and more favorable habitat existing within the Ash Meadows National Wildlife Refuge, at Lake Mead National Recreation Area on the Colorado River, and even within the Town of Pahrump.

Common bird species that may be present in the vicinity of the proposed project site may include the Black-throated Sparrow, Turkey Vulture (*Cathartes aura*), Common Raven (*Corvus corax*), and Red-tailed Hawk (*Buteo jamaicensis*). Raptors have been observed in the area during botanical and tortoise field surveys; no raptor nests were observed during these surveys. No bird specific surveys were conducted.

NDOW reported various species of raptors may reside in the vicinity of the Proposed Action Area (September 5, 2013, letter). American kestrel (*Falco sparverius*), bald eagle (*Haliaeetus leucocephalus*), barn owl (*Tyto alba*), burrowing owl (*Athene cunicularia hypugaea*), Cooper's hawk (*Accipiter cooperi*), ferruginous hawk (*Buteo regalis*), flammulated owl (*Otus flammeolus*), golden eagle (*Aquila chrysaetos*), great horned owl (*Bubo virginianus*), long-eared owl (*Asio otus*), merlin (*Falco columbarius*), northern goshawk (*Accipiter gentilis*), northern harrier (*Circus cyaneus*), northern saw-whet owl (*Aegolius acadicus*), osprey (*Pandion haliaetus*), peregrine falcon (*Falco peregrinus*), red-tailed hawk (*Buteo jamaicensis*), rough-legged hawk (*Buteo lagopus*), sharp-shinned hawk (*Accipiter striatus*), short-eared owl (*Asio flammeus*), Swainson's hawk (*Buteo swainsoni*), and turkey vulture (*Cathartes aura*) have distribution ranges that include the Project Area and four-mile buffer area.

The ferruginous hawk is a BLM designated sensitive species in Nevada. The Proposed Action encompasses foraging habitat, but does not contain nesting habitat for ferruginous hawks.

A Nevada Department of Wildlife (NDOW) database query returned one result for a raptor nest, likely falcon, identified within ten miles of the Action Area; Section 24 of Township 20 South, Range 54 East, last recorded active in March 1975.

The following BLM sensitive bird species could potentially be impacted by the proposed action.

Western burrowing owl (*Athene cunicularia hypugaea*)

The Western burrowing owl is a diurnal bird of prey specialized for shrub-steppe habitats. Burrowing owl habitat in the Mojave Desert typically consists of open, dry, treeless areas on the desert floor. Burrowing owls most frequently use mammal burrows created by other animals such as ground squirrels (*Spermophilus* spp.), coyotes (*Canis latrans*), or desert tortoises (*Gopherus agassizii*). The burrows are used for nesting, roosting, cover, and caching prey. In recent decades, the range and species count have been declining primarily due to agricultural, industrial, and urban development that reduce burrow availability.

Bendire's thrasher (*Toxostoma bendirei*)

In Southern Nevada, Bendire's thrashers occur mostly in Joshua tree woodlands with dense grass, but they can also occur in desert scrub habitats with cholla or mesquite or in sagebrush with scattered junipers. They normally avoid dense woodlands and areas with very sparse vegetation. They typically nest in mesquite, cholla, juniper, Joshua trees, and other yucca species. Their population trend in Southern Nevada is unknown, but they are declining in other parts of their range.

LeConte's thrasher (*Toxostoma lecontei*)

LeConte's thrasher is a year-round resident in the Mojave Desert of Southern Nevada. In Nevada, they are associated with saltbush flats and wash systems and nest in cholla cactus, sagebrush, small trees, or shrubs. This thrasher prefers open habitats for foraging with sparse vegetation for cover and is a good indicator of habitat quality. Their population trend in Southern Nevada is unknown.

Loggerhead shrike (*Lanius ludovicianus*)

This species prefers open country with nesting habitat preference toward scattered trees and shrubs. They are commonly found in shrub habitat types comprising savanna, desert scrub, and occasionally, open woodland. Perches are an important habitat component used for hunting. If natural perches are unavailable, they will perch on poles, wires or fence posts. Population trend data in Nevada has shown an unexplained 5 percent decline per year since 1966.

3.7.3.1.1 Direct and Indirect Effects

Migratory birds in the project area may be disturbed and/or displaced through 98 acres of short term (construction) and 72 acres of long term (operations) habitat removal. Noise levels from construction equipment may impact migratory birds during the construction phase of the project. However, noise levels during operations will not increase existing noise levels for the area. Depending on the time of year for construction, operation, or maintenance, there is the potential to disturb nesting birds within or immediately adjacent to the proposed action. ARES must comply with the MBTA and avoid potential impacts to protected birds within the project area. Migratory birds within the vicinity of the Action Area would likely move into adjacent habitat due to disturbance, potentially competing with other individuals or individuals of other species, for foraging and nesting habitat. However, considering the size of the proposed disturbance (170 acres short-term), the presence of existing and nearby disturbance, location (as it relates to soils, vegetation and topography) of the project area, and abundance of adjacent habitat, impacts to migratory birds would be negligible.

Utility scale transmission lines have been hypothesized to negatively affect migratory bird populations both directly and indirectly. Direct effects can include actual bird strikes with the wires or habitat disturbance from tower placement. Specifically, warblers and vireos, family Parulidae and Vireonidae, respectively, were found to have the highest risk of collision with towers (Arnold & Zink, 2011). Most passerines (e.g. perching birds such as warblers and vireos) are short-lived and have high reproductive output, and their population growth rates are more sensitive to reproductive failure than to adult survival

(Arnold & Zink, 2011). Therefore, collision mortality for most passerine species is expected to have negligible effects on population dynamics.

The direct impacts of the proposed action on the identified bird species would be loss of nesting habitat and forage, mortality and harassment of individual animals, and decrease in habitat value of adjacent remaining "wildland" areas due to increased human activity and noise disturbance in the area. The species is protected by the Migratory Bird Treaty Act and the proponent will be required to adhere to mitigation measures for migratory birds.

3.7.3.1.2 Mitigation Measures

Habitat-altering projects or portions of projects should be scheduled outside of the bird breeding season which generally occurs between February 15th and August 31st. If a project has to occur during the breeding season, then a qualified biologist must survey the area for nests immediately prior to commencement of construction activities. This shall include burrowing and ground nesting species in addition to those nesting in vegetation. If any active nests are found, an appropriately-sized buffer area must be established and maintained until the young birds fledge. The buffer area must connect to suitable, undisturbed habitat. As the above dates are a general guideline, if active nest are observed outside this range they are to be avoided as described above.

Due to potential for electrocution, collision and nesting/perching by migratory birds on overhead power lines, the Proposed Project must 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.

Guy wires should not be used if practicable. If not practicable, all guy wires must be marked in sections over the entire line (flight diverters or markers) so they are visible to prevent injury/mortality to birds through collision.

Any lighting for on-ground facilities and equipment would be down-shielded to keep light within the boundaries of the site.

3.7.3.1.3 Residual

The Proposed Action could result in minor impacts on migratory birds, including the potential loss of habitat and increased risk of injury and mortality.

3.7.3.1.4 Cumulative Impacts

The Proposed Action, in conjunction with other projects, would result in cumulative impacts on migratory birds, including the potential loss of habitat and increased risk of injury and mortality. The combined effects of the reasonably foreseeable future actions have the potential to remove suitable migratory bird habitat and to increase risk of mortality of individual animals within the cumulative impacts area.

It is assumed that all reasonable foreseeable future development on BLM lands would be subject to the same design features and mitigation measures, which reduce the potential cumulative impacts to migratory birds. In addition, other reasonably foreseeable future actions may be required to prepare and implement a BBCS with monitoring and adaptive management in addition to complying with suggested APLIC BMPs.

3.7.3.2 Alternative

The specific location of Operations and Maintenance facilities for the Alternative varies slightly from the Proposed Action, and the alignment of the southern end of the rail line shifted a short distance, but the habitat in these areas is the same as described for the Proposed Action, including the list of bird species potentially encountered.

3.7.3.2.1 Direct and Indirect Effects

The potential effects of implementing the Alternative are the same as those described for the Proposed Action. The only difference is that the Alternative would impact a smaller amount of desert habitat, therefore potentially impacting fewer birds with the loss of that habitat.

3.7.3.2.2 Mitigation Measures

The mitigation measures to be implemented for the Proposed Action would be implemented for the Alternative.

3.7.3.2.3 Residual Impacts

The potential residual impacts on migratory birds from the Alternative would be essentially the same as those described for the Proposed Action.

3.7.3.2.4 Cumulative Impacts

The potential cumulative impacts of the Alternative would be similar to those described for the Proposed Action.

3.7.3.3 No Action Alternative

3.7.3.3.1 Direct and Indirect Effects

Under the No Action Alternative, the Project ROW would be denied and migratory birds would continue to be subject to existing conditions. The land would remain available for future development and ROW requests.

3.7.3.3.2 Cumulative Impacts

Because the No Action Alternative would result in no new direct or indirect impacts related to listed species, there would be no cumulative impacts other than the current impacts associated with the No Action Alternative.

3.8 Human Health and Safety

3.8.1 Affected Environment

The Project Area is located in an uninhabited, undeveloped region within Clark and Nye Counties, Nevada. The area is utilized for recreational purposes including dirt bike and four-wheeler riders, hikers, bikers, and horseback riders. The southernmost portion of the project is located within the Pahrump Regional Planning District (PRPD).

3.8.2 Methodology

The analysis makes use of the best available data, professional judgment, field observations, and review of operations and safety manuals.

3.8.3 Environmental Consequences

3.8.3.1 Proposed Action

There may be potential health and safety risks associated with this project. These risks can be mitigated with proper training and on site safety protocols.

The rail corridor discussed includes the rail line, an access road, an electricity regulation system (parallel overhead catenary transmission line), a mid-slope spur rail to be used as a turnout, and drainage management features.

The facilities area will include the ARES substation, a rail car maintenance building, and a modular-type crew and control building. It is anticipated potable water will be provided for staff as a standalone water dispenser (five gallon jug type). Sanitary water and waste facilities will be contained in holding tanks built into the modular buildings and supplied and serviced by commercial vendors. The facility would not include a buried septic system.

3.8.3.1.1 Direct and Indirect Effects

Descriptions of potential Human Health and Safety concerns are detailed below by category.

Construction Safety

There are potential health and safety risks commonly associated with construction activities. An emergency response and health and safety plan to cover various safety issues will be developed to meet or exceed the requirements of the U.S. Department of Labor and Occupational Safety and Health Administration (OSHA) standards.

For the safety of construction crews, drinking water will be imported and distributed daily. Portable toilets would be provided on site, likely in the planned facilities area. For worker safety, outdoor lighting would be installed around occupied buildings and within the ARES substation, and be designed to provide the minimum illumination needed to achieve safety and security objectives, and be directed downward and shielded to focus illumination on the desired areas.

At times during construction, public access must be controlled where particular hazards exist. Temporary fencing will be installed in these areas. Standard construction noise will be generated during the short period of construction.

Rail Corridor and Electric Shuttle Trains

The Carpenter Canyon Road crossing (see Figure 31) will include standard railway signage and flashing lights, while other less used established crossings will contain only warning signage. Loop Boundary road, at the northeast end of the rail corridor, will be rerouted for a short section (approximately 0.7 miles) to merge with the proposed trackside maintenance road to eliminate two rail crossings without impeding existing public land travel routes (see Figure 32), with only one remaining crossing. This will limit public rail crossings.

ARES will install a remote monitoring system at the facility to monitor the rail line as well as provide an on-site security officer to monitor the support facilities 24 hours a day, 365 days a year.

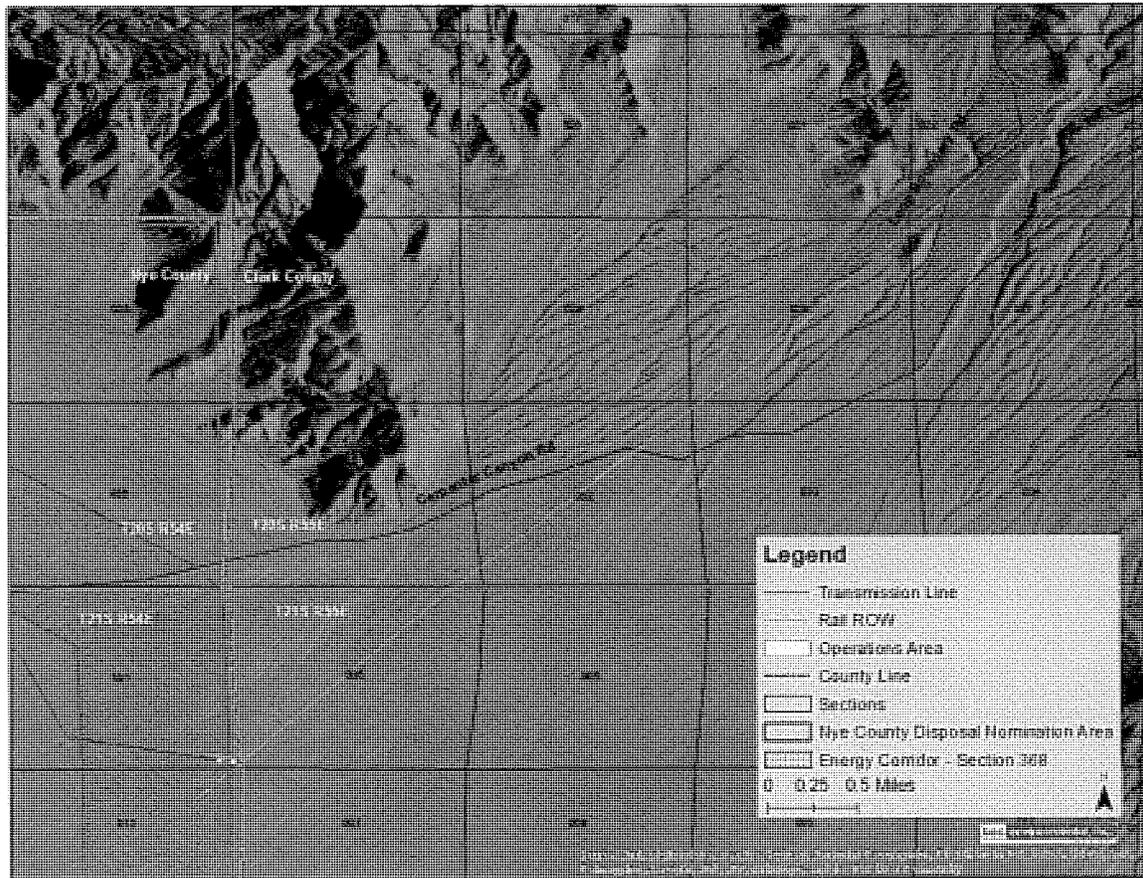


Figure 31. Locations of Carpenter Canyon Road and Loop Boundary Road within the Proposed Action Area.

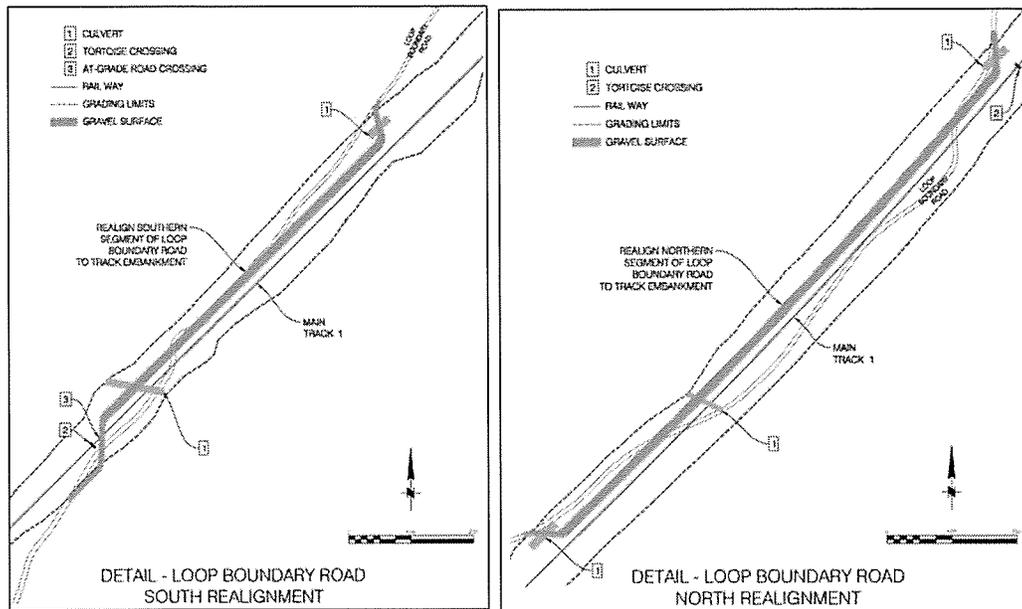


Figure 32. Realignment of Loop Boundary Road to reduce the number of required rail crossings from three to two.

Shuttle trains, each comprised of two electric locomotives and seven ballast cars, will ascend and descend the rail line at slow speeds. The shuttle trains travel an average speed of 18.8 mph (30.3 kilometers per hour), but not more than 25 mph (40 kilometers per hour), which is the speed limit in most residential neighborhoods and the recreational roads in the area. In comparison, a cantering horse lopes at a speed of 10 to 17 mph (16.1 to 27.4 kilometers per hour) (Horse Speed in MPH, 2005) and could outpace one of the proposed shuttle trains should it desire to do so.

Results of a study conducted by Dave Scott Consulting show that the Proposed Action will have noise levels comparable to a restaurant conversation, background music or an air conditioner. At no distance will ear protection be needed by personnel during the operation of the train cars and at a distance of 1,000 feet, the sound level is about that of a library, meaning sound will not be noticeable at Nevada State Highway 160, area neighborhoods, and will likely be drowned out by recreation vehicle noise on existing roads. During field surveys conducted of the area in April, May, September and October 2014, vehicle noise from the Pahrump Speedway was very evident.

The Federal Railroad Administration (FRA) implements federal environmental laws and policies related to the nation's railroads (FRA Environment).

Cheech Smialek, Chief Inspector, FRA Region 7, Sacramento, advised ARES in an email dated October 21, 2013, the Proposed Action would not conform to the basic definition of a "railroad," as defined by 49 CFR Part 209.

Railroad means any form of nonhighway ground transportation that runs on rails or electromagnetic guideways, including (i) commuter or other short-haul railroad passenger service in a metropolitan or suburban area and commuter railroad service that was operated by the Consolidated Rail Corporation on January 1, 1979; and (ii) high speed ground transportation systems that connect metropolitan areas, without regard to whether those systems use new

technologies not associated with traditional railroads; but does not include rapid transit operations in an urban area that are not connected to the general railroad system of transportation.

Smialek stated, "The prevailing regulation that would exempt your operation from our jurisdiction is found in 49 CFR Part 209... the operative phrase being, "general railroad system of transportation," which means that a candidate railroad must have access outside its operating area to other destinations. Secondly, the function is not "ground transportation," in that no goods or services are being moved.

While the Proposed Action may be exempt from FRA regulation, FRA Environmental Procedures provide some guidance relevant to safety measures which have been considered in preparing the projects Plan of Development (Federal Railroad Administration, 1999). Because the FRA health and safety regulations focus on the transportation of hazardous waste and actions to take in the event of a spill, they will not apply to the Proposed Action because no hazardous materials will be transported by the shuttle trains.

Operations, Control, and Maintenance Facilities

Buildings utilized for the operations, control, and maintenance facilities will meet or exceed the minimum requirements of codes adopted by Nye County and the PRPD. Codes effective within the PRPD include:

- 2006 International Building Code
- 2006 International Energy Conservation Code
- 2006 Uniform Plumbing Code
- 2006 Uniform Mechanical Code
- 2006 International Property maintenance Code
- 2005 National Electric Code
- 2006 International Fire Code

Sanitary water and waste facilities will be provided for operations personnel. Water and wastewater will be contained in holding tanks built into the modular buildings and supplied and serviced by commercial vendors. The facility would not include a buried septic system. Potable water would be provided through a commercial bottled water service. Fire suppression capabilities within the operations and maintenance buildings will be constructed in accordance with the 2006 International Fire Code. The nature of that suppression system has not yet been determined. The Pahrump Valley Fire and Rescue Department (Department) provides fire protection, rescue and ambulance services to the Pahrump Valley. The Operations, Control, and Maintenance Facilities lie within the jurisdiction served by the Department. The BLM fire station located on Carpenter Canyon Road, 21S 54E, Section 2, NW Quarter, may be able to provide support in cooperation with the Department, in the event of a wildfire. ARES will confer with these agencies to develop a comprehensive emergency response plan.

230 kV Transmission Line

A new 230 kilovolt (kV) transmission line will be constructed and operated by VEA to connect the Proposed Project to the regional electrical grid. The interconnection will include a substation, a gen-tie connecting the substation to the existing VEA 230kV transmission line, upgrading of the existing VEA 230kV transmission line to support the facility, two new transmission lines to connect the existing VEA 230kV transmission line to the Gamebird Switch Station, removal of the section of VEA transmission line currently bypassing the Gamebird Switch Station, and construction of a new switch yard at the existing VEA Gamebird Switch Station.

3.8.3.1.2 Mitigation Measures

All applicable safety and management plans for the operation, control, and maintenance of all components will be developed and followed. A health and safety program will be developed to protect both workers and the general public during construction, operation, and decommissioning. The program should identify all applicable Federal and state occupational safety standards, establish safe work practices for each task (e.g., requirements for personal protective equipment and safety harnesses, Occupational Safety and Health Administration [OSHA] standard practices, measures for reducing occupational electromagnetic field [EMF] exposures), and define safety performance standards (e.g., electrical system standards). The program will include a training program to identify hazard training requirements for workers for each task and establish procedures for providing required training to all workers. Documentation of training and a mechanism for reporting serious accidents to appropriate agencies should be established.

ARES will develop a comprehensive emergency plan that considers the vulnerabilities of the Proposed Project to credible events initiated by natural causes (earthquakes, avalanches, floods, high winds, violent storms, etc.), human error, mechanical failure, cyber attack, or sabotage, and the potential for and possible consequences of those events.

The track and roadway will be inspected daily, possibly employing robotic equipment that can work 24 hours a day, seven days a week, without direct manual control. The inspection criteria will be, at a minimum, based on Title 49 CRF 213 Track Safety Standards as published in the Federal Register (latest), supplemented by recommendations of the International Heavy Haul Association (IHHA) and in-house developed criteria based on best practices from a world-wide network of specialized, heavy-haul railroad operations. There will be an internal process for automatic evaluation of inspection results data, tied into a system to generate work orders that will direct the Maintenance of Way (MOW) Department to repair or replace any defective guideway elements. The MOW Department will operate on a proactive basis to minimize the possibility of guideway components slipping below the State of Good Repair, by grinding rail, correcting surface anomalies, ultrasound testing of rail, etc., based on the inspection data and a planning forecast program that prevents any serious exceptions from developing.

The design, construction, operation, and maintenance of the 230 kV transmission line would meet or exceed the requirements of the National Electrical Safety Code (NESC), U.S. Department of Labor, OSHA, California Independent System Operator, Federal Energy Regulatory Commission, and VEA's requirements for safety and protection of landowners and their property.

The Proposed Project will comply with FAA regulations, including lighting regulations.

ARES will develop a fire management strategy to implement measures to minimize the potential for a human-caused fire during project construction, operation, and decommissioning. The strategy should clarify who has responsibility for fire suppression and hazardous fuels reduction, if necessary.

Any wastewater generated on site in association with temporary, portable sanitary facilities will be periodically removed on a schedule approved by the BLM, by a licensed hauler, and introduced into an existing municipal sewage treatment facility.

Construction activity is planned to limit noisy activities to the least noise-sensitive times of day (i.e., daytime only between 7 a.m. and 7 p.m. week days).

3.8.3.1.3 Residual

Impacts caused by the Proposed Action would not result in an adverse residual health or human safety impacts in part because the Proposed Project would be required to adhere to the robust body of regulations that govern worker health and safety. These laws and other requirements have been adopted with cumulative safety considerations in mind and to be sufficiently protective of human health and safety.

3.8.3.1.4 Cumulative Impacts

Impacts caused by the projects in the cumulative scenario, combined with the Proposed Action, would not result in adverse cumulative impacts even if all of the projects were to be constructed simultaneously, in part because all projects would be required to adhere to federal, state, county, and local regulations. These laws and other requirements have been adopted with cumulative safety considerations in mind and to be sufficiently protective of human health and safety under cumulative conditions.

Cumulative impact could occur if there were a significant increase in recreational vehicle traffic on the area dirt roads, which would increase the number of public encounters with the train.

3.8.3.2 Alternative

The Alternative is designed and would be constructed using the same guidelines and processes described for the Proposed Action, despite slight variations in the location of the facilities and the southern end of the alignment. None of these changes alter how the project will interface with the public or public facilities such as roads

3.8.3.2.1 Direct and Indirect Effects

The potential direct and indirect effects of construction and operation of the Alternative would be the same as those identified and described for the Proposed Action.

3.8.3.2.2 Mitigation Measures

The mitigation measures to be implemented for the Alternative are the same as those that would be implemented for the Proposed Action.

3.8.3.2.3 Residual

The residual impacts of the Alternative would be the same as those described for the Proposed Action.

3.8.3.2.4 Cumulative Impacts

The cumulative impacts from implementing the Alternative would be the same as those described for the Proposed Action.

3.8.3.3 No Action Alternative on Human Health and Safety

3.8.3.3.1 Direct and Indirect Effects

Under the No Action Alternative, the Project Areas would remain unchanged, although VEA has long term plans to modify the existing 230kV transmission line connection to Gamebird Switch Station in the manner described under the Proposed Action.

3.8.3.3.2 Cumulative Impacts

Because the No Action Alternative would result in no direct or indirect impacts related to human health and safety, there would be no cumulative impacts associated with the No Action Alternative.

3.9 Hydrologic Conditions

3.9.1 Affected Environment

The project area is located in the Pahrump Valley area, in Hydrographic Basin 162 (504,960 acres). There are no perennial streams within the project area; there are a number of ephemeral washes (see Figure 26). Flow in the ephemeral washes can be substantial during rainfall events or spring snow melt, and may result in flash flooding in the washes and floodplains. Water resources within the project area are managed under the authority of the Federal Clean Water Act, as amended (33 USC 1251 et seq.) and Chapter 445A of the NRS.

3.9.2 Methodology

The analysis makes use of the best available data, professional judgment and field observations.

3.9.3 Environmental Consequences

3.9.3.1 Proposed Action

3.9.3.1.1 Direct and Indirect Effects

The Proposed Action has the potential to permanently impact 72 acres and temporarily impact 98 acres through ground disturbing activities. Development of the project area may alter groundwater recharge, ecological habitats, and ephemeral stream channels that can impact flooding and debris flow during storms.

The Proposed Action would utilize culverts (see Figure 26) to avoid changing drainage patterns or impeding or redirecting flood flows outside of existing flow channels. Sediment levels would not be increased to any measurable degree during runoff events due to this. All runoff from this area currently drains into Nevada Department of Transportation drainage features installed on Nevada State Highway 160.

3.9.3.1.2 Mitigation Measures

A Site Drainage Plan, a Stormwater Pollution Prevention Plan (SWPPP), and best management practices (BMPs) will be developed and utilized. Implementation of measures identified in a SWPPP would reduce impacts to hydrologic conditions. Culverts will allow current flow patterns to remain while allowing the train to travel as necessary to achieve the energy storage goal. Runoff from the facilities area will be minimized through best management practices, such as the use of gravel for vehicle areas and allowing natural vegetation to grow where it does not interfere with operations.

ARES will implement erosion controls complying with county, state, and Federal standards, such as jute netting, silt fences, and check dams, and will secure all necessary stormwater pollution prevention plan permits.

ARES will minimize ephemeral wash crossings by access roads and rail tracks to the extent practicable. All structures crossing intermittent streams will be located and constructed so the structures do not decrease channel stability, or increase water velocity.

ARES will not alter existing drainage systems and will give particular care to sensitive areas such as erodible soils or steep slopes. Soil erosion shall be reduced at culvert outlets by appropriate structures. Catch basins, roadway ditches, and culverts will be cleaned and maintained.

3.9.3.1.3 Residual Impacts

Through the use of the Site Drainage Plan, the SWPPP, and the BMPs, no increases in sediment load are anticipated in the runoff from the alluvial fan. Redirecting of existing flow patterns will be avoided to the extent possible. Since the project will not increase the amount of runoff in this area, any impacts to runoff will be negligible before flows encounter the established drainage features at Nevada State Highway 160. Due to these features, no impacts to populated areas of the Town of Pahrump are expected.

3.9.3.1.4 Cumulative Impacts

The Proposed Project would result in new disturbance of up to 170 acres. The project, in combination with other past, present, and reasonably foreseeable future actions in Hydrographic Basin 162 could contribute to cumulative increases in erosion and sedimentation.

3.9.3.2 Alternative

3.9.3.2.1 Direct and Indirect Effects

The location and configuration of the majority of the Alternative are similar to the Proposed Action, generally crossing the same washes and resulting in the same impacts to the drainage patterns in the area (See Figure 27). The location of the Operations and Maintenance facilities would require different size and location of culverts compared to the Proposed Action, but like the Proposed Action, the exact dimensions and location of those culverts would be established during the detailed design. However, the potential impacts of the project on hydrological resources in the area would be essentially the same as those described for the Proposed Action

3.9.3.2.2 Mitigation Measures

The mitigation measures for hydrologic resources described for the Proposed Action would be the same as those implemented for the Alternative.

3.9.3.2.3 Residual Impacts

The residual impacts of implementing the Alternative would be the same as those described for the Proposed Action.

3.9.3.2.4 Cumulative Impacts

The potential cumulative impacts from implementing the Alternative would be the same as those described for the Proposed Action.

3.9.3.3 No Action Alternative

3.9.3.3.1 Direct and Indirect Effects

Under the No Action Alternative, the Project ROW would be denied and hydrologic conditions would be unchanged. The Land would remain available for future development. Hydrologic conditions would continue to be impacted only by current water uses and conditions.

3.9.3.3.2 Cumulative Impacts

Because the No Action Alternative would result in no direct or indirect impacts to hydrologic conditions in the area, the existing cumulative impacts would remain unchanged.

3.10 Land Use Authorizations

3.10.1 Affected Environment

Land uses throughout the project area consist of undeveloped land, transmission lines, and recreational and U.S. Forest Service access roads. Surrounding land uses include a BLM fire station, a future Nevada System of Higher Education development site, transmission, Section 368 Energy Corridor (Section 368 of the Energy Policy Act of 2005, 42 U.S.C. § 15926), Nevada State Highway 160 Seed Collection Area, the Pahrump Speedway, and an approximately 54 acre sand and gravel quarry.

3.10.2 Methodology

The analysis makes use of the best available data, including information available in the BLM LR2000 Database, review of existing regulatory documents, maps and satellite imagery, professional judgment and field observations.

3.10.3 Environmental Consequences

3.10.3.1 Proposed Action

3.10.3.1.1 Direct and Indirect Effects

Approximately 57.5 acres of Project ROW would no longer be available for other public land uses (the 14.5 acres of trackside access and maintenance roads would be open to public use) if the Proposed Action is implemented. The existing Loop Boundary Road will be modified (merged with the trackside maintenance road for approximately 0.7 miles to reduce the required public rail crossings from three to one, without impeding existing public land travel routes), but all other existing roads in the area will be left as-is, with the exception of Carpenter Canyon Road, which will have a rail safety crossing installed, and existing transmission maintenance roads which will be upgraded to accommodate construction traffic.

The Proposed Action includes the construction of approximately 3,793 feet of new transmission interconnection, approximately 517 feet of main rail line, 1,085 feet of maintenance and spur rail line, and 3,955 feet of access road within the designated Section 368 Energy Corridor.

The Section 368 Energy Corridors may be used for siting linear facilities such as electricity transmission and distribution projects. Proposed projects should be compatible with identified energy transport modes and avoid conflicts with other land uses within a corridor. Any proposed development within Section 368 Energy Corridors must be consistent with the 2009 West-wide Energy Corridor Programmatic Environmental Impact Statement Record of Decision (2009), Settlement Agreement (Wilderness Society, et al. v. U.S. Department of Interior, No. 3:09-cv-03048 JW, filed July 03, 2012), and BLM's policy on Section 368 Energy Corridors provided under Instructional Memorandum 2014-080.

The Proposed Action is located within the Highway 160 Seed Collection Area.

A 2014 National Defense Authorization Bill designated parcel of land to be sold to the Nevada System of Higher Education is located along the transmission upgrade corridor (see Figure 33). This Congressionally designated land transfer already includes a portion of Carpenter Canyon Road and existing VEA transmission; the land is adjacent to a BLM fire station.

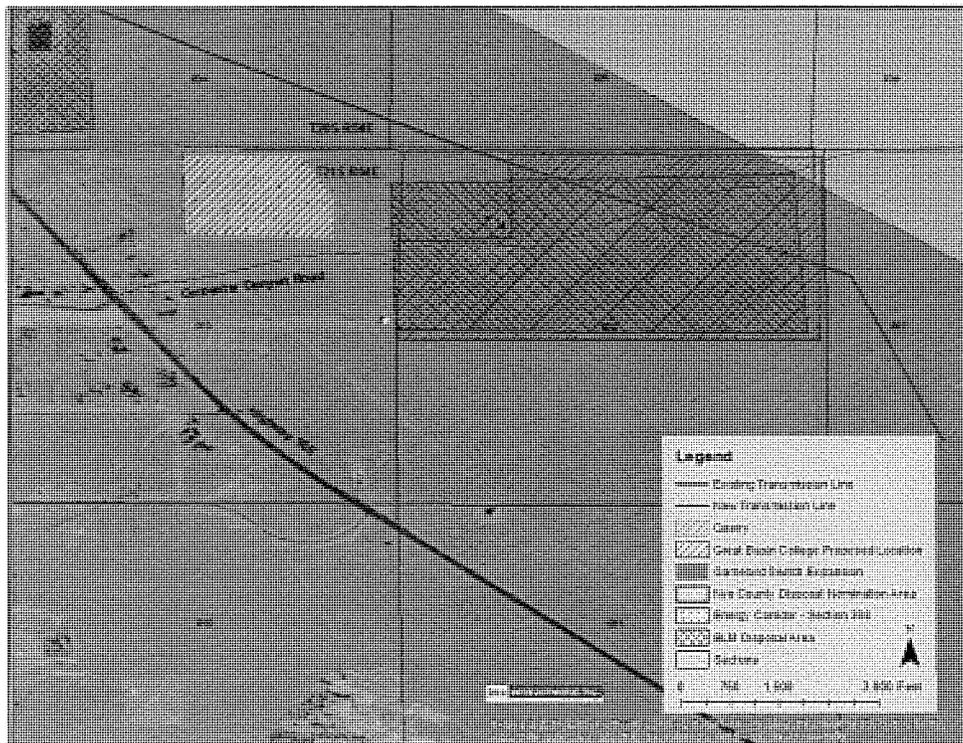


Figure 33. Location of the designated land transfer in relation to the existing VEA transmission line to be upgraded and Gamebird Switch Station.

3.10.3.1.2 Mitigation Measures

Interagency Operating Procedures state corridors are to be efficiently used. The applicant, assisted by the appropriate agency, shall consolidate the proposed infrastructure, such as access roads, wherever possible and utilize existing roads to the maximum extent feasible, minimizing the number, lengths, and widths of roads, construction support areas, and borrow areas.

The Proposed Action may require coordination with the BLM to modify infrastructure to ensure it is compatible with the purpose of the corridor. Where design modifications are insufficient to reduce conflicts of the proposed transmission line and rail line with future uses of the Section 368 Energy Corridor (if required), ARES will work further with BLM to find an acceptable compromise without violating federal statutes.

3.10.3.1.3 Residual Impacts

The Proposed Action will result in the Highway 160 Seed Collection Area being reduced by 72 acres.

Infrastructure would be constructed within the Section 368 Energy Corridor. Coordination with other agencies and companies may be required in the future if energy related infrastructure development is planned for the corridor.

ARES will work with the Nevada System of Higher Education and VEA early in the process of any proposed development for the land parcel to ensure Nevada System of Higher Education, VEA, and ARES planning objectives are met.

3.10.3.1.4 Cumulative Impacts

The Proposed Project would remove 72 acres of land from future uses and designations.

There may be some interactions with nearby planned projects, such as the Great Basin College, proposed beltway and truck route, and the proposed Public Safety Center if and when they developed. Those impacts will vary depending on the speed and order with which they are developed.

3.10.3.2 Alternative

3.10.3.2.1 Direct and Indirect Effects

For the Alternative, 55.5 acres of land no longer available for other public land uses (the 14.5 acres of trackside access and maintenance roads would be open to public use). As with the Proposed Action, existing Loop Boundary Road will be modified (merged with the trackside maintenance road for approximately 0.7 miles to reduce the required public rail crossings from three to one, without impeding existing public land travel routes), but all other existing roads in the area will be left as-is, with the exception of Carpenter Canyon Road, which will have a rail safety crossing installed, and existing transmission maintenance roads which will be upgraded to accommodate construction traffic.

As with the Proposed Action, the Alternative includes the construction of approximately 3,712 feet of new transmission interconnection, approximately 910 feet of main rail line, 605 feet of maintenance and spur rail line, and 3,720 feet of access road, within or adjacent to the designated Section 368 Energy Corridor. Unlike the Proposed Action, for the Alternative, the ARES substation, the shuttle car maintenance building, and the operations buildings would be constructed within the Section 368 Energy Corridor.

Section 368 Energy Corridors may be used for siting linear facilities such as electricity transmission and distribution projects. Proposed projects should be compatible with identified energy transport modes and avoid conflicts with other land uses within a corridor. Any proposed development within Section 368 Energy Corridors must be consistent with the 2009 West-wide Energy Corridor Programmatic Environmental Impact Statement Record of Decision (2009), Settlement Agreement (Wilderness Society, et al. v. U.S. Department of Interior, No. 3:09-cv-03048 JW, filed July 03, 2012), and BLM's policy on Section 368 Energy Corridors provided under Instructional Memorandum 2014-080.

All other Land Use impacts from the implementation of the Alternative would be the same as described for the Proposed Action. Mitigation Measures

Interagency Operating Procedures state corridors are to be efficiently used. The applicant, assisted by the appropriate agency, shall consolidate the proposed infrastructure, such as access roads, wherever possible and utilize existing roads to the maximum extent feasible, minimizing the number, lengths, and widths of roads, construction support areas, and borrow areas.

The Proposed Action may require coordination with the BLM to modify infrastructure to ensure it is compatible with the purpose of the corridor. Where design modifications are insufficient to move infrastructure outside the Section 368 Energy Corridor boundary (if required), ARES will work with BLM to find an acceptable compromise without violating federal statutes.

3.10.3.2.2 Residual Impacts

The Proposed Action will result in the Highway 160 Seed Collection Area being reduced by 70 acres.

Infrastructure would be constructed within the Section 368 Energy Corridor. Coordination with other agencies and companies may be required in the future if energy related infrastructure development is planned for the corridor.

ARES will work with the Nevada System of Higher Education and VEA early in the process of any proposed development for the land parcel to ensure Nevada System of Higher Education, VEA, and ARES planning objectives are met.

3.10.3.2.3 Cumulative Impacts

Cumulate impacts from implementation of the Alternative would be the same as those described for the Proposed Action.

3.10.3.3 No Action Alternative

3.10.3.3.1 Direct and Indirect Effects

Under the No Action Alternative, BLM would deny the Project ROW and the land would remain available for other uses. There would be no residual impacts to any roads or other projects that may be built on or near the Project site.

3.10.3.3.2 Cumulative Impacts

Because the No Action Alternative would result in no direct or indirect impacts related to human health and safety, there would be no cumulative impacts associated with the No Action Alternative. No additional jobs or tax base would be created.

3.11 Geology and Mineral Resources

This section provides an overview of the geologic conditions that occur within the proposed project area to assist in identifying the possible effects of the Proposed Action.

3.11.1 Affected Environment

The site is located in the Pahrump Valley, which lies in the southwestern portion of the Great Basin, within the Basin and Range physiographic province. The Pahrump Valley is a horst and graben system, typical of the Basin and Range Physiographic Province. The valley was formed as extensional forces in the Tertiary Period pulled apart the existing carbonate bedrock. As the bounding mountains were pulled away from each other, the central block was forced down, eventually forming a deep linear depression. As sediments eroded off the surrounding mountains, they filled this depression to several thousand feet, burying the ancient carbonates and creating the modern alluvial fan and valley floor.

Deposits in the Pahrump Valley are mainly Tertiary age (from 67 million to 2 million years old) and Quaternary Age (from 2 million years old to present). These deposits are comprised of unconsolidated sediments derived from the surrounding uplifted mountain ranges, which, in the vicinity of Carpenter Canyon area, are mainly Cambrian rock formations (comprised of dolomite and limestone) and late Precambrian formations (comprised of quartzitic sandstone, siltstone, micaceous shale, and marble).

Minerals found on BLM-managed lands, or that are under BLM management, fall within three categories: Leasable minerals, locatable minerals, and saleable minerals (also referred to as mineral materials). Leasable minerals are divided into fluid and solid. Fluid leasables include oil, gas, and geothermal resources. Solid leasables include coal, phosphate, potash, and sodium. Locatable minerals include hard-rock minerals such as gold, silver, and other minerals found in specific deposit locations. Saleable

minerals include materials commonly used in building and construction projects. These include sand, gravel, stone, clay, etc (BLM Southern Nevada District Office, 2014).

The General Mining Law of 1872, as amended, opened public lands of the United States to mineral acquisition by the location and maintenance of mining claims. Mineral deposits subject to acquisition in this manner are generally referred to as “locatable minerals.” The BLM LR2000 database indicates there are no mining claims, mineral claims, or mineral leases in the project area.

Mineral materials within the project area are public property and administered by the BLM under the regulations at 43 CFR 3600 (Mineral Materials Disposal) and the Federal Aid to Highway Act. Mineral materials are authorized for disposal by the Las Vegas RMP and Final Environmental Impact Statement (October, 1998). The regulations at 43 CFR 3600 establish procedures for the exploration, development, and disposal of mineral material resources on the public lands, and for the protection of the resources and the environment. The regulations apply to free use permits and contracts for sale of mineral materials. The sale, free use or issuance of a material site right-of-way for mineral materials must be in conformance with the RMP, Minerals Management Section (Code MN), the Federal Aid to Highway Act and the regulations found at 43 CFR 3600. Any mineral materials extracted, severed or removed from public lands without a contract, free use permit or material site right-of-way constitutes unauthorized use. Unauthorized users are liable for damages to the United States, and are subject to prosecution for such unlawful acts (BLM Southern Nevada District Office, 2014).

There are no active, pending, or expired mining Plans of Operation or Notices, or active or pending sodium, potassium prospecting, or mineral material permits in the area of the Proposed Action.

3.11.2 Methodology

The analysis makes use of the best available data (the BLM LR2000), and the professional judgment of geology specialists. The analysis also compared an overlay of the project area with active mining claims and leases.

3.11.3 Environmental Consequences

3.11.3.1 Proposed Action

3.11.3.1.1 Direct and Indirect Effects

No active mining claims are present within the Proposed Action area.

Excavation in the project area may result in the production of mineral materials, such as sand and gravel for railbed construction. These mineral materials will be used within the right-of-way or stockpiled within the right-of-way for future use at this or another location. If mineral materials are to be stockpiled within the right-of-way for future use, they must be obtained in accordance with the regulations found at 43 CFR 3600 or under the Federal Aid to Highways Act in the form of a contract, free use permit or material site right-of-way before they can be removed from the right-of-way.

If a contract, free use permit or material site right-of-way is necessary for the export of excess mineral materials, the BLM will issue the required contract, free use permit or material site right-of-way so long as it falls within the analyzed area.

3.11.3.1.2 Mitigation Measures

Mitigation measures will be developed in coordination with the BLM as necessary.

3.11.3.1.3 Residual Impacts

Because the Proposed Action is not expected to result in impacts to geology and mineral resources, there would be no residual impacts.

3.11.3.1.4 Cumulative Impacts

Contributions to cumulative impacts would be limited to future plans for mineral development; there are no pending claims within the Action Area.

Because the Proposed Action would not result in impacts to geology and mineral resources, there would be no contribution to cumulative impacts.

3.11.3.2 Alternative

3.11.3.2.1 Direct and Indirect Effects

No active mining claims are present within the Alternative area. The potential effects on geology and mineral resources from implementing the Alternative are the same as were described for the Proposed Action.

3.11.3.2.2 Mitigation Measures

Mitigation measures to be implemented for the Proposed Action would be implemented for the Alternative.

3.11.3.2.3 Residual Impacts

Because the Proposed Action would not result in impacts to geology and mineral resources, there would be no residual impacts.

3.11.3.2.4 Cumulative Impacts

The potential cumulative impacts of the Alternative would be the same as described for the Proposed Action.

3.11.3.3 No Action Alternative

Under the No Action Alternative, the Project ROW would be denied and the Proposed Action would not take place. The area would remain open to future claims and leases.

3.11.3.3.1 Direct and Indirect Effects

Under the No Action Alternative, the Project ROW would be denied, the Project would not take place, and geology and minerals at the site would not be either directly or indirectly impacted. The project area would remain available for future minerals claims requests or development.

3.11.3.3.2 Cumulative Impacts

Because the No Action Alternative would result in no direct or indirect impacts related to geology or minerals, there would be no new cumulative impacts associated with the No Action Alternative.

3.12 Recreation

The BLM manages recreation on public lands by identifying Special Recreation Management Areas (SRMAs). SRMAs have a distinct recreation market and corresponding management strategy. BLM managed public lands not delineated as SRMAs are managed as Extensive Recreation Management Areas (ERMAs) and do not require a specific management strategy or activity-level planning, but emphasize dispersed and diverse recreation opportunities.

3.12.1 Affected Environment

The Project Area offers limited potential for recreation opportunities. Although there are no developed recreation sites within the Project Area, roads and trails are used for dispersed recreation on a limited basis. The predominant recreation activities would be hunting access to the Spring Mountains and casual OHV use.

3.12.2 Methodology

Recreation use data were not collected for the area, or for this portion of the Southern Nevada ERMA. The analysis makes use of the best available data, professional judgment and field observations to identify specific recreational trends and opportunities in the project area and on nearby lands. The analysis also compares the project area boundary with known routes accessing the Spring Mountains.

3.12.3 Environmental Consequences

3.12.3.1 Proposed Action

3.12.3.1.1 Direct and Indirect Effects

Only the facilities area would be fenced and closed to public use. This would result in the long term loss of approximately 0.8 acres of public land currently available for dispersed recreation activities. Based on the acreage of this area, and the available surrounding land, this would be a negligible impact.

Access to the Spring Mountains via Carpenter Canyon Road may be impacted during construction; equipment deliveries and movement could create delays for public users. The road will remain open to the public once construction is complete. One rail crossing will be added, which will include flashing lights and standard railroad signs. All other crossings will have standard signage only. During operation, the train may pause at this crossing, causing public travel to be delayed.

Loop Boundary road, at the northeast end of the rail corridor, will be rerouted for a short section (approximately 0.7 miles) to merge with the proposed trackside maintenance road to eliminate two rail crossings without impeding existing public land travel routes (see Figure 32 in Section 3.8.3.1.1). This will limit public rail crossings and potential issues. As with Carpenter Canyon Road, the train may pause at this crossing, causing public travel to be delayed.

3.12.3.1.2 Mitigation Measures

Delays to public travel would be limited in frequency and duration. The exact impact has not yet been determined but will be described in future Plan of Development updates submitted to the BLM for approval.

3.12.3.1.3 Residual Impacts

The Project Area has limited opportunities for dispersed recreation, and development would not result in the displacement of recreation.

3.12.3.1.4 Cumulative Impacts

Other developments on free use public lands, such as the proposed Nevada System of Higher Education Great Basin College Campus development, would contribute to the loss of currently available public lands for dispersed recreation through land closures and route access restrictions. However, the Action Area has limited opportunities for dispersed recreation, and development would not result in the displacement of recreation. Other reasonably foreseeable future actions would have similar impacts, since they would also be located in areas providing limited opportunities for recreation.

3.12.3.2 Alternative

3.12.3.2.1 Direct and Indirect Effects

The effects of the Alternative on recreation would be the same as those described for the Proposed Action.

3.12.3.2.2 Mitigation Measures

Mitigation measures developed and implemented for the Proposed Action would be implemented for the Alternative.

3.12.3.2.3 Residual Impacts

Residual impacts from implementing the Alternative would be the same as described for the Proposed Action.

3.12.3.2.4 Cumulative Impacts

The cumulative impacts from implementing the Alternative would be the same as described for the Proposed Action.

3.12.3.3 No Action Alternative

3.12.3.3.1 Direct and Indirect Effects

Under the No Action Alternative, the Project ROW would be denied and recreation opportunities and access would continue to be managed consistent with the objectives of the Southern Nevada ERMA, in the BLM Las Vegas RMP. The land would remain available for future development.

3.12.3.3.2 Cumulative Impacts

Because the No Action Alternative would result in no direct or indirect impacts related to human health and safety, there would be no cumulative impacts associated with the No Action Alternative.

3.13 Socioeconomic Values

“Management of BLM lands within the planning area has and will continue to have important social implications for many individuals and groups. This includes local residents that depend on development activities on BLM lands as a source of employment, income, or subsistence” (BLM Southern Nevada District Office, 2014). This socioeconomic analysis provides an overview of the human environment and resources in the vicinity of the project area, including the population and demographics, economic characteristics, and social infrastructure (housing, schools, and other facilities) that could be affected by the construction and operation of the Proposed Project.

3.13.1 Affected Environment

Although the project is located in both Nye and Clark Counties, the socioeconomic impacts are anticipated mainly in the Town of Pahrump. The project is geographically isolated from the population of Clark County by the Spring Mountains and an approximate 26 mile drive along Nevada State Highway 160 from the project site to the one of the nearest population centers in Clark County, Mountain Springs, Nevada.

The Town of Pahrump is the population center of Nye County, located at the southernmost tip of the County, situated between the City of Las Vegas, approximately 60 miles away, and the California border. Demographics for the Town are included in Table 3-5.

Table 3-5 Demographics for the Town of Pahrump

Sector	Pahrump	Nye County	Nevada	United States
Population ¹	36,583	43,946	2,700,551	308,745,538
Unemployment ²	22.1%	18.0%	13.7%	9.6%
Poverty Rate ³	21.9%	21.5%	13.0%	14.3%
Percent Minority ¹	13.8%	14.1%	33.8%	26.7%
Per Capita Income ³	21,262	21,340	26,520	26,530

¹Data is from the 2010 U.S. Census data and is available at www.census.gov.

²Data for Nye County, Nevada, and the United States is for the 2010 average unemployment rate from the Bureau of Labor Statistics and is available at www.bls.gov. Data for Pahrump was not available from the Bureau of Labor Statistics and instead is reported from the 2010 American Community Survey 3-year Estimates and is available at www.census.gov.

³Data for the United States is from the 2009 American Community Survey and is available at http://www.census.gov/newsroom/releases/archives/income_wealth/cb10-144.html. Data for Pahrump, Nye County, and Nevada is from the 2010 American Community Survey 3-year Estimates and is available at www.uscensusbureau.gov. The 2010 American Community Survey 3-year Estimates report the poverty rate nationally as 14.4% and the per capita income as \$26,942.

Almost half of Pahrump’s residents are employed in industries most impacted by the recession, including entertainment, construction, and retail. A list of the employment distribution as of 2013 is provided in Table 3-6. Since the economic downturn, the unemployment rate in the community has become one of the highest in the nation, resulting in more residents below poverty and lower per capita incomes.

Table 3-6 Town of Pahrump Employment Distribution as of 2013

Employment Industry	Number of Workers	Percentage of Total
Agriculture, forestry, fishing, hunting, and mining	1,083	7.8
Construction	1,489	10.8
Manufacturing	445	3.2
Wholesale trade	234	1.7
Retail trade	1,491	10.8
Transportation, warehousing, and utilities	740	5.3
Information	223	1.6
Finance, insurance, real estate, rental, and leasing	374	2.7
Professional, scientific, management, administrative, and waste management services	1,168	8.4
Educational services, health care, and social assistance	2,101	15.2
Arts, entertainment, recreation, accommodation, and food services	2,684	19.4
Other services, except public administration	849	6.1
Public Administration	965	7.0
Total for all Sectors	13,846	100

Between 2007 and 2013, the median household income in Pahrump fell from \$42,601 to \$41,653. By way of comparison, the 2013 U.S. median household income was \$52,250. As the median household income fell, the population of Nye County decreased by approximately 3.8% from 2010 to 2013, resulting in a decrease from 43,946 residents to 42,297 residents. Conversely, the population of Clark County increased during that time by approximately 3.9%, from 1,951,269 in 2010, to 2,027,868 in 2013 (US Census Bureau, 2014).

In 2013, the total number of housing units listed was 21,957, of these, 18,046 were occupied and 3,911 (more than 18%) were reported as vacant.

In 2012, Nye County, in conjunction with key stakeholders throughout its jurisdictional boundaries, including the Town of Pahrump, partnered to form the Nye County Regional Economic Development Authority (NCREDA) to work throughout the County to improve economic conditions. NCREDA was developed as the economic support structure critical to the region's economic welfare. NCREDA's vision, mission, objectives, and strategic initiatives were aligned with the Governor's Office of Economic Development (GOED) Strategy, "Moving Nevada Forward: A Plan for Excellence in Economic Development, 2012 – 2014".

NCREDA works closely with GOED to coordinate economic development efforts, learn from the successes and challenges of other Regional Development Authorities (RDAs), and proactively engage in coordination and cooperation among RDAs, consistent with Nye County's Comprehensive Economic Development Strategy. These efforts included the pursuit of four key Target Sectors for pursuit within the Region, including: aerospace and defense; mining, materials and manufacturing; tourism, gaming, and entertainment; and clean energy.

The ARES project was initially approached by NCREDA members and subsequently received support from the Nye County Board of Commissioners to construct their project in the Town of Pahrump.

3.13.2 Methodology

The analysis makes use of the best available data and professional judgment to identify specific socio-economic trends and opportunities in the project area and on nearby lands.

3.13.3 Environmental Consequences

3.13.3.1 Proposed Action

3.13.3.1.1 Direct and Indirect Effects

The direct economic impacts of the construction phase will depend on the dollar value and quantity of materials available for purchase locally, as well as personal income and employment. The majority of construction materials, much of which is highly technical, with the exception of natural resources, such as sand, gravel, stone, and concrete products (those with little value-added), will likely be imported and have minimal impact on the local economy. Labor accounts for a significant portion of total construction costs. As more construction workers spend their wages and salaries for household consumption in the local area, the positive impacts associated with these jobs increases. As many as 100 to 125 full time construction workers are expected to be on site during construction, which is expected to last up to six months. ARES anticipates hiring a Pahrump, Nevada, based construction company with locally-based employees. Thus the personal income, jobs, increased sales by local suppliers of construction goods and services, and other direct economic benefits associated with the project are likely to stay within the Town of Pahrump. Similarly, indirect benefits, including local secondary consumer and supply-chain goods and services

would be expected. Also, the hiring of a local, established company, will limit the negative impacts on community services and local government an in-migration of new workers may affect.

During the operation of the facility 15 to 16 full time workers are expected to be on site during the facility's 24 hour, seven days per week operation. Anticipated benefits associated with these long-term jobs include personal income, new jobs, and business expenditures. Indirect benefits would include expansion of the local supply chain providing goods and services in support of direct suppliers to the project. Additionally, the new project would amount to a diversification of the local economy in the energy industry that would be consistent with one of the four target industry sectors identified in both the County's Comprehensive Economic Development Strategy (CEDS) document and with the Governor's Office of Economic Development Strategy.

The local government would experience an increase in property tax revenues. Materials will be sourced locally to the extent possible (technical equipment may have limited distributors), to reduce shipping costs and impacts.

Economic benefit associated with the project in Clark County is likely to be minor, primarily comprised of fees associated with Clark County air quality and land use planning permits, and property taxes.

On both a local and a regional scale, socio-economics stands to benefit from the ultimate purpose for the project – energy regulation management, which promotes a secure and reliable electrical power service for residents, business, and industry

The Proposed Action may result in some negative social and economic impacts during construction including: (1) reduced scenic quality (see Visual Resources, Section 3.18); (2) increased dust levels during the six month construction period (see Air Quality, Section 3.3); and (3) increased traffic during construction (see Transportation, Section 3.15), possibly affecting tourism. These would be offset by the increase in short-term construction jobs and long-term operations and maintenance jobs, resulting in a possible increase in local businesses such as housing, restaurants, gas stations, grocery stores, entertainment and supply related businesses. The presence of the Proposed Action and its associated jobs would also lead to a much needed increased tax base for local and state governments.

3.13.3.1.2 Mitigation Measures

As described above, it is not anticipated the Project would result in the need for new or expanded local government or community services; therefore, mitigation measures are not anticipated to be needed.

3.13.3.1.3 Residual Impacts

It is anticipated that the Project would result in minimal in-migration, and as a result, not increase the service populations of local government and community services to an extent which would cause social change or disruption in local communities. During operation, the Proposed Action is expected to create approximately 15 to 16 long-term positions. No noticeable additional in-migration is expected to occur as a result of these long-term jobs being created.

3.13.3.1.4 Cumulative Impacts

Because the Project would not result in impacts that could be experienced disproportionately within the identified low-income areas, it would not contribute to cumulative environmental justice impacts.

As indicated above, it is anticipated that the Project would result in minimal in-migration, and as a result, would not increase the service populations of local government and community services or cause social

change or disruption in local communities. Projects in the cumulative scenario can be expected to create additional long-term positions, the number of which would be based on their sizes and employment sector. The potential cumulative impacts of the Proposed Action in combination with other reasonably foreseeable projects would not be significant.

3.13.3.2 Alternative

3.13.3.2.1 Direct and Indirect Effects

The direct and indirect economic impacts of implementation of the Alternative would be the same as those described for the Proposed Action.

3.13.3.2.2 Mitigation Measures

As described for the Proposed Action, no economic impacts from implementation of the Proposed Alternative, therefore, mitigation measures are not anticipated to be needed.

3.13.3.2.3 Residual Impacts

The potential residual impacts of implementation of the proposed project are the same as those described for the Proposed Action.

3.13.3.2.4 Cumulative Impacts

The potential cumulative impacts of implementation of the Alternative are the same as those described for the Proposed Action.

3.13.4 No Action Alternative

3.13.4.1.1 Direct and Indirect Effects

Under the No Action alternative the Project ROW would be denied and the project would not be built. The socioeconomic conditions within and around the Project Area would not be enhanced by either short-term construction or long-term job opportunities, perpetuating the economic recession in Pahrump. Similarly, the initiatives promoted to expand and diversify the local economy through both a Comprehensive Economic Strategy and direct efforts to attract new and innovative companies like ARES would be negated and the social and economic efforts already spent in pursuing the project would be lost. Finally, the electrical grid system would remain without a local facility for energy regulation and management, thereby maintaining existing levels of electrical transmission stability and reliability.

3.13.4.1.2 Cumulative Impacts

Because the No Action Alternative would result in no direct or indirect impacts related to socioeconomics, there would be no cumulative impacts associated with the No Action Alternative.

3.14 Soils

3.14.1 Affected Environment

Soils within the project area are managed under the authority of the Federal Clean Water Act, as amended (33 USC 1251 et seq.) and Chapter 445A of the NRS.

The Project Area predominantly includes the Commski-Lastchance and Irongold-Weiser associations (Natural Resources Conservation Service, 2014). Lesser percentages of Irongold, Commski-Oldspan-Lastchance and Lastchance-Commski associations also exist in the area. The soils are alluvium derived from limestone and dolomite. The predominant soil characteristics consist mostly of a surface covered in

cobbles or stones, with a profile of extremely gravelly sandy loam (below five inches) and very gravelly fine sandy loam (above five inches) to extremely and very gravelly loam.

The following information is excerpted from the *Final Report, Landscape Analysis, Chapter 1: Characterization of the Spring Mountains National Recreation Area* (Entrix, Inc., 2008):

The biological soil crust is found at the surface in the open spaces between plants in most arid ecosystems (Belnap et al. 2001). Biological soil crusts are a mosaic of cyanobacteria, green algae, lichens, mosses, microfungi, and other bacteria (Belnap et al. 2001). The cyanobacterial and microfungi filaments hold soil particles in place, reducing soil loss from wind and water erosion (Belnap and Gillette 1998). Additionally, biological soil crusts function as living mulch by retaining soil moisture and discouraging annual weed growth (Belnap et al. 2001). Certain species of cyanobacteria and lichens fix atmospheric nitrogen, and are often the primary nitrogen source for higher plants (Evans and Ehleringer 1993; Belnap 2002). In the Spring Mountains NRA, biological soil crusts primarily occur at the lower elevations ranging from desert scrub up through pinyon-juniper vegetation communities.

No biological soil crusts were observed during biological field surveys conducted between April and September of 2014. However, desert pavement was evident, particularly in the southern portion of the project area.

Desert pavement does exist in the Action Area. Once desert pavement has been disrupted, the underlying soil is subject to wind and water erosion and there is a greater possibility of non-native plants being able to take root, as explained in the quote from Haff (March 2001).

“Desert pavement surfaces are typically mechanically weak. Most surface clasts on well-developed pavements lie in edge-to-edge contact with their neighbors, somewhat like the mosaic on a tiled floor. Clasts are seated in the underlying fine-grained matrix, but they are not strongly cemented to each other or to the matrix. Pavement stones are often easily dislodged by a footstep. Long-term pavement stability is a function of isolation from disruptive forces, not of strength of the pavement itself. This type of stability may be termed “environmental stability” to distinguish it from a stability gained from inherent mechanical resistance to physical disruption such as characterizes duricrusts. The importance of recognizing environmentally stable systems lies in their potential role as detectors of environmental change, since the longevity of their present state is due to relative stability of the local environment. (Haff, March 2001)”

3.14.2 Methodology

Soil data were obtained from the United States Department of Agriculture’s Natural Resource Conservation Service (NRCS) Soil Survey Geographic Database, and from survey NV755 (Clark County Area). The analysis of the data makes use of the best available data, professional judgment, and field survey observations. The analysis also compared an overlay of the U.S. Department of Agriculture, Natural Resources Conservation Service soil map of the project area to identify soil types, runoff and erosion potential.

3.14.3 Environmental Consequences

3.14.3.1 Proposed Action

Construction will involve grading of the surface within the project area. Cut and fill sections will also be needed to maintain an even grade for the rail of approximately 8%.

3.14.3.1.1 Direct and Indirect Effects

Activities in the Project Area have the potential to directly impact 170 acres of soil resources through compaction and wind and storm water-related erosion. Commski-Lastchance, Irongold-Weiser, Irongold, Commski-Oldspan-Lastchance, Lastchance-Commski, Purob-Irongold, and Lastchance-Ferrogold-Commdki associations are common soil associations in the area of the Proposed Project; construction and operation of the REM facility will impact a small portion of the each soil association. Soil loss may occur through sediment transport, particularly in areas where the desert pavement is disturbed.

No biological soil crusts were observed during field surveys; however, desert pavement was evident in the southern portion of the project area. As much of 170 acres of desert pavement may be lost, this will contribute incrementally to existing declines.

3.14.3.1.2 Mitigation Measures

Although application of the proposed design features would reduce impacts to soils, disturbance of 170 acres of soils as a result of the Proposed Action would remain in the short term, and disturbance of 72 acres of soils as a result of the Proposed Action would remain in the long term. The use of water or an alternative BLM-approved dust palliative on disturbed area will preserve soil by reducing wind erosion resulting from the destruction of desert pavement in disturbed areas. Culverts will be installed in the rail bed to maintain the normal passage of rainwater and reduce erosion. Weed free straw bales or waddles may also be utilized as necessary to reduce erosion from storm water runoff during construction. The reseeded of temporary disturbance areas after construction activities have been completed will also control erosion and reduce any potential remaining impacts.

3.14.3.1.3 Residual Impacts

Residual impacts to soil resources in the Project Area would include the loss of 170 acres of desert pavement. The 72 acres of long term disturbance may be subject to mitigation through the use of a dust palliative, but at least minor wind and water erosion can be anticipated.

3.14.3.1.4 Cumulative Impacts

The Proposed Action would contribute to the cumulative impacts on soil resources in the basin. The cumulative loss of soils for the Proposed Project and other RFFA could be large, but due to the nature and type of the variables cannot be adequately quantified (level of development within the Planning District or a designated corridor, for example).

3.14.3.2 Alternative

The location of the Alternative is the same as for the Proposed Action, except for the small modifications in the location of the Operation and Maintenance facilities and the adjusted alignment of the southern end of the rail corridor. However, these changes do not alter the soil associations affected by the project as described for the Proposed Action.

3.14.3.2.1 Direct and Indirect Effects

The potential direct and indirect effects of the Alternative on soil resources, and the effects of the soil on construction considerations are the same as described for the Proposed Action.

3.14.3.2.2 Mitigation Measures

The mitigation measures to be implemented for the Alternative are the same as those described for the Proposed Action.

3.14.3.2.3 Residual Impacts

The potential residual impacts impact on soil resources from the Project Alternative are the same as those described for the Proposed Action.

3.14.3.2.4 Cumulative Impacts

The potential cumulative impacts from implementation of the Alternative are the same as those described for the Proposed Action

3.14.3.3 No Action Alternative

3.14.3.3.1 Direct and Indirect Effects

Under the No Action Alternative, the Project ROW would be denied and the Actions Area would remain unchanged. Current activities in the area, such as off road vehicle use, grazing, etc., would continue.

No additional direct or indirect soil resources would be impacted. The land would remain available for future development and ROW requests.

3.14.3.3.2 Cumulative Impacts

Because the No Action Alternative would result in no direct or indirect impacts related to soils, there would be no new cumulative impacts associated with the No Action Alternative.

3.15 Transportation

3.15.1 Affected Environment

Access to the Project Area is provided by a combination of state highways and county and BLM roads. Local traffic on federal lands is served by improved and unimproved BLM roads. The Nevada Department of Transportation (NDOT) measures annual average daily traffic (AADT) on federal and state highways. Two major transportation corridors pass through downtown Pahrump: Nevada State Highway 160 running north to south, and Nevada State Highway 372 running from the Nevada-California state line east to Highway 160. The portion of Highway 160 passing the access to the Action Areas, from 0.1 miles north of Highway 327 to 15.6 miles north of Nevada State Highway 159 in Clark County, had a combined AADT of 58,000 for 2013. Nevada State Highway 372 from 0.1 miles east of the Nevada/California state line (California State Highway 178) to 0.8 miles west of Highway 160 had a combined AADT of 11,300 for 2013. Nevada State Highway 160 from 0.1 miles south of US-95 (north of Pahrump) to 0.1 miles north of SR-372 had a combined AADT of 22,900 for 2013.

In addition to monitoring AADT, NDOT also produces a report providing information on the number and types of accidents that occur on Nevada roads. This report is prepared with cooperation from other Nevada agencies, including Department of Motor Vehicles, Nevada Department of Public Safety, and local law enforcement agencies. In 2010, Nye County reported motor vehicle accidents total of 419 in 2008, 467 in 2009, and 494 in 2010 (Nevada Department of Transportation Safety Engineering Division, 2010). In 2010, 6 of the 15 reported fatality accidents in Nye County occurred in Pahrump.

3.15.2 Methodology

The analysis of potential traffic congestion and travel delays on US Route 95 and Nevada State Highway 160 during peak construction was used as an impact indicator of the change in traffic density by road (i.e., percent of carrying capacity). A comparison of the existing traffic density with expected densities during construction and operation was evaluated to determine the potential effect on local traffic.

3.15.3 Environmental Consequences

3.15.3.1 Proposed Action

3.15.3.1.1 Direct and Indirect Effects

Traffic in the Pahrump area will have a noticeable increase during the construction phase of the project. There will be a one month period during the six month construction phase when a majority of the rail line ballast will be delivered to the Project Area. The Proposed Action would generate increases in traffic volumes on highways providing access to the project area and on county and operator-maintained roads within the Action Area. Heavy haul traffic would not carry deliveries from southern California, as California State Highway 178 would not support the heavy vehicles. ARES does not anticipate receiving heavy haul deliveries from the Las Vegas area, either. It is anticipated a majority of heavy haul traffic will access the site from the north, utilizing U.S. Route 95 and Nevada State Highway 160. In addition, the increase in traffic may potentially increase fugitive dust levels and vehicle emissions (see Air Quality, Section 3.3).

Existing dirt roads used to access the Project Area will require upgrades including the installation of culverts in existing drainages to level the road surface, and the application of standard Type 2 gravel, obtained from a local source (yet to be determined). These roads will then be maintained during the life of the project, as they will also act as site access.

The mean travel time to work for Nye County residents in 2012 surveys was 28.7 minutes (US Census Bureau, 2014). The increase in construction traffic may negatively impact travel time to work for Pahrump residents during the construction phase and increase congestion in the Town of Pahrump and on roads and highways providing access to the project site. Rerouting traffic through residential areas and roadways other than Nevada State Highway 160, would further slow traffic in town, and would increase the level of danger from accidents for motorists and residents.

Operation of the Project would require a workforce of up to 16 full-time-equivalent positions. This workforce would include administrative and management personnel, operators, security and maintenance personnel. Employees would be based at the on-site Operations and Control building. Operation and maintenance would require the use of vehicles and equipment such as pickup trucks. Because operation and maintenance of the Project would generate substantially less traffic than construction activities, no adverse impacts are expected to occur due to the traffic generated during the operation and maintenance phase of the Proposed Action.

3.15.3.1.2 Mitigation Measures

ARES will consult with Nye County Planning authorities, the Sheriff's Office, and other agencies, regarding increased traffic during the construction phase, including an assessment of the number of vehicles per day, their size, and type. Specific issues of concern (e.g., location of school bus routes and stops) will be identified and addressed in the traffic management plan.

3.15.3.1.3 Residual Impacts

Once construction is completed, any variance in traffic levels due to the Proposed Action will be negligible, as the project anticipates no more than five employees on site at one time.

3.15.3.1.4 Cumulative Impacts

In addition, the proposed beltway and truck route for the Town of Pahrump are still in the planning stages and are not expected to begin construction prior to the completion of the Proposed Action (see Figure 34).

If these bypass routes are completed, any impacts to community residence due to modifications in traffic levels due to the Proposed Action, would likely be eliminated.

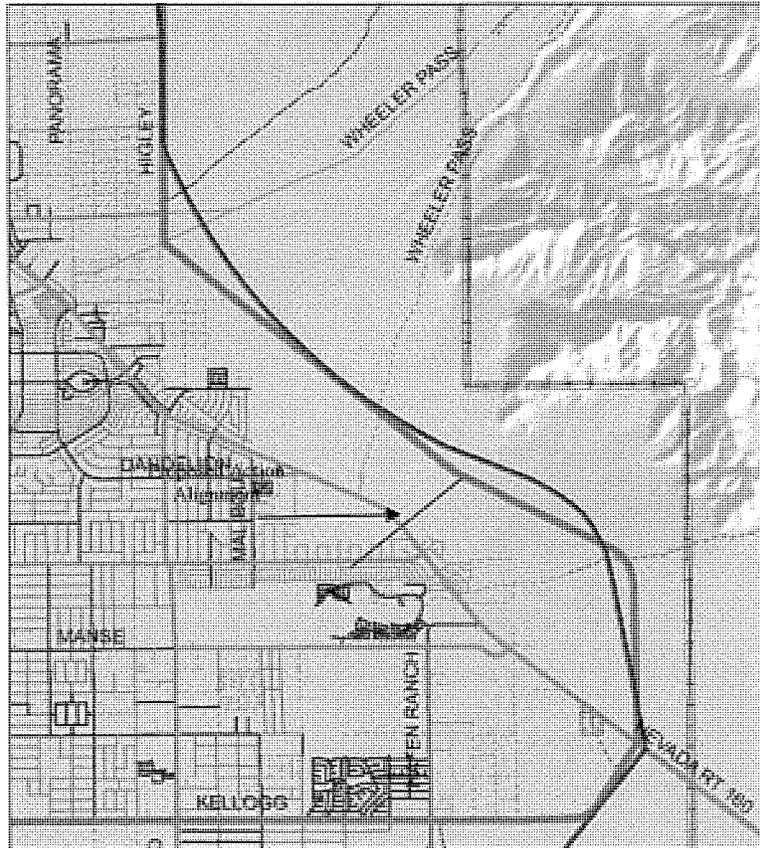


Figure 34. Proposed Pahrump bellway (red) and truck route (purple) passing the Proposed Project areas.

3.15.3.2 Alternative

3.15.3.2.1 Direct and Indirect Effects

The potential direct and indirect effects of the Alternative on transportation are the same as for the Proposed Action.

3.15.3.2.2 Mitigation Measures

Mitigation measures developed and implemented for the Proposed Action would be implemented for the Alternative.

3.15.3.2.3 Residual Impacts

The potential residual impacts of the Alternative would be the same as described for the Proposed Action.

3.15.3.2.4 Cumulative Impacts

The potential cumulative impacts of the Alternative are the same as those described for the Proposed Action.

3.15.3.3 No Action Alternative

3.15.3.3.1 Direct and Indirect Effects

Under the No Action Alternative, the Project ROW would be denied and transportation in the area would continue to be subject to existing conditions.

3.15.3.3.2 Cumulative Impacts

Because the No Action Alternative would result in no new direct or indirect impacts related to transportation, there would be no cumulative impacts associated with the No Action Alternative.

3.16 Vegetation Excluding Federally Listed Species

3.16.1 Affected Environment

3.16.1.1 General Vegetation

Vegetation cover types described and mapped under the Southwest Regional Gap Analysis Project (US Geological Survey, 2004) were used to evaluate plant communities in the proposed project area. Land cover types occurring within the potentially affected area of the proposed project area are shown in Figure 35. North American Warm Desert Pavement, Inter-Mountain Basins Semi-Desert Shrub Steppe, and Mojave Mid-Elevation Mixed Desert Scrub communities that occur within the project area are generally widespread and present throughout the Mojave Ecoregion. These vegetation communities provide a variety of ecosystem services with direct and indirect economic benefits to humans such as wildlife habitat, soil, water, and air protection, and a setting for recreation, and are an important component of the viewshed. The vegetation communities that occur within the project area are generally widespread and present throughout the Mojave Ecoregion, but can also be considered a limited and finite resource.

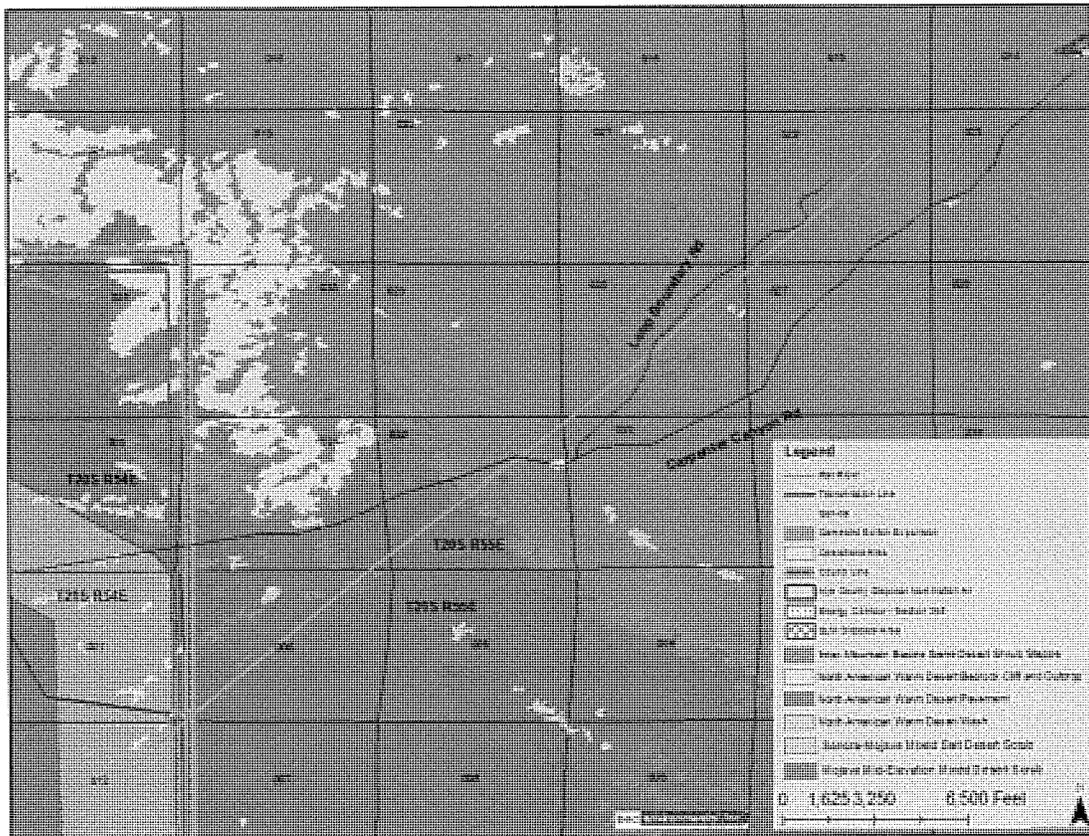


Figure 35. Southwest Regional Gap Analysis Project mapped vegetation communities.

3.16.1.1.1 North American Warm Desert Pavement

This vegetative community comprises 13,105 acres in the BLM Southern Nevada District.

The Southwest Regional Gap Analysis Project describes this community as an ecological system occurring throughout much of the warm deserts of North America, “and is composed of unvegetated to very sparsely vegetated (<2% plant cover) landscapes, typically flat basins where extreme temperature and wind develop ground surfaces of fine to medium gravel coated with “desert Varnish.” Very low cover of desert scrub species such as *Larrea tridentata* or *Eriogonum fasciculatum* is usually present. However, ephemeral herbaceous species may have high cover in response to seasonal precipitation, including *Chorizanthe rigida*, *Eriogonum inflatum*, and *Geraea canescens*.”

3.16.1.1.2 Inter-Mountain Basins Semi-Desert Shrub Steppe

This vegetative community comprises 4,092 acres in the BLM Southern Nevada District.

The Southwest Regional Gap Analysis Project describes this community as an, “ecological system occurs throughout the Intermountain western U.S., typically at lower elevations on alluvial fans and flats with moderate to deep soils. This semi-arid shrub-steppe is typically dominated by graminoids (>25% cover) with an open shrub layer, but includes sparse mixed shrublands without a strong graminoid layer. Characteristic grasses include *Achnatherum hymenoides*, *Bouteloua gracilis*, *Distichlis spicata*, *Hesperostipa comata*, *Pleuraphis jamesii*, *Poa secunda*, and *Sporobolus airoides*. The woody layer is often a mixture of shrubs and dwarf-shrubs. Characteristic species include *Atriplex canescens*, *Artemisia*

filifolia, *Chrysothamnus greenii*, *Chrysothamnus viscidiflorus*, *Ephedra* spp., *Ericameria nauseosa*, *Gutierrezia sarothrae*, and *Krascheninnikovia lanata*. Scattered *Artemisia tridentata* may be present but does not dominate. The general aspect of occurrences may be either open Shrubland with patchy grasses or patchy open herbaceous layer. Disturbance may be important in maintaining the woody component. Microphytic crust is very important in some occurrences.”

3.16.1.1.3 Mojave Mid-Elevation Mixed Desert Scrub

This vegetative community comprises 532,079 acres in the BLM Southern Nevada District.

Described by the Southwest Regional Gap Analysis Project as an, “ecological system represents the extensive desert scrub in the transition zone above *Larrea tridentata*-*Ambrosia dumosa* desert scrub and below the lower montane woodlands (700-1800 m elevations) that occurs in the eastern and central Mojave Desert. It is also common on lower piedmont slopes in the transition zone into the southern Great Basin. The vegetation in the ecological systems is quite variable. Codominants and diagnostic species include *Coleogyne ramosissima*, *Eriogonum fasciculatum*, *Ephedra nevadensis*, *Grayia spinosa*, *Menodora spinescens*, *Nolina* spp., *Opuntia acanthocarpa*, *Salazaria mexicana*, *Viguiera parishii*, *Yucca brevifolia*, or *Yucca schidigera*. Desert grasses include *Achnatherum hymenoides*, *Achnatherum speciosum*, *Muhlenbergia porter*, *Pleuraphis jamesii*, *Pleuraphis rigida*, or *Poa secunda*, may form an herbaceous layer. Scattered *Juniperus osteosperma* or desert scrub species may also be present.

The presence of noxious weeds can result in the loss of desert scrub through increased fire probabilities, or outcompeting the native species. The treatment and handling of noxious weeds are regulated by NRS 555.130-201 and NAC Chapter 555. Lists of weed species reviewed in connection with the Proposed Action included the Nevada Department of Agriculture (NDA) Noxious Weed List (Nevada Department of Agriculture, 2014) and the Federal Noxious Weed List (US Department of Agriculture, December 2010). No noxious weeds were observed during the field surveys conducted for this project.

3.16.1.2 BLM Special Status Species

This section includes BLM Sensitive plant species and plants protected in the State of Nevada under NRS 527 (except cactus and yucca, which are discussed in Section 3.16 Forestry). The BLM manages special-status plant species according to BLM Manual 6840. Protection of Nevada special-status plant species is provided under NRS 527.050 and NRS 527.260–527.300.

The area occupied by rare plant habitats in the BLM Southern Nevada District management area is finite. In general, the acreage of rare plant habitat has been steadily decreasing due to BLM realty actions, congressionally mandated land transfers, mining, fire, and unlawful and/or trespass actions. This decrease has been predominantly on multiple-use lands within designated disposal boundaries and utility corridors. In general, rare plant habitats are slow to recover following disturbance, such as casual use recreation and grazing, which can also promote colonization by non-native invasive species.

In an August 23, 2013, letter the Nevada Natural Heritage Program (NNHP) stated habitat for the ivory-spined agave (*Agave utahensis* var. *eborispina*), an NNHP vulnerable species, and Mojave milkvetch (*Astragalus mohavensis* var. *mohavensis*), an NNHP imperiled species, may occur in the area of the Proposed Action. NNHP information noted occurrences of halfring milkvetch (*Astragalus mohavensis* var. *hemigyus*), a BLM sensitive species, were recorded in the vicinity of the Action Area in April 1999, the closest of which was identified 0.5 miles west of the Project Area.

BLM designated sensitive species with the potential include the halfring milkvetch (noted above), yellow two-toned penstemon (*Penstemon bicolor* ssp. *bicolor*), rosey two toned penstemon (*Penstemon bicolor*

ssp. *roseus*), white bearpoppy (*Arctomecon merriamii*), Pahrump Valley buckwheat (*Eriogonum bifurcatum*), and Death Valley beardtongue (*Penstemon fruticiformis* ssp. *amargosae*).

Additional USFS (Spring Mountains National Recreation Area) special status plant species with the potential to occur within the upper elevations of the Project area and special status plant species that may occur in the vicinity of the Project area are listed in Table 3-7.

Table 3-7. Sensitive species potentially occurring in or around the Project Area.

Special Status Species	Common Name	ESA Status	BLM Status	Nevada Status	NNHP	NNPS	Habitat Present/Species Observed
<i>Arctomecon merriamii</i>	white bearpoppy	Not Listed	Sensitive	N/A	Watch List	Watch List	No/No
<i>Agave utahensis</i> var. <i>eborispina</i>	ivory-spined agave	Not Listed	N/A	Vulnerable	Watch List	No Concern	No/No
<i>Astragalus mohavensis</i> var. <i>hemigyris</i>	halfring milkvetch	Not Listed	Sensitive	Imperiled	At Risk	Watch List	Yes/No
<i>Eriogonum bifurcatum</i>	Pahrump Valley buckwheat	Not Listed	Sensitive	N/A	Sensitive	Threatened	No/No
<i>Eriogonum heermannii</i> var. <i>clokeyi</i>	Clokey buckwheat	Not Listed	Sensitive	Imperiled	At Risk	Watch List	No/No
<i>Penstemon bicolor</i> ssp. <i>bicolor</i>	yellow two-tone beardtongue	Not Listed	Sensitive	Imperiled	At Risk	Watch List	Yes/No
<i>Penstemon bicolor</i> ssp. <i>roseus</i>	rosey two-tone beardtongue	Not Listed	Sensitive	Vulnerable	At Risk	Watch List	Yes/No
<i>Penstemon fruticiformis</i> ssp. <i>amargosae</i>	Death Valley beardtongue	Not Listed	Sensitive	N/A	At Risk	Threatened	No/No

White bearpoppy (*Arctomecon merriamii*)

Known to occur in Mohave desert scrub habitat, on barren, gravelly places up to rocky slopes; some populations have been observed on limestone. This bearpoppy typically occurs around 3,937 feet (1,200 meters), but can occur as low as 1,968 feet (600 meters) and up to 5,906 feet (1,800 meters) (NatureServe, 2015).

Ivory-spined agave (*Agave utahensis* var. *eborispina*)

Known to occur in the Mojave Desert in desert scrub to conifer woodland, on calcareous outcrops between 3,609 feet (1,100 meters) and 3,937 feet (1,200 meters) (University of California, Berkeley, 2013).

Halfring milkvetch (*Astragalus mohavensis* var. *hemigyris*)

Known to occur on rocky ledges and arid gravelly hillsides in the Creosote Bush Scrub community, Joshua tree "woodland," in carbonate soil, at elevations around 4,232 feet (1,290 meters) (NatureServe, 2015).

Pahrump Valley buckwheat (*Eriogonum bifurcatum*)

Known to occur in Chenopod scrub communities, on saline, clay or silt hardpan soils on and near dry playa margins, and on adjacent shore terraces, stabilized sand dunes, and sandy slopes. This buckwheat typically occurs between 984 feet (300 meters) and 2,786 feet (850 meters) in elevation (NatureServe, 2015).

Clokey buckwheat (*Eriogonum heermannii* var. *clokeyi*)

Known to occur in Nevada on limestone gravelly to rocky flats, slopes, and washes, saltbush, blackbrush, or sagebrush communities, pinyon-juniper and montane conifer woodlands between 3,937 feet (1,200 meters) and 6,234 feet (1,900 meters). Variety *clokeyi* is restricted to scattered locations mainly in the Spring (Charleston) Mountains and Sheep Range of Clark County, with outlying populations in limestone mountains around Mercury and just entering Lincoln County in the Hiko Range (Flora of North America Association, 2008).

Yellow two-toned beardtongue (*Penstemon bicolor* ssp. *bicolor*)

Known to occur on calcareous or carbonate soils in washes, roadsides, rock crevices, outcrops, or similar places receiving enhanced runoff, between 2,500 feet (762 meters) and 5,480 feet (1,670 meters) elevation (NatureServe, 2015).

Rosey two-toned beardtongue (*Penstemon bicolor* ssp. *roseus*)

Known to occur on rocky calcareous, granitic, or volcanic soils in washes, roadsides, scree at outcrop bases, rock crevices, or similar places receiving enhanced runoff, in the creosote-bursage, blackbrush, and mixed-shrub zones. Elevation profile is between 1,800 feet (762 meters) and 4,839 feet (1,670 meters) elevation (Bureau of Land Management, 2010).

Death Valley beardtongue (*Penstemon fruticiformis* ssp. *amargosae*)

Known to occur in creosote brush scrub, in gravelly washes, canyon floors and juniper/pine woodlands in Nevada (Wetherwax, 2002). Occurs at elevations between 3,281 feet (1,000 meters) and 3,937 feet (1,200 meters).

3.16.2 Methodology

An ArcGIS overlay of project components (short-term and long-term disturbance areas) was compared with mapped vegetation communities downloaded from the Southwest Regional Gap Analysis website. Habitat descriptions and known occurrences for special status species were reviewed prior to field surveys; and plant identification keys were utilized during the field surveys for special status species potentially occurring in or near the Action Area.

3.16.3 Environmental Consequences

3.16.3.1 Proposed Action

3.16.3.1.1 Direct and Indirect Effects

General Vegetation

The Proposed Action has the potential to impact 72 acres in the long term and another 98 acres in the short term (170 acres in total) through ground disturbing activities.

Construction activities associated with the Proposed Action would include clearing and grubbing which would result in a decrease in native plant cover and increased soil disturbance. Vegetation removal also provides an opportunity for non-native weeds species to colonize the project area. Noxious and/or invasive weeds compete with native species for sunlight, soil, water, nutrients, and space, reducing forage productivity. Additionally, soil disturbance could reduce the native seed bank associated with the site.

Indirect effects include increased vehicle traffic during all phases of the Proposed Action, but primarily during the construction phase, which would also contribute to the potential spread of noxious and/or invasive weeds (see full discussion of Noxious Weeds in Section 3.4). Vehicles are effective pathways of introduction for weeds by dispersing seeds along roadways. (See Section 3.20 Wildlife for additional potential impact discussion.)

Special Status Species

Although no special status species were observed during field surveys, the potential for occurrences within the Action Area still exists. Because of this, the Proposed Project may result in the direct loss of individual plants and suitable habitat. Nearby populations of other BLM sensitive plant species including halfring milkvetch may also be indirectly impacted if the Proposed Action leads to the introduction and spread of invasive species. However, the disturbance of habitat is also known to increase populations of some special status species, such as the yellow and rosey two-toned beardtongues.

3.16.3.1.2 Mitigation Measures

During construction, impacts would be limited to as small a footprint as possible through the use of flags to delineate boundaries. Temporary disturbance areas will be restored in accordance with BLM guidelines in order to reduce short and long-term impacts. Upon final closure of the site at the end of the project life, vegetation will be restored to comply with current BLM guidelines.

ARES will develop an integrated vegetation management plan consistent with applicable regulations and agency policies for the control of unwanted vegetation, noxious weeds, and invasive species (E.O. 13112). The plan will address monitoring; ROW vegetation management; the use of certified weed-seed-free hay, straw, and/or mulch; the cleaning of vehicles to avoid the introduction of invasive weeds; education of personnel on weed identification, the manner in which weeds spread, and the methods for treating infestations.

To restore disturbed habitats, ARES will prepare a habitat restoration plan to identify the approach and methods to be used to restore habitats disturbed during project construction activities. The plan will be designed to expedite the recovery to natural habitats supporting native vegetation, and require restoration to be completed as soon as practicable after completion of construction, minimizing the habitat converted at any one time. To ensure rapid and successful restoration efforts, the plan will include restoration success criteria, including time frames, which will be developed in coordination with the BLM.

In addition, the following plans would be prepared and implemented that would further reduce impacts to vegetation:

- Fire Protection Plan
- Noxious Weed Management Plan
- Decommissioning and Site Reclamation Plan

3.16.3.1.3 Residual Impacts

Although application of proposed design features would reduce impacts to vegetation, disturbance of 72 acres of vegetation as a result of the Proposed Action would remain in the long term. These impacts will be unavoidable. However, these impacts will contribute incrementally to existing declines in the quantity and quality of these vegetation communities in the BLM Southern Nevada District.

3.16.3.1.4 Cumulative Impacts

During development cumulative impacts to native vegetation and the ecosystem services they provide would occur on 170 acres. The North American Warm Desert Pavement, Inter-Mountain Basins Semi-Desert Shrub Steppe, and Mojave Mid-Elevation Mixed Desert Scrub communities within the project area are generally widespread and present throughout the Mojave Ecoregion. These vegetation communities provide a variety of ecosystem services with direct and indirect economic benefits to humans such as wildlife habitat, soil, water, and air protection, and a setting for recreation, and are an important component of the viewshed. For cumulative impacts the area of analysis is the lands administered by the Las Vegas and Pahrump Field Offices. These vegetation communities are widespread within this area; however, both are a limited and finite resource. When combined with other reasonably foreseeable actions and the cumulative scenario described in Section 3.2, the Proposed Action would result in an incremental addition to current declines in the quantity and quality of native vegetation in the analysis area. As described in Section 3.2, a major reason impacts to vegetation in the Mojave Desert are cumulative is because of the extremely slow rate of natural recovery. Restoration (seeding and soil decompaction) does not replace natural recovery, but it can speed the rate of recovery. Increased resource protection is beneficial because native vegetation and soils in the Mojave can be fragile. As little as one pass from a vehicle can create a new road, unless steps are taken to prevent additional disturbance.

3.16.3.2 Alternative

3.16.3.2.1 Direct and Indirect Effects

General Vegetation

The Alternative has the potential to impact 70 acres in the long term and another 98 acres in the short term (164 acres in total) through ground disturbing activities, an area slightly smaller than that for the Proposed Action. The potential effects of the project on these vegetation within the Alternative area are the same as those described for the Proposed Action.

Special Status Species

The potential effects of the Alternative on Special Status Species are the same as those described for the Proposed Action.

3.16.3.2.2 Mitigation Measures

The mitigation measures that would be implemented for the Alternative are the same as those developed and described for the Proposed Action.

3.16.3.2.3 Residual Impacts

The potential residual impacts of the Alternative are the same as those described for the Proposed Action.

3.16.3.2.4 Cumulative Impacts

The potential cumulative impacts of the Alternative are the same as those described for the Proposed Action.

3.16.4 No Action Alternative

3.16.4.1.1 Direct and Indirect Effects

Under the No Action Alternative, the Project ROW would be denied and vegetation would continue to be managed consistent with the objectives of the BLM Las Vegas RMP. The land would remain available for future development.

3.16.4.1.2 Cumulative Impacts

Because the No Action Alternative would result in no direct or indirect impacts related to vegetation, there would be no cumulative impacts associated with the No Action Alternative.

3.17 Forestry

3.17.1 Affected Environment

Two different forestry program vegetative resources are present in the Proposed Area and are affected by the proposed action, native seed and cactus and yucca plants. Native seed, collected by commercial vendors under a BLM issued permit, is important for revegetation, mine reclamation, habitat restoration, and fire rehabilitation of private and public lands. The Proposed Project is part of the State Highway 160 Seed Collection Area. Individual cactus and yucca plants, sold to the public under a permit, are considered wildings and are in demand for drought tolerant and native plant landscaping as well as habitat restoration and reclamation projects on public lands.

BLM administers the sale of forest products and other vegetative resources under 43 CFR 5400. In Nevada IM-NV-2010-055 and draft IM-NV-2014-013 clarify and provide guidance to the disposal, sale and pricing of forest products on BLM lands in the state.

3.17.2 Methodology

A density estimate of the number of cactus and yucca plants present within the project areas was completed and used to evaluate impacts to Forestry Program concerns. Surveys were conducted on April 27, May 25, and September 25, 2014. Seven species of cacti and three species of yucca observed during the surveys. Species counts for the rail corridor and facilities area are listed in Table 3-8. Species counts for each of the transmission corridors (interconnection with ARES substation, existing transmission to be upgraded, and new transmission) are listed in Table 3-9.

Table 3-8. Cactus and yucca species observed in the rail corridor and facilities area, including counts for each.

Common Name (<i>Species</i>)	Totals
silver cholla (<i>Cylindropuntia echinocarpa</i>)	1,010
hedgehog cactus (<i>Echinocereus engelmannii</i>)	955
cottontop cactus (<i>Echinocactus polycephalus</i>)	181
desert spinystar (<i>Escobaria vivipara</i> var. <i>deserti</i>)	19
barrel cactus (<i>Ferocactus cylindraceus</i>)	17
fishhook cactus (<i>Mammillaria tetrancistra</i>)	1
beavertail cactus (<i>Opuntia basilaris</i>)	484
banana yucca (<i>Yucca baccata</i>)	75
Joshua tree (<i>Yucca brevifolia</i>)	4,800
Mojave yucca (<i>Yucca schidigera</i>)	5,351
Totals	12,893

Table 3-9. Cactus and yucca species observed in the interconnection, existing transmission, and new transmission corridors, including counts for each.

Common Name (Species)	Totals
silver cholla (<i>Cylindropuntia echinocarpa</i>)	565
hedgehog cactus (<i>Echinocereus engelmannii</i>)	131
cottontop cactus (<i>Echinocactus polycephalus</i>)	209
desert spinystar (<i>Escobaria vivipara</i> var. <i>deserti</i>)	2
barrel cactus (<i>Ferocactus cylindraceus</i>)	0
fishhook cactus (<i>Mammillaria tetrancistra</i>)	6
beavertail cactus (<i>Opuntia basilaris</i>)	251
banana yucca (<i>Yucca baccata</i>)	0
Joshua tree (<i>Yucca brevifolia</i>)	83
Mojave yucca (<i>Yucca schidigera</i>)	2,228
Totals	3,475

3.17.3 Environmental Consequences

3.17.3.1 Proposed Action

3.17.3.1.1 Direct and Indirect Effects

The Proposed Action would result in the loss of approximately 72 acres within the Highway 160 Collection Area. Opportunities for commercial contractors to collect native seed on public lands are limited by stand location and the density of target species. On average Las Vegas Field office has issued one commercial collection permit for the area every two to three years. The proposed action would directly affect area of land that BLM can use to issue future seed collection contracts to native seed collectors in the area. Because many of the target species occur elsewhere, the reduction in seed collection area would be negligible.

An estimate of the density of cacti and yucca present was calculated based on surveying 175 acres. It is estimated 16,368 cactus and yucca plants are present within the Proposed Project Area and would be impacted by the Proposed Action through removal or habitat loss.

3.17.3.1.2 Mitigation Measures

The proponent has requested BLM allow them to purchase cactus and yucca in the impact area at salvage sale pricing set by the BLM Nevada State Office.

3.17.3.1.3 Residual Impacts

Residual impacts would include the long term loss of potentially 72 acres of Highway 160 Collection Area and cactus and yucca habitat.

3.17.3.1.4 Cumulative Impacts

It is assumed that all reasonably foreseeable future development on BLM lands would be subject to the same design features and mitigation measures which reduce the potential cumulative impacts to forestry program concerns.

3.17.3.2 Alternative

3.17.3.2.1 Direct and Indirect Effects

The potential direct and indirect effects of the Alternative are the same as those described for the Proposed Action, but in a slightly smaller area.

3.17.3.2.2 Mitigation Measures

The mitigation measures developed and described for the Proposed Action would be implemented for the Alternative.

3.17.3.2.3 Residual Impacts

The potential residual impacts from the Alternative would be the essentially same as those described for the Proposed Action.

3.17.3.2.4 Cumulative Impacts

The potential cumulative impacts from the Alternative would be essentially the same as those described for the Proposed Action.

3.17.3.3 No Action Alternative

3.17.3.3.1 Direct and Indirect Effects

Under the No Action Alternative, the Project ROW would be denied and forestry resources would continue under current conditions. The land would remain available for other development requests.

3.17.3.3.2 Cumulative Impacts

Because the No Action Alternative would result in no direct or indirect impacts related to forestry resources, there would be no new cumulative impacts associated with the No Action Alternative.

3.18 Visual Resources

All lands administered by the BLM are managed to achieve some level of visual or scenic quality. The BLM uses a visual resource management (VRM) system to identify and manage scenic values on federal lands administered by that agency. The VRM system includes a visual resource inventory, which classifies visual resources on BLM land into one of four categories (Class I, II, III, or IV), and sets management objectives through the RMP process. The manner in which the four visual resource inventory classifications are determined is explained in BLM Handbook H-8410-1, *Visual Resource Inventory* and Handbook H-8431-1, *Visual Resource Contrast Rating*.

3.18.1 Affected Environment

The Las Vegas Southern Nevada District Office has classified the Proposed Action Area as VRM Class III (BLM Southern Nevada District Office, 2014). 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. New projects can be approved that are not large scale, dominating features (i.e., geothermal power plant or major mining operation would not be approved).

3.18.2 Methodology

A contrast rating was done from critical viewpoints, known as Key Observation Points (KOPs), located along Nevada State Highway 160 (a commonly traveled route) and within and above the ROW.

Six KOPs were selected to determine the potential impacts of the proposed project on visual resources within the project area (see Figure 36 and Photos 1 - 6). The primary public views of the proposed project would be from Nevada State Highway 160; less frequent public views would occur along the ROW itself, from recreational users. KOPs were selected to represent effects of the Project as seen from public areas that permit a high degree of visibility to the project area.

The degree of visual contrasts was rated at each KOP, based on the form, line, color, and texture changes between the existing landscapes and how the landscapes would look after implementation of the potential project (see Table 3-10).

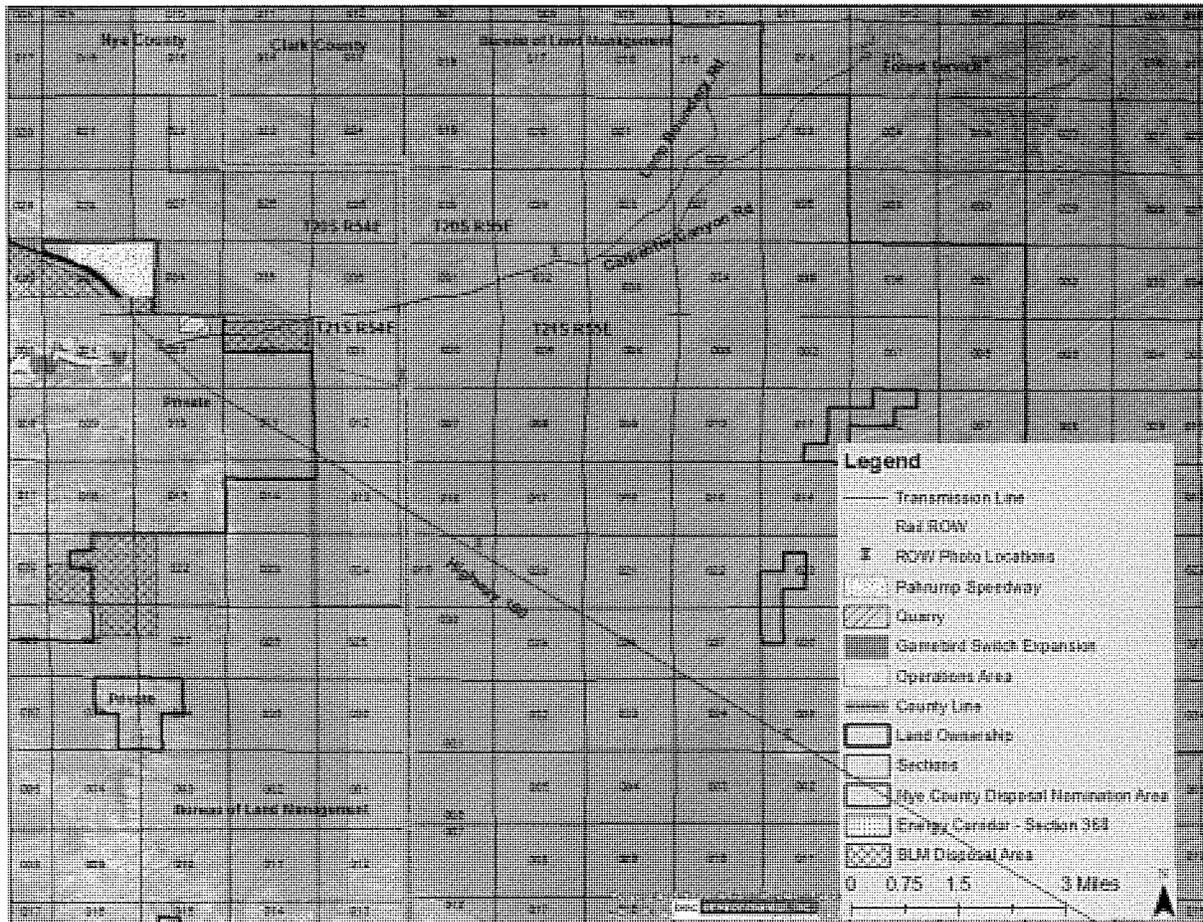


Figure 36. Visual resource analysis Key Observation Point locations.

3.18.3 Environmental Consequences

3.18.3.1 Proposed Action

3.18.3.1.1 Direct and Indirect Effects

In the general vicinity of the Proposed Action, the natural and undisturbed visual environment is dominant, but utility lines, fence lines, dirt roads, billboards, and highway signage are also highly visible elements of the landscape. Once completed, the REM facility would be consistent with VRM Class III; since most viewers would be traveling by car along Nevada State Highway 160. The Proposed Action is

an acceptable modification in VRM Class III and is not anticipated to dominate the visual landscape of the casual observer.

Photographs were taken of the Proposed Project Area at Key Observation Points (KOP), distances ranging from more than six miles distant to adjacent to the Proposed ROW. Each KOP was chosen based on the likelihood of public observation of the surrounding area and potentially the Project Area. The photographs were taken on June 11, 2014.



Photo 1. View from Nevada State Highway 160, looking northwest. Rail corridor is approximately 6.5 miles distant, in the middle ground.



Photo 2. View of the Proposed Action Area, mid ground right side, from Nevada State Highway 160, looking northwest. The facilities area is approximately 2.5 miles distant.



Photo 3. Mid elevation, rail corridor centerline, of the Proposed Action, looking southwest toward the Pahrump Valley.



Photo 4. View from 2.25 miles upslope of the Proposed Action Area, looking southwest toward Pahrump Valley.



Photo 5. Proposed Action Area facilities location, looking northeast along the proposed alignment, with Mount Charleston in the background.

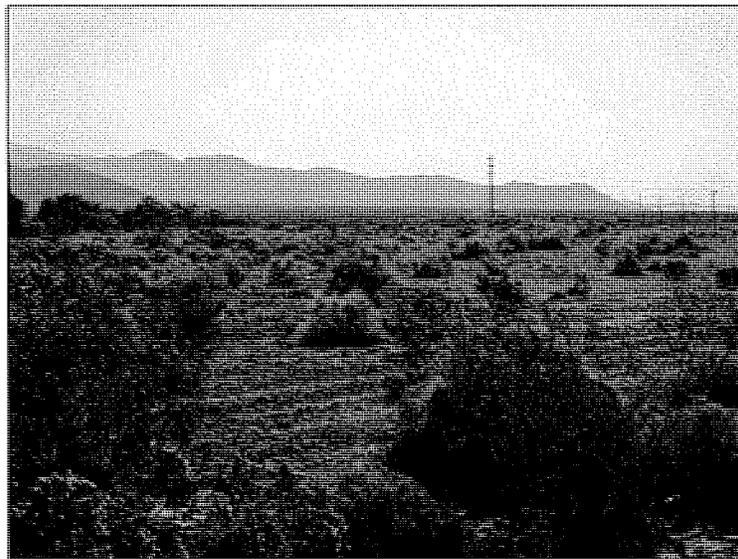


Photo 6. View of the Proposed facilities area, approximately 2.75 miles distant, looking east, with the rail corridor extending from center middle ground to the left of the picture.



Photo 7. The ARES Tehachapi Pilot Project (1/5th scale) in operation (note: the Proposed Action will utilize an overhead catenary line, not the trackside rail shown in the photo, and the proposed project does not include installation of wind energy turbines as shown in the background of this photograph).

Table 3-10. Visual Resources and Impacts Summary for the Proposed Action

	Land	Water	Vegetation	Structures	Impacts
Form	Mostly flat, gently rising toward the Spring Mountains. Mountains dominate in the distance. Transmission lines, fences, and billboards dominate in the near distance in multiple directions.	None.	Low to moderate in height, dispersed and distant.	Eye is drawn to roadside signs and structures, including transmission lines and billboards, which dominate the near ground view.	Weak to Moderate: The Proposed Action would impact the existing populated area's far view form with a dominant line running upslope, perpendicular to most near view linear structures, very similar to how existing unimproved roads appear. The Proposed Action becomes dominant for viewers traveling the dirt roads crossing the alluvial fan.
Line	Near distance dominated by horizontal lines formed by	None.	Jagged in the foreground, but mainly horizontal	Distinct vertical and horizontal lines are created from the	Weak to Moderate: The Proposed Action would add an additional linear feature to the

	Land	Water	Vegetation	Structures	Impacts
	transmission lines, fences, billboards, and the highway blacktop; jagged hill and mountain profiles more distant surround the area. The transmission lines and highway features create unnatural straight lines. After construction of the Proposed Action, the additional line may not be apparent until focus shifts to the far ground.		lines created by subtle changes in density and variations in vegetation cover which is predominantly creosote at lower elevations, Joshua tree at higher elevations.	transmission lines, support poles, signage and sections of fence. Blacktop creates distinct lines. Structures become less dominant for a viewer along the dirt roads crossing the alluvial fan.	area. The modification would not likely be noticed as inconsistent with the near ground, but may seem inconsistent if viewed from one of the dirt roads on the alluvial fan.
Color	Vegetative greens and browns in the soil. Some rocks exhibit shades of gray. Colors darken during rain events and snow adds a white contrast to the mountains and hills.	None.	Ranges from green to brown to black, depending on the weather, season, and distance of viewer. Areas of yellow dominate during blooming.	Most noticeable during the day is the blacktop of the highways, buildings, and transmission lines for lower elevation viewers. The dark brown of the transmission poles blends with the topography, unless viewed with a blue sky background. Yellow to light brown clouds of dust are produced from OHV traffic on the existing dirt roads. Night lighting would produce a contrast due to the lack of other light sources in the Action Areas direction.	Weak to Moderate: The Proposed Action would not appreciably modify the color of the area, with the exception of vehicles on site and night lighting. The contrasting color of the vehicles would only be noticeable in the near ground. Lighting used for night operations will be visible from a greater distance at night than other impacts. However, such lighting will be shielded to direct light where needed and minimize other impacts.

	Land	Water	Vegetation	Structures	Impacts
Texture	Broken/clumpy in the foreground from vegetation. Pahrump Valley exhibits a smooth texture broken with buildings and roads.	None.	Coarse and clumpy in the immediate foreground. Texture changes to smooth as vegetation blends in the distance. Hills and mountains in the far distance create a jagged texture.	Highways and transmission lines create a visible linear feature. Occasional views of recreational vehicles interrupt the naturally flowing lines of the area.	Weak to Moderate: The Proposed Action is expected to minimally modify the texture of the area, as structures will be painted to blend with the surrounding area. Contrast will not be readily apparent from lower elevations. Area texture will be more noticeably modified for closer viewers.

3.18.3.1.2 Mitigation Measures

All lighting would be designed to provide the minimum illumination needed to achieve safety and security objectives, and be directed downward and shielded to focus illumination on the desired areas. Lighting is planned to be installed at the exterior of the buildings and within the on-site substation.

Standard rail safety lighting will be installed at the Carpenter Canyon Road crossing. This lighting will only be activated when the train is approaching the crossing. The train shuttle cars will have lights identifying the head and tail of the train, and possibly the sides of each shuttle car (this may just be reflective items).

Structures within the facilities area, as well as the train shuttle cars, will be colored to conform to the current BLM Standard Environmental Colors chart (Standard Environmental Color Chart CC-001: June 2013), selecting the most appropriate color to as closely as possible match the predominant background colors of the immediate area. Color selection will be a shade or two darker than the surrounding landscape to account for natural shadows, normal fading, and weathering, and be approved by the BLM.

3.18.3.1.3 Residual Impacts

Although application of the proposed design features would reduce impacts to visual resources, moderate levels of visual contrasts from the Proposed Action would remain in the long term.

3.18.3.1.4 Cumulative Impacts

The development of other reasonably foreseeable future actions would result in the modification of undeveloped public land managed as VRM Class III. The level of change to the characteristic landscape from the cumulative impacts of all development would be low. Other reasonably foreseeable future actions would have similar impacts, also in areas with existing modifications, and would need to abide by BLM visual impact standards.

3.18.3.2 Alternative

3.18.3.2.1 Direct and Indirect Effects

The potential effects of the Alternative on the visual resources in the area will be the same as described for the Proposed Action.

3.18.3.2.2 Mitigation Measures

The mitigation measures developed for the Proposed Action would be implemented for the Alternative.

3.18.3.2.3 Residual Impacts

The potential residual impacts of the Alternative are essentially the same as those described for the Proposed Action.

3.18.3.2.4 Cumulative Impacts

The potential cumulative impacts of the Alternative are essentially the same as those described for the Proposed Action.

3.18.3.3 No Action Alternative

3.18.3.3.1 Direct and Indirect Effects

Under the No Action Alternative, the Project ROW would be denied and visual resources in the project area would continue to be influenced by the existing modifications to the landscape and land uses, and managed consistent with the objectives of the BLM Las Vegas RMP. The land would remain available for future development and it is possible that some form of development could occur in this location if the Proposed Action were not authorized.

3.18.3.3.2 Cumulative Impacts

Because the No Action Alternative would result in no direct or indirect impacts related to visual resources, there would be no new cumulative impacts associated with the No Action Alternative.

3.19 Wild Horses and Burros

3.19.1 Affected Environment

There are five wild horse herd management areas (HMA) managed by the Southern Nevada BLM District Office. Of those HMAs, the Proposed Action is located within the Wheeler Pass HMA

Under the direction of the 1971 Wild Free-Roaming Horses and Burros Act, the BLM evaluates and monitors the Wheeler Pass Herd Management Area and determines how many wild horses and burros can live there along with a variety of wildlife and recreational users. The Wheeler Pass HMA is divided into two separate sections by the Spring Mountain Recreation Area. The HMA covers approximately 273,000 acres. The Wheeler Pass HMA is part of the Spring Mountains Complex and was determined to have a carrying capacity of 933 Animal Unit Months (AUMs) that can be supported by the available forage; based on this calculation, the Appropriate Management Level (AML) was set at 47 to 66 wild horses and 20 to 35 wild burros. This AML is based on the coordinated management between the BLM and the U.S. Forest Service. Populations within the HMA were estimated to be 335-443 horses and 109-164 burros in 2014; BLM estimates wild horse and burro populations generally increase by 20 percent annually.

During the hot summer months, burros tend to occupy shaded areas such as ravines, while wild horses tend to remain in open country. During cooler months, both horses and burros roam the entire HMA. Cold Creek (east side of the Spring Mountains, approximately 15 miles north of the Proposed Project) contains

several springs, creeks, and fire suppression ponds that supply water for the wild horses and burros, as well as other wildlife.

3.19.2 Methodology

Maps of existing HMAs were reviewed and BLM statistics on HMA utilization were incorporated.

3.19.3 Environmental Consequences

3.19.3.1 Proposed Action

3.19.3.1.1 Direct and Indirect Effects

Increased activity in the area, especially during construction could result in disruption and displacement of wild horses and burros utilizing the area. Construction of fences around the proposed action facilities could result in minor disruption of movement of free roaming wild horses and burros.

Very little evidence of use by horses or burros was observed during the desert tortoise and botanical field surveys (April, May, September and October 2014).

3.19.3.1.2 Mitigation Measures

No fences are anticipated, except those required for safety and security purposes around the facilities area, to avoid disrupting horse and burro free roaming to the extent possible.

The rail line will be constructed at-grade, transmission associated with shuttle train car operation will be an overhead catenary, and the rail corridor will not be fenced; current rail corridor design will minimize impacts to the free-roaming nature of wild horses and burros.

Current wild horse and burro mitigation measures would remain in effect unless/until BLM made changes or another use was found for the land.

3.19.3.1.3 Residual Impacts

During long-term operations, it is expected horses and burros will quickly become accustomed to operational activities and resume normal residence in the area.

3.19.3.1.4 Cumulative Impacts

Managing wildlife habitats to provide sufficient forage and cover, and limiting habitat fragmentation, is beneficial to wild horses and burros because it limits the opportunity for disturbance and the potential for habitat degradation. Any actions, such as fencing or restricting wild horse and burro access could be detrimental by restricting access to forage and/or water or by limiting their free-roaming nature. However, due to the dispersed quality, nature, and locations of all reasonably foreseeable future actions, the cumulative impact is expected to be low.

3.19.3.2 Alternative

3.19.3.2.1 Direct and Indirect Effects

The potential direct and indirect effects on horses from the Alternative would be the same as those described for the Proposed Action.

3.19.3.2.2 Mitigation Measures

The mitigation measures developed for the Alternative would be the same as those developed for the Proposed Action.

3.19.3.2.3 Residual Impacts

Potential residual impacts of the Alternative are essentially the same as those described for the Proposed Action.

3.19.3.2.4 Cumulative Impacts

Potential cumulative impacts of the Alternative are essentially the same as those described for the Proposed Action.

3.19.3.3 No Action Alternative

3.19.3.3.1 Direct and Indirect Effects

Under the No Action Alternative, there would be no change to the existing habitat for wild horses and burros.

3.19.3.3.2 Cumulative Impacts

Because the No Action Alternative would result in no direct or indirect impacts related to visual resources, there would be no new cumulative impacts associated with the No Action Alternative.

3.20 Wildlife

3.20.1 Affected Environment

3.20.1.1 General Wildlife

The 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. For a comprehensive discussion of potential wildlife species that may be present, refer to the most recent Resource Management Plan for the BLM Southern Nevada District.

Wildlife species in the general area include mammals, birds, reptiles, and invertebrates. Additionally, the BLM is directed to conserve special status species through BLM Special Status Species Manual 6840. The BLM maintains a comprehensive list of species that have risks associated with a downward population trend and/or have specialized habitats that may be at risk. Wildlife, including BLM sensitive species, may be displaced as 170 acres of land are disturbed within the Project Area.

3.20.1.2 BLM Sensitive Wildlife Species

BLM sensitive species are species that require special management consideration to avoid potential future listing under ESA and that have been identified in accordance with procedures set forth in BLM Manual 6840 – Special Status Species. A complete list of BLM sensitive species within the area can be found in the Resource Management Plan. Many of these species as well as other wildlife species of concern are also discussed in the Nevada State Wildlife Action Plan (NDOW 2012) and the Clark County Multiple Species Habitat Conservation Plan. Sensitive bird species are also provided protection by the Migratory Bird Treaty Act and thus are discussed in the Migratory Bird Section (see Section 3.7).

Wildlife specific surveys were not conducted of the Project Area. However, one Mojave Desert sidewinder (*Crotalus cerastes cerastes*) was observed along the existing transmission route, and three years-old mule deer (*Odocoileus hemionus*) antler sheds were observed in washes, during botanical, desert tortoise, and general alignment site surveys.

Both NDOW and NNHP provided information regarding historical occurrences of endangered, threatened, candidate, and at risk plant and animal species (September 5, 2013 and August 23, 2013, respectively). NDOW noted approximately 1.5 miles of upper elevation rail occurred within occupied elk distribution area, and identified mule deer distribution area occurred just beyond the upper boundary of the proposed rail corridor. The only wildlife of concern noted by NNHP was the desert tortoise, which is discussed in Section 3.6 Threatened and Endangered Species.

The following BLM sensitive species could potentially be impacted by the proposed action.

Chuckwalla (*Sauromalus obesus*)

Chuckwalla occur in rocky desert, lava flows, hillsides, talus slopes, and rock outcrops mostly below 5,000 feet, where creosote bush is typically the dominant plant species. Chuckwalla will seek shelter in rock crevices and bask on rocks during the day. They are herbivorous, preferring annuals, but they will also eat perennial vegetation. Chuckwallas are relatively common throughout their Nevada range and likely occur within the project area, but would be localized on rock outcroppings.

Banded Gila monster (*Heloderma suspectum*)

Gila monsters occur in desert washes and rocky upland desert scrub at elevations below 5,000 feet. Banded Gila monsters frequently utilize lower slopes of mountains and nearby plains. They will use and are occasionally encountered out in gentler terrain of alluvial fans. Hence, Gila monster habitat overlaps habitats of both the desert tortoise and chuckwalla. Threats to this reptile include illegal collection, traffic fatalities, and habitat destruction from urban and agricultural development.

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 throughout the Mojave Desert.

Desert glossy snake (*Arizona elegans*)

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.

Nevada shovel-nosed snake (*Chionactis occipitalis talpina*)

The Nevada shovel-nosed snake is a nocturnal burrowing snake that typically stays underground in the daytime and occurs in washes, dunes, sandy flats, loose soil and rocky hillsides with sandy gullies or pockets of sand. Their habitat consists of sparse vegetation including creosote bush, desert grasses, cactus and mesquite.

Mojave Desert sidewinder (*Crotalus cerastes cerastes*)

The Mojave Desert sidewinder is a nocturnal snake hiding in the day in animal burrows or coiled camouflaged in a shallow self-made pit at the base of a shrub. 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 nesloni*)

Bighorn sheep habitat preference includes open, usually treeless vegetation types with plant communities containing grasses, sedges, and forbs for foraging, typically in close proximity to steep, rocky terrain for predator escape where they exhibit remarkable agility. Moisture is primarily derived through their diet of a variety of desert plants; however, surface waters are a vital component of their survival and important to

population health. Desert bighorns have a lengthy lambing season that can begin in December and end in June.

Bats

Twenty BLM sensitive bat species are known to occur within the general area of the Proposed Project. Day roosts can include caves, trees, mines, buildings, and bridges. Little population information is known for most bat species within the area; therefore, most trends are unknown with the exception of six species (cave myotis, Townsend’s big-eared bat, western pipistrelle, fringed myotis, long-eared myotis, and long-legged myotis) experiencing downward trends.

Discussions with NDOW staff (Hardenbrook, personal communication) indicated they believe bats currently use the Project Area primarily for foraging, and expect bats to be attracted to lights. Potential species of bats that may be found in the area are listed in Table 3-11. Many of the listed species are expected to roost beyond areas of impact.

Table 3-11. Bat Species with the Potential to Occur at the Proposed Action and Alternative Locations

Species	Status	Roost Habitat Features
Allen’s big-eared bat (<i>Idionycteris phyllotis</i>)	State Protected; BLM Sensitive	Generally roosts in trees, but may also use mines and caves
big brown bat (<i>Eptesicus fuscus</i>)	State Unprotected;	Selects a variety: caves, mines trees, mines buildings, and bridges
Brazilian free-tailed bat (<i>Tadarida brasiliensis</i>)	State Protected; BLM Sensitive	Cliff faces, mines, caves, bridges, buildings and hollow trees
California leaf-nosed bat (<i>Macrotus californicus</i>)	State Protected/ Sensitive; BLM Sensitive	Abandoned mines in desert scrub
California myotis (<i>Myotis californicus</i>)	State Unprotected	Rock crevices, mines, caves, buildings, tree hollows and exfoliating bark
canyon bat (aka western pipistrelle) (<i>Parastrellus hesperus</i>)	State Protected; BLM Sensitive	Rock crevices are common day roosts; mines, caves, occasionally in buildings and vegetation
fringed myotis (<i>Myotis thysanodes</i>)	State Protected; BLM Sensitive	Caves, mines in desert scrub
long-legged myotis (<i>Myotis volans</i>)	State Unprotected	Day roosts primarily in hollows of larger diameter trees, but also caves, mines, buildings, and rock crevices
pallid bat (<i>Antrozous pallidus</i>)	State Protected; BLM Sensitive	Caves, mines, cliffs, canyons
spotted bat (<i>Euderma maculatum</i>)	State Protected/Threatened; BLM Sensitive	Crevices in rocky cliffs and canyons
Townsend’s big eared bat (<i>Corynorhinus townsendii</i>)	State Protected/Sensitive; BLM Sensitive	Caves in desert scrub, Pinyon/Juniper woodlands

3.20.1.3 Nevada Wildlife Action Plan Conservation Priority

Mule deer consideration is given in the Nevada Wildlife Action Plan because of significant population declines in conjunction with large-scale habitat degradation and loss.

3.20.2 Methodology

GIS overlays of wildlife habitat were compared to project components (temporary and permanent, or long-term, disturbance areas) locations. Lists of NDOW, NNHP, and BLM species were reviewed for potential impacts.

3.20.3 Environmental Consequences

3.20.3.1 Proposed Action

3.20.3.1.1 Direct and Indirect Effects

General Wildlife

Wildlife species would be displaced as 170 acres of habitat are disturbed within the project area. The primary direct impacts of the proposed action on wildlife would be killing or maiming of ground dwelling animals, noise and displacement of individuals, the permanent loss and fragmentation of habitat, and increased potential for harassment of wildlife. Indirect impacts could include increased noise, 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 a negligible impact on populations of the species throughout the region.

Construction of the project would force small mammals and reptiles to migrate to adjacent undisturbed areas. Although the linear nature of the project should limit the overall disruption of the habitat, it may result in increased pressure on resources and on animals already residing in the adjacent areas, and may result in mortality of some individual animals. Mortality rates may rise due to loss of cover for small mammals, allowing for increased predation by birds, coyotes, and other predators. Increased vehicular traffic may also result in higher mortality rates among small animal populations. Scavengers may be attracted to the construction site in search of trash and litter, and raptors will be provided additional perching locations on fences and transmission poles.

BLM Sensitive Wildlife Species

Impacts to BLM sensitive species are not anticipated to lead to further decline of the species range-wide.

Chuckwalla, Mojave shovel-nosed snake, desert glossy snake, Nevada shovel-nosed snake, and desert Sidewinder

Potential impacts to these species from the proposed action would be similar to those discussed above for general wildlife.

Banded Gila monster

Potential impacts to the banded Gila monster from the proposed action would be similar to those discussed above for general wildlife but these can be minimized by implementing measures such as clearance surveys, avoidance, and removal from the project area to adjacent areas as needed.

Desert bighorn sheep

In addition to the long-term loss of 72 acres of foraging habitat, desert bighorn sheep may be disturbed by vehicles operating in their habitat. Animals may seek cover on steep slopes and ridges to avoid vehicular activity and associated noise pollution. Because of this, disruption of migration corridors may also occur; however, incorporating fencing for only the facilities area should not impact or block any free movement of bighorn sheep or other big-game species. Increased impacts may occur if activities occur during lambing season. Solitude dependent species, such as the Desert bighorn sheep, may abandon the area if human activities reduce the quality of their habitat.

Bats

The general area around the Proposed Project supports a large diversity of bats, which are on the BLM sensitive species list. The proposed action should not have any direct impacts on bats; however, installation of lighting may indirectly affect their behavior and use of the project area for foraging. Many of the listed species are expected to roost beyond areas of impact. To reduce impacts to bats lighting should be kept to the absolute minimum and should be down lighting only.

In general, the long-term persistence of North American bat species is threatened by the loss of clean, open water; modification or destruction of roosting and foraging habitat; and, for hibernating species, disturbance or destruction of hibernacula. Chemicals in the environment that affect bats or their prey are also threats.

3.20.3.1.2 Mitigation Measures

Although application of the proposed design features would reduce impacts to general wildlife, disturbance of 72 acres of habitat as a result of the Proposed Action would remain in the long term. During development of the Proposed Project, cumulative impacts to wildlife and sensitive wildlife were identified as an unavoidable impact all of which cannot be mitigated. Wildlife habitat is an ecosystem service provided by native vegetation. Impacts and mitigation for vegetation will also benefit general wildlife and sensitive wildlife.

Any impacts to sensitive species would be avoided and/or minimized through the special stipulations provided below:

- Litter pickup will be specifically addressed in mitigation measures for project construction and operation.
- Anti-perching devices may be installed on track side catenary poles, where practical.
- Observations by project staff of potential wildlife problems, including wildlife mortality, will be immediately reported to the applicable BLM authorized officer.
- All NDOW protocols will be followed for any NDOW protected species found during pre-construction surveys and any necessary permits would be obtained.
- Any Gila monster (state sensitive) encounters during project construction will be reported immediately to NDOW at (702) 486-5127.
- There is currently no surface water in the immediate area around the Action Area and the nearest man-made water source is more than one-quarter mile away. No standing water or ponds will be developed as part of the Proposed Project.
- Fencing will only be installed around the facilities area, for safety and security purposes, and should not impact or block any free movement of bighorn sheep or other big-game species
- To reduce impacts to bats lighting should be kept to the absolute minimum and be down lighting only.

3.20.3.1.3 Residual Impacts

The Proposed Action would result in impacts to general wildlife, including the loss of habitat. These impacts would be above what is currently experienced in the area from recreational travel on the existing roads, and unlawful off established road travel. When combined with existing declines in the quality and quantity of native vegetation in the Las Vegas and Pahrump Field Offices management areas, the Proposed Action would result in an incremental addition to current declines in the quality and quantity of habitat available for general wildlife and BLM special status wildlife habitat. In addition, the Proposed Action may result in an incremental addition to habitat fragmentation.

3.20.3.1.4 Cumulative Impacts

The Proposed Action, in conjunction with other projects, would result in cumulative impacts to general wildlife, including the potential loss of habitat. When combined with other reasonably foreseeable actions, and existing declines in the quality and quantity of native vegetation (which is a fundamental component of habitat) in the Las Vegas and Pahrump Field Offices, the Proposed Action would result in an incremental addition to current declines in the quality and quantity of habitat available for general wildlife and BLM special status wildlife habitat. In addition the Proposed Action would result in an incremental addition to habitat fragmentation.

3.20.3.2 Alternative

3.20.3.2.1 Direct and Indirect Effects

The potential direct and indirect effects on general wildlife species and BLM sensitive wildlife species from implementation of the Alternative would be the same as those described for the Proposed Action.

3.20.3.2.2 Mitigation Measures

Mitigation measures developed and to be implemented for the Alternative would be the same as those described for the Proposed Action.

3.20.3.2.3 Residual Impacts

The potential residual impacts of the Alternative would be essentially the same as those described for the Proposed Action, but in a slightly smaller area.

3.20.3.2.4 Cumulative Impacts

The potential cumulative impacts of the Alternative would be essentially the same as those described for the Proposed Action.

3.20.3.3 No Action Alternative

3.20.3.3.1 Direct and Indirect Effects

Under the No Action Alternative, the Project ROW would be denied and wildlife individuals and habitat would not be directly or indirectly impacted by the Project. Current impacts due to recreational travel on the existing roads and unlawful off-established-road-travel would remain at the existing level. The land would remain available for future development.

3.20.3.3.2 Cumulative Impacts

Because the No Action Alternative would result in no direct or indirect impacts, there would be no cumulative impacts associated with the No Action Alternative.

4 LIST OF PREPARERS

Table 4-1 List of Tribes, Persons, Organizations, or Agencies Consulted

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
Clark County		
Kenneth Gullett	Department of Comprehensive Planning	Clark County permitting requirements.
Jared Tasko	Department of Comprehensive Planning	Clark County permitting requirements.
Federal Railroad Administration		
Cheech Smialek	Chief Inspector, Federal Railroad Administration, Region 7	ARES REM Project does not fall under FRA management.
Nevada Department of Wildlife		
Brad Hardenbrook	Supervisory Habitat Biologist	NDOW species of concern for the Action Area. Low potential for impact on bats.
Anthony Miller	Habitat Biologist	
Chet Van Dellen	GIS Coordinator	GIS analysis.
Nevada Natural Heritage Program		
Erik Miskow	Data Manager, Nevada Natural Heritage Program	
Nevada State Historic Preservation Office	Consultation for undertakings, as required by the NHPA (16 USC 470)	Nevada SHPO has concurred with the findings in the Cultural Survey Summary Report (HDR, January 2015).
Nye County		
Tim Dahl	Public Works	
Darrell Lacy	Director, Nye County Planning	
Jaynee Reeves	Nye County Administration	
Pam Webster,	County Manager	
Tribal Entities	Consultation as required by the American Indian Religious Freedom Act of 1978 (42 USC 1531) and NHPA Section 106 (16 USC 1531)	
Edward D. Smith	Chairman, Chemehuevi Indian Tribe	BLM will complete this
Ron Escobar	Chemehuevi Indian Tribe	BLM will complete this
Benny Tso	Chairman, Las Vegas Paiute Tribe	BLM will complete this
Kenny Anderson	Cultural Coordinator, Las Vegas Paiute Tribe	BLM will complete this
Aletha Tom	Chairwoman, Moapa Band of Paiutes	BLM will complete this
Deanna Domingo	Cultural Committee, Moapa Band of Paiutes	BLM will complete this
Eddie Jim	Chairman, Pahrump Paiute Tribe	BLM will complete this

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
George Gholson	Chairman, Timbisha Shoshone Tribe	BLM will complete this
Barbara Durham	THPO, Timbisha Shoshone Tribe	BLM will complete this
US Fish and Wildlife Service	Consultation as required by the Endangered Species Act of 1973 (16 USC 1531)	The BLM and USFWS are currently proceeding with Section 7 consultation under the ESA. At this time, the BO has not been developed.
Michael Burroughs	Wildlife Biologist	Obtained species list for use during biological surveys of project site

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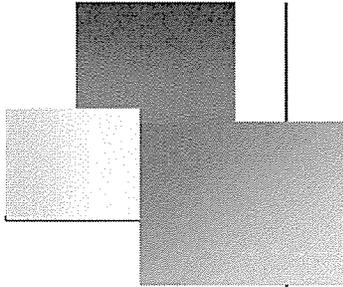
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Biological Assessment



Biological Assessment

ARES Regulation Energy Management Project

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ACRONYMS

BA	Biological Assessment
BLM	Bureau of Land Management
CAISO	California Independent System Operator
CFR	Code of Federal Regulations
ESA	Endangered Species Act – (16 U.S.C. 1536(c))
FERC	Federal Energy Regulatory Commission
FLPMA	Federal Land Policy and Management Act – (43 U.S.C. 1701 et. seq.)
kV	Kilovolt
MW	Megawatt
MWH	Megawatt Hour
NAC	Nevada Administrative Code
NDOW	Nevada Department of Wildlife
NEPA	National Environmental Policy Act – (42 U.S.C. 4321 et seq.)
NNHP	Nevada Natural Heritage Program
NRS	Nevada Revised Statutes
PUCN	Public Utilities Commission of Nevada
REM	Regulation Energy Management
RMP	Resource Management Plan
ROW	Right-of-Way
UEPA	Utility Environmental Protection Act
U.S.C.	United States Code
USFWS	U.S. Fish and Wildlife Service
VEA	Valley Electric Association

1 INTRODUCTION

ARES Nevada, LLC (ARES) is proposing to construct, operate and maintain a Regulation Energy Management (REM) facility on Bureau of Land Management (BLM) managed land in the Carpenter Canyon area of Clark and Nye Counties, Nevada. The purpose of this Biological Assessment (BA) is to assess the effects of the Proposed Action on federally protected resources in order for the BLM Southern Nevada District Office, the lead federal agency for this Action, to grant a right-of-way (ROW) for the REM facility, under the Federal Land Policy and Management Act (FLPMA) of October 21, 1976, as amended (43 U.S.C. (United States Code) 1701 et. seq.) and 43 CFR (Code of Federal Regulations) Part 2800. Input will also be provided by the U.S. Fish and Wildlife Service (USFWS), under Section 7 Consultation. Public agency involvement included Nevada Department of Wildlife (NDOW), the Public Utilities Commission of Nevada (PUCN), the California Independent System Operator (CAISO), and Nye and Clark Counties.

The Proposed Project is a 50 megawatt (MW) gravity based Energy Storage System which utilizes multiple electric locomotives operating on a single steep grade railroad track to store or deliver electric energy into the regional electrical grid -- using electricity from the grid to power the locomotives uphill, returning that electricity to the grid as the locomotives descend with their motors operating as generators. The Proposed Project is designed to balance variable energy demands and renewable energy contributions across an electrical grid system. The Proposed Project does not produce more energy than is introduced into its system; therefore it is not an electrical generation facility.

On August 14, 2013, ARES participated in a pre-application meeting with the BLM; on October 31, 2013, ARES submitted an SF 299 Application for Transportation and Utility Systems and Facilities on Federal Lands to the BLM, serialized as NVN-92514. ARES and BLM entered into a cost recovery account agreement on January 24, 2014, and the initial National Environmental Policy Act (NEPA) meeting with BLM Resource Specialists and representatives from ARES was held on March 26, 2014. Revisions to the application were submitted on January 24, 2014, and April 18, 2014.

ARES established a Fund for the Recovery of Costs as part of the NDOW Energy Planning and Conservation Fund (Nevada Revised Statutes [NRS] 701.600 through 701.640) on March 13, 2014.

Botanical surveys were conducted for the Action Area in May 2014, and Mojave desert tortoise surveys were conducted in May, September, and October 2014; the desert tortoise survey report was submitted to the BLM on October 15, 2014. Visual surveys of the Action Area were conducted by ARES on June 11 and 12, 2014, to assist in the alignment of the rail corridor.

ARES submitted a request to join the CAISO Cluster 7 Generator Interconnection and Deliverability Allocation study in April 2014, and CAISO confirmed ARES had been included in the study on June 13, 2014. Through this study, system upgrades needed to connect the project will be identified and costs will be allocated.

On May 9, 2014, the PUCN issued a Notice of Application for Federal Approval to Construct Utility Facility to the ARES project under the Utility Environmental Protection Act (UEPA).

ARES proposes to locate this project in the Carpenter Canyon area, east of Pahrump, in Nye and Clark Counties, Nevada (see Figure 1).

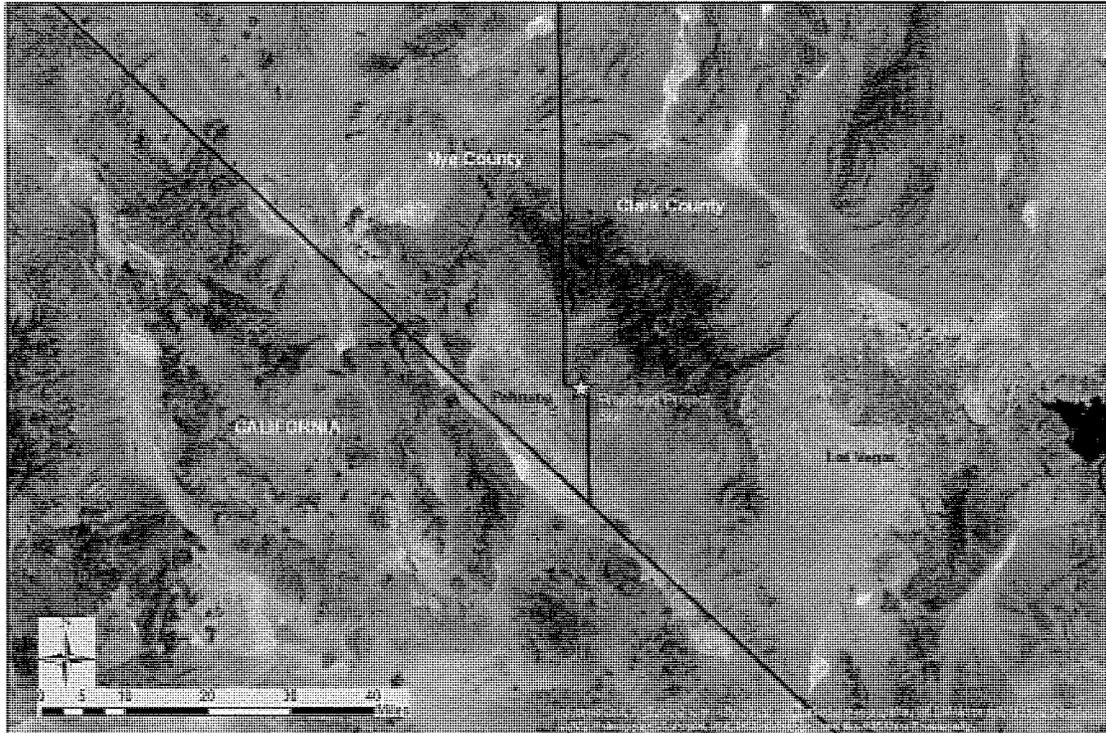


Figure 1. Vicinity map for the location of the Proposed Project within Nevada.

This BA, prepared by BEC Environmental, Inc. (BEC), addresses the Proposed Action in compliance with Section 7 of the Endangered Species Act (ESA) - (16 U.S.C. 4321 et seq). Section 7 assures that, through consultation (or conferencing for proposed species) with the USFWS, federal actions do not jeopardize the continued existence of any threatened, endangered or proposed species, or result in the destruction or adverse modification of critical habitat.

Species lists provided by NDOW and the Nevada Natural Heritage Program (NNHP), a database and literature search, and pedestrian surveys of the Action Area determined the only ESA listed species likely to be found in the vicinity of the Action Area is the Mojave desert tortoise (*Gopherus agassizii*).

1.1 Purpose and Need

The purpose of the proposed action is to assist in electricity supply management and transmission system stability and reliability on the regional electrical transmission grid. The system accomplishes this by using electricity from the transmission grid when electricity is abundant to power locomotives uphill. Electricity is returned to the transmission grid when needed as the locomotives descend with their motors operating as generators.

The construction and operation of the project will provide 12.5 MW hours (MWH) of fast response energy storage necessary to assist in the balancing of electrical supply and demand to counter highly variable energy usage and unpredictably variable renewable energy supplies, while maintaining grid reliability. The Proposed Action is to address current and future grid reliability and stability issues, in accordance with Federal Energy Regulatory Commission (FERC) objectives and in conformance with the objectives set forth in the Las Vegas Resource Management Plan (RMP) and Record of Decision approved in October 1998.

2 DESCRIPTION OF THE ACTION AND ACTION AREA

2.1 Action Area

ARES proposes to construct this project entirely on BLM managed land in the Carpenter Canyon area, east of Pahrump and Nevada State Highway 160, in Nye and Clark Counties, Nevada (see Figure 2).

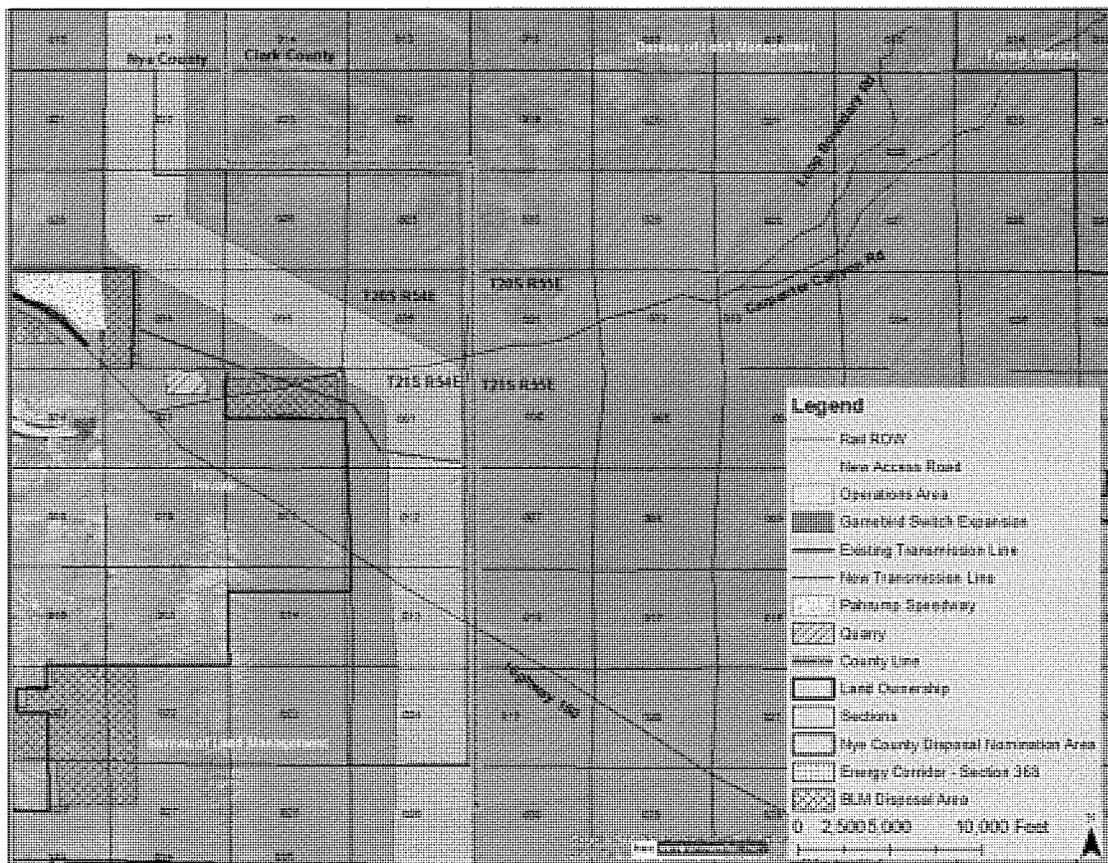


Figure 2. Geographic location for each component of the Proposed Project.

The legal land descriptions for each component of the project are located in Tables 2-1, 2-2, and 2-3.

The upslope (northeast) end of the Proposed Action will begin in Township 20 South, Range 55 East, Section 22. The railroad corridor section of the ROW will run southwest (down-slope) to an operations and maintenance area (support facilities) which will include a new substation (ARES substation), a shuttle train maintenance building, and an operations control center; the ARES substation will be located within Nye County, within the eastern border of the Section 368 Corridor. A new 230 kilovolt (kV) transmission line (interconnection), to be operated by Valley Electric Association (VEA), will run northwest across the Section 368 corridor to connect with the existing VEA 230kV transmission line ROW (N-057100). The interconnection will then become part of the existing VEA 230kV transmission line for approximately 7,200 feet (2,195 meters), at which point a new 4,400 foot (1,341 meters) double circuit transmission line will run due west from the existing transmission to connect with the existing VEA Gamebird Switch Station (N-059100), located in Township 20 South, Range 54 East, Section 34. This new east/west line will consist of typical double-circuit structures approximately 120 to 200 feet (36.6 to 61 meters) tall, spaced 425 feet (129.5 meters) apart, and will include a co-located maintenance road. The Gamebird Switch Station will be expanded; the expansion and related construction will remain within the boundaries of the existing

ROW (N-059100). A new single-circuit transmission line, approximately 1,860 feet (567 meters) long, will be constructed north from Gamebird Switch Station to reconnect with the existing VEA (N-057100) 230 kV transmission line. This new north/south line will consist of typical single-circuit structures approximately 120 to 200 feet (36.6 to 61 meters) tall, spaced 800 feet (244 meters) apart, and a co-located maintenance road. Both the new double-circuit and single-circuit transmission lines will be entirely on BLM managed land, and require ROWs consistent with the existing VEA ROW, which is 100 feet (30.5 meters) in width, containing the new transmission lines and a maintenance road.

The Action Area includes three components:

Rail line corridor: The corridor will include the rail line (7.24 acres), overhead catenary line (4.34 acres), and trackside access and maintenance road (14.48 acres). The main rail track will be 5.5 miles (29,036 feet) long, the mid-elevation spur track will be 0.19 miles (995 feet) long, the facility area curve and storage track will be 0.23 miles (1,218 feet) long, and the maintenance building track will be 0.1 miles (284 feet) long (see Figure 3). The facility area curve and storage track and maintenance building track may be shortened based on conversations with the BLM regarding the West-wide Energy Corridor potential conflicts.

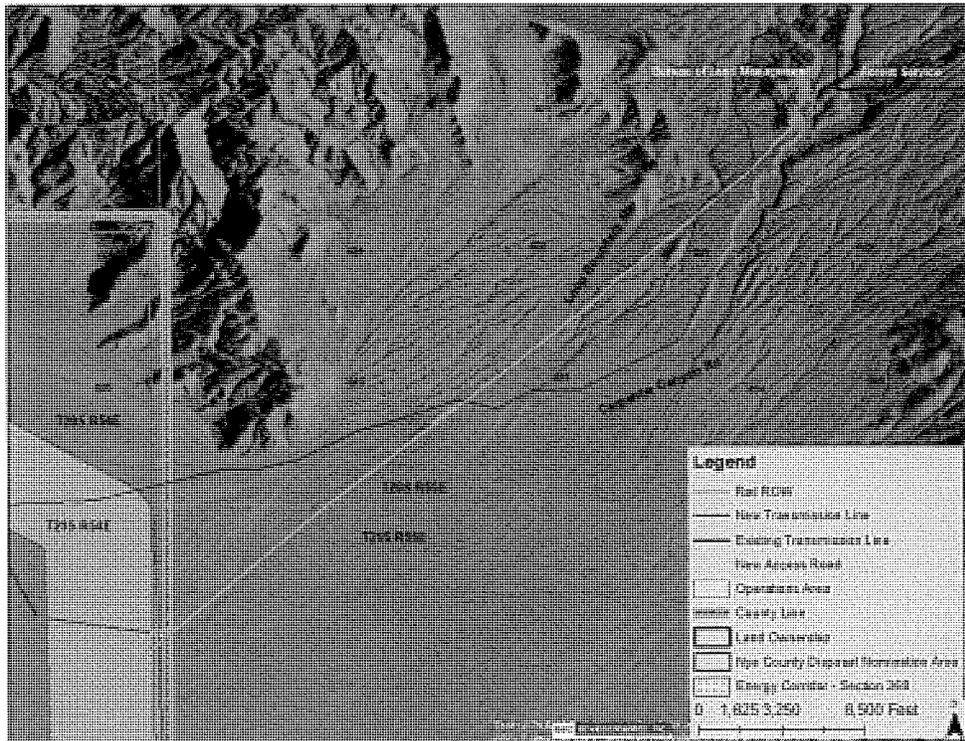


Figure 3. Rail Corridor.

Operations, control and maintenance facilities: Area will include an operations building (0.06 acres), a maintenance building (0.12 acres), a transmission interconnection substation (ARES substation – 0.55 acres), and a gravel employee and visitor parking lot (0.07 acres) (see Figure 4).

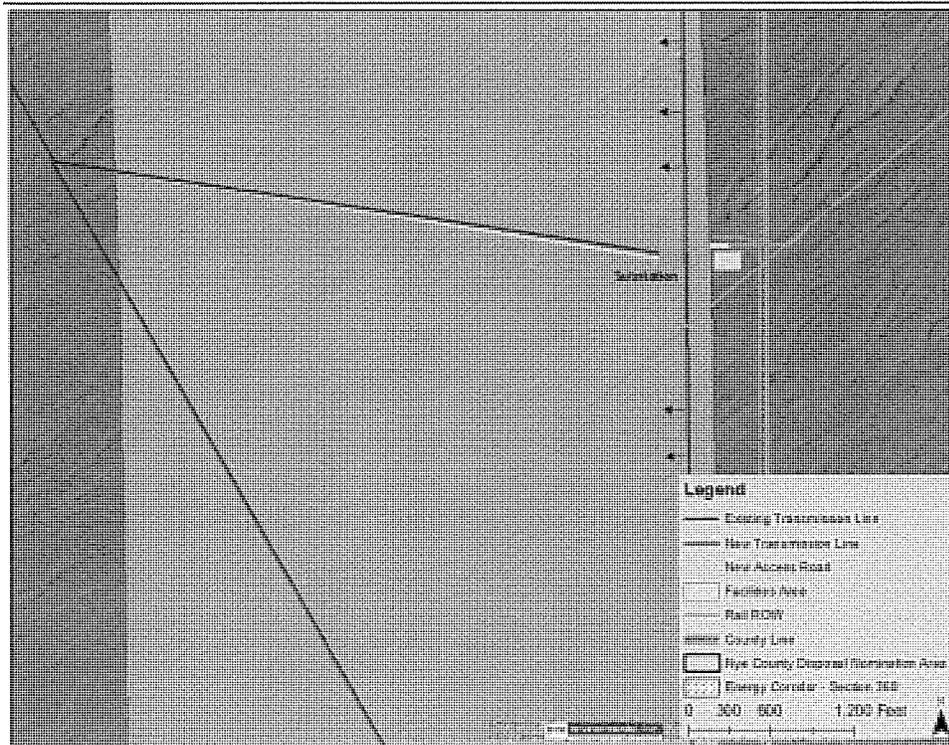


Figure 4. Facilities area and transmission interconnection.

Transmission and access road corridor: Existing transmission lines to be upgraded include 16.5 acres. New transmission consists of an 8.9 acre interconnection and 14.4 acres for the two new Gamebird Switch Station connections. Access roads will be collocated with transmission; acreage of disturbance for roads is included in the Transmission Lines acreage. The existing VEA Gamebird Switch Station (ROW N-59100) will be expanded by 2.4 acres, within the existing ROW. Approximately 5,000 feet (1,524 meters) of the existing 230kV transmission line (N-57100) will be removed (see Figure 5).

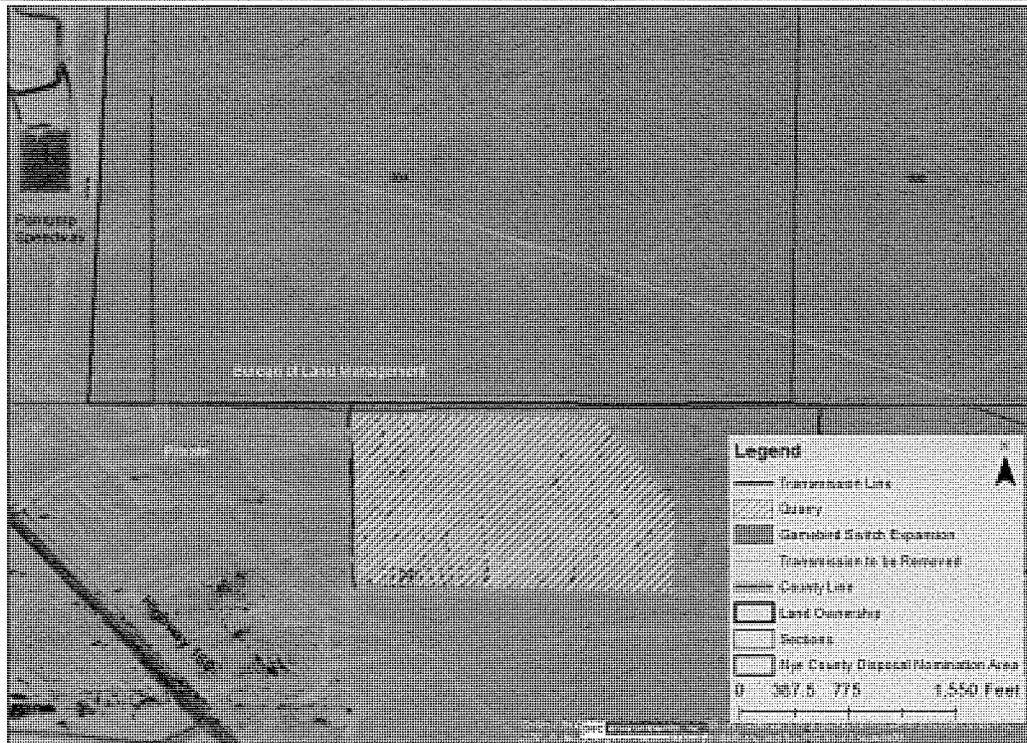


Figure 5. Gamebird Switch Station expansion and associated transmission removal.

The Action Area is partially located within the designated Section 368 Energy Corridor. The alignment of the project, including the facilities and maintenance area, is contained within Township 21 South, Range 54 East, Sections 1 and 12; Township 21 South, Range 55 East, Sections 5, 6, and 7; and Township 20 South, Range 55 East, Sections 22, 28, 31, 32 and 33 (see Figure 2).

Anticipated ground-breaking for the Proposed Action is January 2016. Construction is anticipated to last six to eight months, with facility operations beginning in the first quarter of 2017. Planned lifespan for operation of the facility is 25 years.

Table 2-1: Proposed Rail Line Corridor Legal Land Description

Township and Range	Section	Aliquot Part
T. 20 South, R. 55 East	22	Begins in SW ¼ of the NE ¼, running southwest through the NW ¼ of the SE ¼, NE ¼ of the SW ¼, and SE ¼ of the SW ¼, to the SW ¼ of the SW ¼; then
T. 20 South, R. 55 East	27	NW ¼ of the NW ¼ of the NW ¼; then
T. 20 South, R. 55 East	28	NE ¼ of the NE ¼, running southwest through the SE ¼ of the NE ¼, SW ¼ of the NE ¼, NW ¼ of the NW ¼ of the SE ¼, NE ¼ of the SW ¼, and NW ¼ of the SE ¼ of the SW ¼, to the SW ¼ of the SW ¼, then
T. 20 South, R. 55 East	33	NW ¼ of the NW ¼ of the NW ¼; then
T. 20 South, R. 55 East	32	NE ¼ of the NE ¼, running southwest through the SW ¼ of the NE ¼, and NE ¼ of the SW ¼, to the SW ¼ of the SW ¼, then
T. 20 South, R. 55 East	31	SE ¼ of the SE ¼ of the SE ¼, then

T. 21 South, R. 55 East	06	NE ¼ of the NE ¼, running southwest through the SW ¼ of the NE ¼, and NE ¼ of the SW ¼, to the SW ¼ of the SW ¼, then
T. 21 South, R. 54 East	12	NE ¼ of the NE ¼ of the NE ¼, ending at the SW ¼ of the NE ¼ of the NE ¼.

Table 2-2: Proposed Operation, Control, and Maintenance Facilities Legal Land Description

Township and Range	Section	Aliquot Part
T. 21 South, R. 54 East	01	S ½ of the SE ¼ of the SE ¼, running northwest through the NW ¼ of the SE ¼ of the SW ¼ of the SE ¼, N ½ of the SW ¼ of the SE ¼, NE ¼ of the SE ¼ of the SW ¼, and SW ¼ of the SW ¼ of the NE ¼ of the SW ¼, to connect with the existing VEA line in the SE ¼ of the NW ¼ of the SW ¼.

Table 2-3: Transmission Interconnection Line Legal Land Description

Township and Range	Section	Aliquot Part
Existing Transmission to be Upgraded		
T. 21 South, R. 54 East	01	NW ¼ of the SW ¼, running to the SW ¼ of the NW ¼
T. 21 South, R. 54 East	02	NE ¼ of the S ½ of the NE ¼, through the N ½ of the NE ¼, running to the N ½ of the NW ¼
New Transmission Connection to Gamebird Switch Station		
T. 21 South, R. 54 East	02	N Section border of the NW ¼ of the NW ¼
T. 21 South, R. 54 East	03	N Section border of the NE ¼, and N Section border of the NE ¼ of the NW ¼
T. 20 South, R. 54 East	34	Running north/south in the E ½ of the W ½ of the SW ¼
Existing Transmission to be Removed		
T. 20 South, R. 54 East	34	SE ¼ running to the NE ¼ of the SW ¼
T. 20 South, R. 54 East	35	SW ¼ of the SW ¼

2.1.1 Rail Corridor

The rail line corridor will consist of a permanent ROW approximately 5.5 miles long and 40 feet wide (26 acres). The corridor includes the rail line, an access road, an electricity regulation system (parallel overhead catenary transmission line), a mid-slope spur rail to be used as a turnout, and drainage management features. Carpenter Canyon Road crossing will include standard railway signage and flashing lights, while other established crossings will contain warning signage. Loop Boundary road, and the northeast end of the rail corridor, will be rerouted for a short section to merge with the proposed trackside maintenance road to eliminate two rail crossings without impeding existing public land travel routes.

Shuttle trains, each comprised of two electric locomotives and two cars carrying concrete masses, will ascend and descend the rail line at slow speeds, to either take electricity off the grid (on the ascent), or supply electricity to the grid (on the descent), depending on the immediate electrical demands being placed on the VEA electrical grid.

2.1.2 Operations, Control, and Maintenance Facilities

Operations, control, and maintenance facilities will be constructed in an area perpendicular to the southwestern end of the rail corridor to provide operations, control, and shuttle train maintenance support. This area will be approximately one acre.

2.1.3 Transmission

A new 230 kilovolt (kV) transmission line will be constructed and operated by VEA, connecting the Proposed Project to the regional electrical grid. This interconnection will include a substation at the southwestern end of the rail line, an interconnection connecting the substation to the existing VEA 230kV transmission line, the existing VEA 230_kV transmission line requiring upgrades to support the facility, two new transmission line sections connecting the existing VEA 230_kV transmission line to the existing Gamebird Switch Station, removal of the section of VEA transmission line bypassing the Gamebird Switch Station, and an expansion of the existing VEA Gamebird Switch Station.

The existing VEA 230 kV transmission line will require upgrades to support the new power distribution line. The support structures currently in place are not able to support a third line.

A new access road for the operations, control, and maintenance facility at the southwestern end of the rail corridor will follow the new and existing transmission routes, to minimize additional new disturbance. The existing roads will need to be upgraded to accommodate anticipated construction vehicle traffic. Carpenter Canyon Road will be used (approximately 1.3 miles) to access Nevada State Highway 160 from the transmission road.

Laydown yards and other temporary ROW areas will be required and will be identified prior to the environmental review process. Wherever possible, the construction related disturbance areas will utilize areas of permanent disturbance, i.e. facilities area, rail corridor, etc.

2.2 Proposed Mitigation Measures

The following subsections describe the measures proposed by ARES to avoid and minimize the potential adverse effects to the desert tortoise resulting from the REM facility construction and operation. Project security staff will be located onsite 24-hours a day during construction as well as operation for public safety and to ensure mitigation rules are followed.

2.2.1 Construction Mitigation Measures

This section lists the measures intended to minimize the potential for the taking of the desert tortoise which could be implemented during construction of the Proposed Project.

If approved in the USFWS Biological Opinion, the following desert tortoise protection measures would be incorporated into the Construction, Operation and Maintenance Plan.

- At least one USFWS approved Authorized Biologist will be onsite during construction activity. Any Biological Monitors onsite to assist with the relocating of tortoises will work under the direct supervision of the Authorized Biologist.
- Tortoises will only be handled by USFWS Authorized Biologists, or by a monitor under the direct supervision of an Authorized Biologist.
- Should a desert tortoise or nest be discovered, construction activities will cease until the tortoise moves from the area on its own, is moved from harm's way, or the nest (if applicable) is relocated.

- Tortoises moved offsite and released into undisturbed habitat on public land must be placed in the shade of a shrub, in a natural unoccupied burrow similar to the one in which it was found, or in an artificially constructed burrow in accordance with tortoise handling protocols.
- During all handling procedures, desert tortoises shall be treated in a manner to ensure they do not overheat or exhibit signs of overheating (e.g., gaping, foaming at the mouth, etc.), or are placed in a situation where they cannot maintain surface and core temperatures necessary to their well-being. Desert tortoises shall be kept shaded at all times until it is safe to release them. For the purposes of this permit, ambient air temperature shall be measured in the shade, protected from wind, at a height of five centimeters above the ground surface.
- If tortoise proof fencing is not utilized, the Authorized Biologist or Monitor will be present during all site activities that have potential to disturb soil, vegetation, and wildlife. The Authorized Biologist or monitor will walk immediately ahead of equipment during brush removal and grading activities in unfenced habitat to ensure no tortoises are harmed.
- Any burrows that can be avoided will be flagged and all project vehicles, equipment, and activities will avoid the area. If a burrow is not avoidable, it will be cleared in accordance with the measures outlined in the Biological Opinion.
- The area underneath all vehicles or equipment will be checked for tortoises before the vehicles or equipment is moved.
- BLM wildlife staff and USFWS will be notified of any desert tortoise death or injury due to the project implementation by close of business on the following work day. Any other reporting requirements detailed in the Biological Opinion will also be adhered to.
- A BLM/USFWS approved biologist will present a tortoise education program to all foremen, workers, permittees and other employees or participants involved on projects covered under the Biological Opinion. The program will consist of either a presentation or fact sheet as determined by project level consultation between BLM and USFWS. The program or fact sheet will include information on the life history of the desert tortoise, legal protection for desert tortoises, penalties for violations of federal and state laws, general tortoise activity patterns, reporting requirements, measures to protect tortoises, terms and conditions of the Biological Opinion, and personal measures employees can take to promote the conservation of desert tortoises.
- All appropriate state and federal permits, including NDOW and USFWS permits for handling desert tortoises or their parts, must be acquired by the tortoise biologists or other personnel before project initiation and prior to handling any desert tortoise or their parts, or conducting any activity requiring a permit.
- The project proponent or permittee will submit a document to BLM wildlife biologist within 30 days of completion of the project construction showing the number of acres disturbed, remuneration fees paid, and number of tortoises observed or taken, which includes capture and displacement, killed, injured, or harassed by other means.
- Overnight parking and storage of equipment and materials, including stockpiling, will be within previously disturbed area or within project areas cleared by a tortoise biologist.
- Workers and project related individuals will be encouraged to carpool to and from the project site.
- Water applied to dirt roads and construction areas (trenches or spoil piles) for dust abatement will use the minimal amount needed to meet safety and air quality standards in an effort to prevent the formation of puddles, which could attract desert tortoises and common ravens to construction sites. During regular tortoise surveying duties, water application will be monitored to ensure

puddles do not develop. Appropriate actions will be taken to reduce water application if standing water is observed.

- Litter control will be implemented and enforced by the project proponent. During construction all trash and food related waste will be placed in predator-proof containers and removed daily from the site. Trash, litter, project debris, etc. will be transferred to a designated solid waste disposal facility. Vehicles hauling trash must be secured to prevent litter from blowing out along the road.
- Workers will not feed wildlife.
- Speed limits will be posted at 15 miles per hour or below for construction traffic on all roads within the Action Area. Within Clark and Nye Counties, the speed limit is 25 miles per hour on unposted County or dirt roads; this speed will be established for all other activities at all times.
- Vehicle traffic shall be restricted to existing access roads, unless otherwise authorized by the BLM and USFWS.
- Sand, gravel, and other material generated from cut activities within the project area will be used for fill and road construction to the extent possible. Necessary materials not collected from the site will be purchased from a permitted commercial source.
- The boundaries of all areas to be disturbed (including staging areas, access roads, and sites for temporary placement of spoils) will be delineated with flagging prior to construction activities. All disturbances, vehicles, and equipment will be confined to the flagged area.
- A BLM representative shall be designated who will be responsible for overseeing compliance with the reasonable and prudent measures, terms and conditions, reporting requirements, and reinitiating requirements contained in the Biological Opinion.
- Temporary disturbance areas will be restored in accordance with BLM restoration protocols for the project.

2.2.2 Operations Mitigation Measures

- To minimize habitat fragmentation impacts, a tortoise crossing will be installed every mile along the rail. These crossings will be constructed to allow a tortoise to walk up and over the rails. Each of these crossings will also have the railroad ties spaced to allow a tortoise to 'fall' between the ties and walk out from under the rail line should the tortoise become trapped between the rails.
- Multiple culverts and draining crossings will be incorporated into the railway design. Although these culverts will allow wildlife to cross under the rail line, it is unlikely a tortoise would use the culverts as they will be long enough to not necessarily allow daylight from one side to be seen from the other side.
- Within Clark and Nye Counties, the speed limit is 25 miles per hour on unposted County or dirt roads; this speed will be established for all activities at all times.
- A BLM representative shall be designated who will be responsible for overseeing compliance with the reasonable and prudent measures, terms and conditions, reporting requirements, and reinitiating requirements contained in the Biological Opinion.
- Litter control will be implemented and enforced by the project proponent. All trash and food related waste will be placed in predator-proof containers (or within closed containers inside closed buildings) and removed as appropriate from the site. Trash, litter, project debris, etc. will be transferred to a designated solid waste disposal facility. Vehicles hauling trash must be secured to prevent litter from blowing out along the road.

- Workers will not feed wildlife.
- Sand, gravel, and other material generated from cut activities within the project area will be used for road maintenance to the extent possible. Necessary materials not collected from the site will be purchased from a permitted commercial source.

2.2.3 Rehabilitation

Rehabilitation is included in the Proposed Action, at the end of the life cycle for the project, and will be required and completed per BLM guidelines.

- Affected areas will be re-vegetated and reclaimed to resemble their current state.
- All structures associated with the rail line will be removed by the project proponent and recycled, repurposed, or disposed of using current standards for demolition and disposal in Nevada.
- Coordination will occur with BLM to restore the original contour and vegetation of the land. Seeding will be conducted using BLM-recommended seed mixes.

Material used for the operation of the facility will be recycled to the greatest extent possible upon removal.

2.3 Vegetation

An evaluation of botanical resources was conducted to determine if any state or federal-listed special status plants or associated habitat occurred in the Project area. Studies included obtaining and reviewing data from the state and federal agencies, reviewing maps, aerial photographs, and published literature.

Botanical surveys of the Action Area were conducted on April 27 and May 25, 2014. Fieldwork was conducted at that time to coincide with the evident and identifiable period of special status plants with the potential to occur within the Project area.

Parallel transects in Action Area and buffer area were walked by the team, the entire 150 acres of the potential project impact area as well as an additional 175 acres of buffer area, to search for special status plants. The existing transmission route, where VEA will need to conduct upgrades, and the two Gamebird Switch Station interconnections, were included in the Action Area survey.

Plant species observed were identified on-site. No protected, sensitive, threatened or listed plants were observed during the survey. No noxious weeds were observed during the survey. The full botanical survey summary report is included as Appendix A.

2.4 Ongoing Activities

There are currently no other developments or ongoing actions in the vicinity of the Action Area. The general area contains multiple maintained and non-maintained dirt roads; the most significant road is Carpenter Canyon Road which is regularly graded and well maintained. Vehicles travel this road daily, based on field operations. Carpenter Canyon Road, Loop Boundary Road, and several smaller and two-track dirt roads cross the Action Area and will need to be considered in project design. Cross desert single track trails will not be provided rail crossings.

Carpenter Canyon Road, where it intersects Nevada State Highway 160, will provide access to the existing transmission line maintenance road, which will be upgraded to allow for construction vehicle access. There is a BLM fire station located on Carpenter Canyon Road, less than one mile east of the intersection with Nevada State Highway 160.

3 LISTED SPECIES AND CRITICAL HABITAT IN THE ACTION AREA

ESA listed species occurring within the Action Area, or may be affected by the proposed action include the Mojave desert tortoise (*Gopherus agassizii*). No other ESA listed species or species habitat were found to occur in the project area.

The Proposed Project is located within the Eastern Mojave Desert Tortoise Recovery Unit. No critical habitat occurs within the Action Area (USFWS, 2011). The Action Area does contain desert tortoise habitat. The southern and western portions of the Action Area (transmission and operations infrastructure) have an average elevation of 945 meters (3,100 feet); the rail corridor rises from 1,020 meters to 1,630 meters (3,345 to 5,345 feet), acceptable elevations for the desert tortoise, and the necessary vegetation community to support a desert tortoise population. However, the transition from creosote-bursage into a yucca and blackbrush community is usually associated with very low density tortoise populations.

The Mojave desert tortoise was listed as an endangered species by the USFWS in August, 1989, with the final rule dated April 2, 1990 (USFWS, 1990). The tortoise was listed due to degradation and loss of habitat resulting from human activities and development, and increased mortality from disease. Current drought conditions in the southwest may have a role in exacerbating the decline in desert tortoise populations. The Mojave desert tortoise is also classified as a State Protected and Threatened species in Nevada.

Adult tortoises live 25 to 35 years, but may live as long as 80 years. Adult tortoises can weigh 3 to 7 kilograms (7 to 15 pounds), reach a mean carapace length of 180 to 380 millimeters (7 to 15 inches) and a height of 100 to 150 millimeters (4 to 6 inches). Their diet consists mainly of cacti, wildflowers, and grasses. Female tortoises will lay 1 to 14 eggs, which have an incubation period of 90 to 120 days. Desert tortoises can spend up to 95% of their lives underground, including a period of hibernation (brumation) during the colder winter months. The most active season for desert tortoises is March to June and September to October (USFWS, 2014).

Desert tortoise presence/absence surveys were conducted at the site in May, September, and October 2014. Surveys were completed by biologists Barrett Scurlock, Erika Balderson, Beth Hewitt, Ryan Hewitt, and Jennifer Hill. The full desert tortoise presence/absence survey summary report is included as Appendix B.

4 ENVIRONMENTAL BASELINE CONDITIONS

The environmental baseline conditions of the Action Area consist of mainly undisturbed desert. NRS 527.060-120 and Nevada Administrative Code (NAC) Chapter 527 dictate the protection of, and regulate the removal or possession of, cacti and yucca. As requested by the BLM, a count of the potentially impacted cacti and yucca plants in the Project area was made.

The seven species of cacti and three species of yucca observed during the surveys are listed in Table 4-1, including the total counts for each.

Table 4-1. Botanical Survey Results – Cacti and Yucca

common name (<i>Species</i>)	Totals
silver cholla (<i>Cylindropuntia echinocarpa</i>)	1,010
hedgehog cactus (<i>Echinocereus engelmannii</i>)	955
cottontop cactus (<i>Echinocactus polycephalus</i>)	181
desert spinystar (<i>Escobaria vivipara</i> var. <i>deserti</i>)	19
barrel cactus (<i>Ferocactus cylindraceus</i>)	17
fishhook cactus (<i>Mammillaria tetrancistra</i>)	1
beavertail cactus (<i>Opuntia basilaris</i>)	484
banana yucca (<i>Yucca baccata</i>)	75
Joshua tree (<i>Yucca brevifolia</i>)	4,800
Mojave yucca (<i>Yucca schidigera</i>)	5,351
Totals	12,893

The main shrubs present at the lower slopes of the site included creosote bush (*Larrea tridentata*) and white burrobush (*Ambrosia dumosa*). The upper slopes of the site contained creosote and white burrobush mixed with blackbrush (*Coleogyne ramosissima*). The average height of these shrubs was one to three feet in height. A variety of other common shrubs and grasses were scattered throughout the site and consisted of the following:

- white burrobush (*Ambrosia dumosa*)
- fourwing saltbush (*Atriplex canescens*)
- shadscale saltbush (*Atriplex confertifolia*)
- cheatgrass (*Bromus tectorum*)
- yellow rabbitbrush (*Chrysothamnus viscidiflorus*)
- blackbrush (*Coleogyne ramosissima*)
- pencil cholla (*Cylindropuntia ramosissima*)
- cottontop cactus (*Echinocactus polycephalus*)
- Nevada jointfir (*Ephedra nevadensis*)
- Mormon tea (*Ephedra viridis*)
- narrowleaf goldenbush (*Ericameria linearifolia*)
- green rabbitbrush (*Ericameria teretifolia*)
- trumpet buckwheat (*Eriogonum inflatum*)
- broom snakeweed (*Gutierrezia sarothrae*)
- threadleaf snakeweed (*Gutierrezia microcephala*)
- burrobrush (*Hymenoclea salsola*)
- juniper (*Juniperus spp.*)
- littleleaf ratany (*Krameria erecta*)
- winterfat (*Krascheninnikovia lanata*)
- box thorn (*Lycium spp.*)
- spiny menodora (*Menodora spinescens*)
- cholla (*Opuntia* or *Cylindropuntia spp.*)
- big galleta (*Pleuraphis rigida*)
- singleleaf pinyon (*Pinus monophylla*)
- Mojave indigobush (*Psorothamnus arborescens*)
- Fremont's dalea (*Psorothamnus fremontii*)
- Mexican bladdersage (*Salazaria mexicana*)
- banana yucca (*Yucca baccata*)

- Joshua tree (*Yucca brevifolia*)
- Mojave yucca (*Yucca schidigera*)

During desert tortoise presence/absence surveys, one live tortoise was observed on bare ground within the proposed project boundary in the southeast ¼ of Section 32, Township 20 South, Range 55 East, on September 30, 2014. No other live tortoises were observed within the proposed project boundary. Desert tortoise sign was observed in all Sections comprising the proposed project site with the exception of Township 20 South, Range 55 East, Section 22 (see Figure 6). All categories of tortoise sign were observed (burrows, pallets, scat, carcasses, and footprints). Evidence of nesting from a previous year was observed with the presence of small eggshell fragments on one Class 3 burrow apron. The desert tortoise presence/absence survey summary report was submitted to the BLM on October 15, 2014.

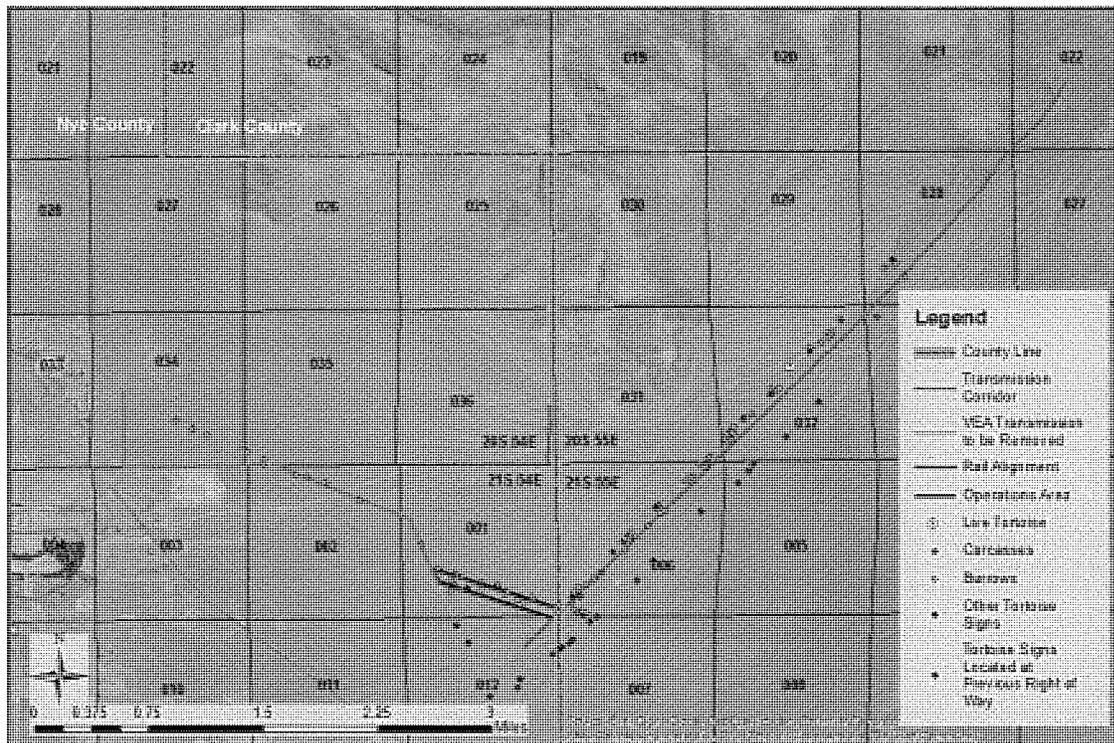


Figure 6. Tortoise sign observed during pedestrian survey.

The action area is not located within designated critical habitat for the desert tortoise. Unique to this area is also the Large Scale Tortoise Translocation area located in Trout Canyon and to the north and east of the Proposed ROW, encompassing a majority of the rail corridor. The use of this Translocation area could introduce a higher number of desert tortoises to the Project Area than would otherwise normally be encountered, thus increasing the chances for an encounter.

Utilizing the USFWS pre-project survey protocol density calculation table, the number of tortoises anticipated to utilize the Action Area is two, with a 95% confidence interval range of one to ten (see Figure 7). Above ground probability value for drought conditions was used, based on Western Regional Climate Center rainfall data for Pahrump, Nevada (Western Regional Climate Center, 2014).

Table 3. USFWS Desert Tortoise Pre-Project Survey Guidance	
What is the estimated number of tortoises and associated 95% confidence interval for the action area?	
INSTRUCTIONS Use this tab when your transects were of unequal Enter the appropriate values from the survey into the yellow cells below. The number of tortoises and associated 95% confidence interval for the action area will be calculated.	
N =	2.4
Lower 95%CI =	0.59
Upper 95%CI =	9.73
Total action area (acres)	150
Prob that a tort is above ground given winter rainfall (Pa from Table 2) =	0.640
Total length of transects walked (km) =	63
Number of transects walked =	27
Number of tortoises found during surveys (n) =	1

Figure 7. USFWS desert tortoise population estimation determination table.

Human activity in the area includes a maintenance road and transmission line running through the southern end of the site; State Highway 160 to the southwest; the town of Pahrump, Nevada to the east; and a car/motorcycle racetrack including over six miles of track located to the northwest. Carpenter Canyon Road and a fence line road cross the site. Vehicle tracks were also observed along washes in the Site.

5 EFFECTS OF THE ACTION

It has been determined, through biological and botanical surveys, that the only ESA listed species likely present on the site is the desert tortoise. Coordination with BLM will occur just before and during project construction to salvage and re-plant cactus and yucca, if required.

5.1 Direct Effects

Direct effects are those that are caused by the proposed action and occur at the same time and place. No federally listed plants occur within the action area; therefore, no direct effects to federally listed plants are expected to occur as a result of project implementation.

Historical survey data indicate that the area surrounding the project site ranges from very low to very high density tortoise habitat. Desert tortoise survey data show live tortoise and tortoise sign within and in close proximity to the Proposed Project.

Desert tortoises were translocated east of the Project to the Trout Canyon Large Scale Translocation Site in 2013 and 2104. The translocation site encompasses approximately 59,000 acres of public lands managed by the BLM and 1,144 acres of the Spring Mountain National Recreation Area (part of the Humboldt-Toiyabe National Forest) managed by the U.S. Forest Service within Clark County, Nevada (Averill-Murray, Field, Allison, & Germano, January 2013). The translocation site occurs outside of designated critical habitat, but it does lie within a block of contiguous desert tortoise habitat that may be valuable for population connectivity. The site is bordered on the south by Nevada State Highway 160, and extends to the 1,250 meter elevation line in the Spring Mountains to the north. The remaining boundaries are open to adjacent land, and include a western boundary which runs North-South along the current Clark and Nye County line and an eastern boundary which follows the west bank of Lovell Wash (see

Figure 8). This places the rail corridor within the boundary of the Trout Canyon Large Scale Translocation Site.

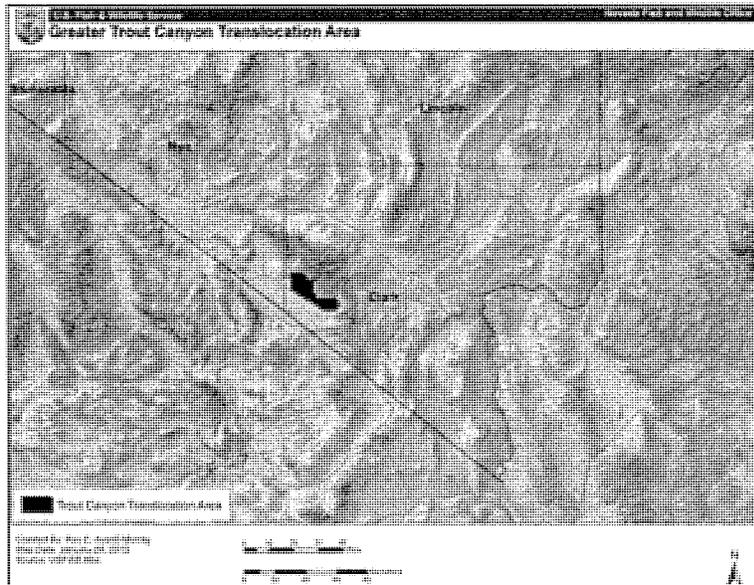


Figure 8. Greater Trout Canyon Translocation Area in relation to southern Nevada (Averill-Murray, Field, Allison, & Germano, January 2013).

The Proposed Action may not result in adverse impacts to local or regional genetic connectivity of the desert tortoise population. A modeled connectivity area (least cost corridor) is located northwestern of the project area (Averill-Murray, Darst, Strout, & Wong, 2013). However, according to the same Averill-Murray study, approximately 123 acres of the Proposed Action could be considered a least cost corridor.

Construction of the Project will result in the disturbance of approximately 117 acres (permanent and temporary disturbance areas) of previously undisturbed land. Construction will be on-going for a period of approximately six to eight months, and will include earth movement; drainage provisions; construction of buildings in the facilities area; construction of the rail line and access roads; and transmissions upgrades. Upon completion of construction, traffic to and from the site will include staff traveling to operate the Project seven days a week, for the life of the Project, or about 30 to 40 years. Weekday staff will consist of approximately five personnel, with three staff members expected on-site on nights and weekends. The facility will be staffed 24-hours a day.

Clearance surveys may be conducted for cactus and yucca prior to the start of construction. These surveys would occur in concert with Mojave desert tortoise (*Gopherus agassizii*) clearance surveys, and will be based on findings from the initial botanical and biological surveys. During clearance surveys, target species will be flagged using a color coded system for removal and salvage. Each plant tagged will have its location recorded in Universal Transverse Mercator (UTM) Zone 11, NAD83 projection and datum.

During the life of the project, the REM facility would permanently remove about 69 acres of desert tortoise habitat. Some of this acreage may already be considered non-habitat where the VEA transmission line and associated maintenance road already exist. Additional temporary disturbance areas are anticipated to add up to 95 acres. Temporary ROW areas will be required and are identified in the current Environmental Assessment (submitted to the BLM on June 8, 2015). These areas will be determined by the construction contractor.

Desert tortoises may be adversely affected during clearing, grubbing, mowing, grading, and trenching activities or may become entrapped within open trenches (if necessary) or holes. Project actions could result in direct mortality, wounding, injury, or harassment of individuals as a result of encounters with vehicles or heavy equipment in the Action Area. The Proposed Action contains measures to minimize or eliminate the effects from vehicles straying from designated access roads or designated areas into adjacent habitat (see Section 2.2 Proposed Mitigation Measures). Other direct effects may include individual tortoises being crushed or entombed in their burrows, disruption of tortoise behavior during construction or operation of facilities, disturbance by noise or vibrations from the heavy equipment, and trash that may attract predators such as such as ravens and coyotes. A worker and visitor education program would minimize but not eliminate these potential effects. Desert tortoises may also be attracted to the construction area by application of water for dust control, placing them at higher risk of injury or mortality.

Increased human activity and vehicle travel would occur from the construction and improvement of access roads, which could disturb, injure, or kill individual tortoises. Based on minimization measures, this effect would be reduced to harass and capture, as the animals would be found and moved out of the way.

Installation of exclusionary fencing during construction could result in direct effects such as mortality, injury, or harassment of desert tortoises due to equipment operation, installation activities, removal of tortoise burrows, and tortoise relocation. The fencing would preclude desert tortoises from re-entering the work areas. The fence would also result in fragmentation of habitat and individual home ranges, as well as greatly increasing the acreage of temporary disturbance. While fencing the entire disturbance area during construction of the Project may prevent the direct mortality of individual tortoises, the total area of habitat that is lost could have negative impacts on tortoise populations.

Capturing, handling, and relocating desert tortoises from the proposed site after the installation of the fencing would result in the capture and harassment of tortoises, and may also result in death or physical injury. Tortoises moved outside their home ranges would likely attempt to return to the area from which they were moved, making it difficult to remove them from the potential adverse effects associated with project construction. Removal of habitat within a tortoise's home range or segregating individuals from their home range with a fence would likely result in displacement stress that could result in loss of health, exposure, increased risk of predation, and death. Although many minimization measures are proposed, tortoises may die or become physically injured, particularly during extreme temperatures or if they void their bladders during handling. Tortoises that do not void their bladders during handling have an increased survival rate, versus those that do void, of 5% to 13% (Averill-Murray, 2002). If multiple desert tortoises are handled by biologists without the use of appropriate protective measures and procedures, such as reusing latex gloves, pathogens may be spread among the tortoises. Minimization measures for this project will identify appropriate handling temperatures and techniques and require the use of latex gloves (single use only) while handling tortoises. Therefore the impact to individual tortoises should be reduced to the greatest extent practicable.

The 5.5 miles linear nature of the Project itself could also contribute to habitat fragmentation, similar to a road. Increased habitat fragmentation caused by new roads, ground disturbance under transmission lines, and other linear corridors, can create barriers to movement that could negatively affect population dynamics. Roads and other linear corridors subdivide contiguous habitat, creating smaller and more isolated tortoise populations. These smaller, isolated populations are more susceptible to decline or local extinction due to drought or other unpredictable events, as well as the negative effects of inbreeding. Much of this affect can be mitigated through the installation of tortoise crossings, providing ways for tortoises to cross the rail lines which include 'escape routes' between railroad ties should a tortoise be caught between the rails. Culverts will also be installed to allow for as close to normal water flows

through the area as possible. Some of these could also be utilized by tortoises to migrate east/west, if the culverts are built to tortoise preferred dimensions (e.g. allow daylight to be visible from either side).

Increased human access to and presence in the desert due to new facilities could benefit the common raven (*Corvus corax*), considered to be a “subsidized predator” of juvenile desert tortoise (Kristan & Boarman, 2003). Ravens are able to take advantage of human-provided food and water sources, such as trash generated on-site, roadkill created by increased vehicle traffic, and standing water created by dust suppression techniques. It is unlikely this project will increase the raven population in the area, as Carpenter Canyon Road is used daily by the public and the Town of Pahrump is adjacent to the Action Area. However, infrastructure, such as fencing, buildings, and transmission lines, could create elevated perches that could be used by ravens to hunt tortoises in the area more effectively. Coyote (*Canis latrans*) predation on desert tortoise is an additional concern, especially in conditions of prolonged drought which can result in a decline in prey species, such as jack rabbits and ground squirrels.

Upon final closure of the project, all structures associated with the rail line will be removed by ARES and recycled, repurposed, or disposed of using current standards for demolition and disposal in Nevada. Most of the steel used in the operation of the Proposed Project (rail lines) can be recycled. The land will be reclaimed according to current BLM standards. Coordination will occur with BLM to restore the original contour and vegetation of the land. Native plants will be salvaged for re-vegetation, if appropriate, and seeding will be conducted using BLM-recommended seed mixes.

The project restoration process is expected to have a similar impact to the desert tortoise population as construction. Variance in the level of direct impacts to tortoises would be due to population fluctuations based on seasonal conditions different than those experienced during and years prior to project construction.

At the end of the Project life, the affected areas will be re-vegetated and reclaimed to resemble their current state, per consultation with the BLM.

5.2 Indirect Effects

Indirect effects are those that are caused by, or result from, the Proposed Action and are later in time, but reasonably certain to occur. In contrast to direct effects, indirect effects are more subtle, and may affect individuals and populations and habitat quality over an extended period of time, long after construction activities have been completed. Indirect effects are of particular concern for long-lived species such as the desert tortoise because project-related effects may not become evident in individuals or populations until years later.

Habitat quality in the Action Area may be reduced with the potential introduction of invasive plant species. Additionally, any introduction of noxious weeds could lead to increased wildfire frequency (Brooks, Grace, Keeley, & Pyke, 2004). Other potential indirect effects include any permanently fenced area acting as barriers that would impede long-term natural movements of tortoises attempting to return to original home ranges and burrows.

The potential for severe long-term effects include collisions and collections along the access road, maintenance road, and increased public use of Carpenter Canyon Road where vehicle frequency and speed is generally greatest. Additional effects may occur from public use of the new maintenance road and any unauthorized trail creation and off-highway vehicle use. The proposed ARES REM facility would be a novel and unique project and could attract public curiosity resulting in greater disturbance of the surrounding habitat and potential collection and other take of desert tortoise.

Human activities may provide food in the form of trash or water that could increase the number of tortoise predators including the common raven, desert kit fox, feral dogs, and coyote. Facility infrastructure such as power poles associated with the new gen-tie or trackside catenary line could provide perching and nesting opportunities for ravens. Natural predation rates may be altered or increased when natural habitats are disturbed or modified. Common raven populations in some areas of the Mojave Desert have increased 1,500% from 1968 to 1988 in response to expanding human use of the desert (Boarman, 2002). Since ravens were scarce in the Mojave Desert prior to 1940, the current level of raven predation on juvenile desert tortoises is considered to be an unnatural occurrence (BLM, 1990). Dogs brought to the project site by visitors (staff will not be allowed to bring pets to the site) over the life of the ROW may harass, injure, or kill desert tortoises, particularly if allowed off leash to roam freely.

In conclusion, the indirect effects of the project will likely occur for the duration of the ROW grant and will be a continual stressor on the reproductive health and population in the action area.

6 CUMULATIVE EFFECTS

“Cumulative impacts”, as defined by the Council of Environmental Quality [40 C.F.R. §1508.7], are the impacts on the environment which result from the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts are distinct from “cumulative effects”, as defined by the ESA [50 C.F.R. § 402.02], which are those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area.

There are currently no known planned federal activities for the Carpenter Canyon area. The Trout Canyon area, approximately five miles southeast of the Action Area, was the site of a 2013 BLM desert tortoise translocation project. Additional translocation activities are not planned for this area.

The Proposed Project would have a long term impact on 69 acres of desert tortoise habitat. Additionally, the Project has the potential to impact translocated tortoises which have dispersed throughout and beyond the borders of the Trout Canyon Large Scale Translocation area. Desert tortoises found in the Project ROW would not be translocated to other locations; tortoises encountered during construction would be moved out of harm’s way in adjacent habitat by an Authorized Biologist.

Because habitat for the southwestern willow flycatcher and the yellow-billed cuckoo does not occur within or near the project area, the Proposed Action, in conjunction with other projects, would not contribute to cumulative impacts on habitat for these listed bird species.

The combined effects of the reasonably foreseeable future actions do have the potential to increase risk of mortality of individual animals within the cumulative impacts area.

7 CONCLUSION

In conclusion, we have determined that the proposed action “may affect, likely to adversely affect” the Mojave desert tortoise (*Gopherus agassizii*) population of the Carpenter Canyon area. The Proposed Action is not expected to jeopardize the continued existence of the species or result in the destruction or adverse modification of critical habitat.

Based on these findings, Formal Consultation with USFWS is requested.

REFERENCES

- Averill-Murray, R. C. (2002). Effects on Survival of Desert Tortoises (*Gopherus agassizii*) Urinating During Handling. *Chelonian Conservation and Biology*, pp. 4:430-435.
- Averill-Murray, R. C., Darst, C. R., Strout, N., & Wong, M. (2013). Conserving Population Linkages for the Mojave Desert Tortoise (*Gopherus agassizii*). *Herpetological Conservation and Biology* 8(1), 1-15.
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- BLM. (1990). *Draft Raven Management Plan for the California Desert Conservatoin Area*. April 1990.
- Boarman, W. I. (2002). *Reducing Predation by Common Ravens on Desert Tortoises in the Mojave and Colorado Deserts*. Sacramento, CA: U.S. Geological Survey, Western Ecological Research Center.
- Brooks, M. L., Grace, J. B., Keeley, J. E., & Pyke, D. A. (2004). Effets of Invasive Alien Plants on Fire Regimes. *BioScience*, pp. 54(7):677-688.
- Kristan, W. B., & Boarman, W. I. (2003). Spatial Pattern of Risk of Common Raven Predation on Desert Tortoises. *Ecology*, 84(9):2432-2443.
- USFWS. (1990). Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Mojave Population of the Desert Tortoise. *Federal Register*, pp. 55:12178-12191.
- USFWS. (2011). *Revised Recovery Plan for the Mojave Population of the Desert Tortoise (Gopherus agassizii)*. Sacramento, CA: Region 8, Pacific Southwest Region, U.S. Fish and Wildlife Service.
- USFWS. (2014). *Mojave Desert Tortoise*. Retrieved from USFWS Nevada Fish & Wildlife Office: http://www.fws.gov/nevada/desert_tortoise/dt/dt_life.html. Accessed August 14, 2014
- Western Regional Climate Center. (2014). Pahrump, Nevada Monthly Sum of Precipitation. *Accessed online October 2, 2014*, <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?nv5890>.

LIST OF CONTACTS MADE

Bureau of Land Management

- Mark Chandler, Renewable Energy Coordination Office
- Nancy Christ, Renewable Energy Coordination Office
- Melanie Cota, Wildlife Biologist
- Fred Edwards, Botanist/Range and Forestry Program Lead
- Greg Helseth, Renewable Energy Coordination Office
- Vanessa Hice, Assistant Field Manager
- Mark Slaughter, Assistant Field Manager
- Kerri-Anne Thorpe, Realty Specialist

California Independent System Operator

- Linda Wright, Senior Interconnection Specialist

Clark County

- Tim Dahl, Nye County Public Works
- Jared Tasko, Clark County Department of Comprehensive Planning

Federal Railroad Administration

- Cheech Smialek, Chief Inspector, FRA Region 7

Nevada Department of Wildlife

- Brad Hardenbrook, Supervisory Habitat Biologist
- Anthony Miller,
- Chet Van Dellen, GIS Coordinator

Nevada Natural Heritage Program

- Eric Miskow, Data Manager

Nye County

- Darrell Lacy, Nye County Planning
- Jaynee Reeves, Nye County Administration

Public Utilities Commission – State of Nevada

- Tammy Cordova, Staff Counsel
- Mark Harris, Manager Resource Planning

US Fish and Wildlife

- Michael Burroughs

EXHIBIT G

BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

NOTICE OF APPLICATION

ARES Nevada, LLC (“ARES”) filed with the Public Utilities Commission of Nevada (“PUCN”) an application for a permit to construct utility facilities, namely two 230 kilovolt (“kV”) transmission facilities, a related Advanced Rail Energy Storage Regulation Energy Management facility (the “REM Project”), and appurtenant substations and related electrical facilities within unincorporated counties of Nye and Clark, Nevada. This request for a permit to construct utility facilities has been filed with the PUCN pursuant to the Utility Environmental Protection Act (“UEPA”) under Nevada Revised Statutes (“NRS”) chapter 704, sections 820 to 900 and Nevada Administrative Code chapter 703, sections 415 to 427.

NOTICE OF APPLICATION FOR A PERMIT TO CONSTRUCT NEW TRANSMISSION FACILITIES AND RELATED ANCILLARY FACILITIES UNDER UEPA.

Notice is hereby given to persons residing in the municipalities in which the utility facilities to be constructed will be located. ARES will request a permit to construct the following utility facilities as part of the REM Project: (1) A new electrical substation (the “ARES Substation”) within the project footprint; (2) A new 3,870 foot 230 kV transmission line connecting the ARES Substation to the existing Valley Electric Association, Inc. (“VEA”) transmission line; (3) A new 6,260 foot 230 kV transmission line connecting to VEA’s Gamebird Switch Station; (4) removal of approximately 5,200 feet of existing 230 kV transmission line; (5) a new 5.5 mile rail line for the REM Project; and (6) associated ancillary facilities, including inverters, switchgear, grounding, conduits, electrical wiring, protective relaying systems, circuits, primary and secondary telecommunication systems, an operations building, and related equipment appurtenant to the safe, reliable and cost-effective operation of these new and existing facilities. The new 230 kV transmission facilities will be located in the Carpenter Canyon area, east of Pahrump, Nevada. The alignment for the proposed utility facilities is contained within Township 21 South, Range 54 East, Sections 1, 2, and 12; Township 21 South, Range 55 East, Sections 6 and 7; Township 20 South, Range 55 East, Sections 22, 27, 28, 31, 32 and 33; and Township 20 South, Range 54 East, Sections 34 and 35, which includes 72 acres of permanent and 98 acres of temporary disturbance on BLM lands.

The purpose of the REM Project is to develop a 50MW gravity-based energy storage system that will assist in electricity supply management and transmission system stability and reliability on the regional electrical transmission grid. The REM Project will not produce more energy than is introduced into its system. The contents of the UEPA Application for the REM Project will include, among other things: (1) A description of the proposed facilities requiring a permit to construct from the PUCN and their location, including a description of any associated equipment proposed for the facilities, diagrams of the structures involved in the proposed utility facilities, and appropriately scaled maps of the location of the facilities; (2) An environmental statement

that describes the environmental characteristics of the project area, the potential environmental impacts from the construction and specific mitigation measures to be implemented to reduce those impacts to a less-than-significant level; and (3) A list of federal, state, regional and local agencies whose approval may be required for the proposed utility facilities. The UEPA application will be filed under and governed by the provisions of the UEPA. Protests and written comments about the granting of the UEPA application must be filed with the PUCN as provided by law. DATED this 22nd day of March, 2016 ARES Nevada, LLC.

PUB: March 23, 2016 LV Review-Journal and March 25, 2016 Pahrump Valley Times

EXHIBIT H

AFFIDAVIT OF PUBLICATION

STATE OF NEVADA)
COUNTY OF CLARK) SS:

**MCDONALD CARANO WILSON LLP
STE 1200
2300 W SAHARA AVE
LAS VEGAS NV 89102-4395**

**Account # 22377
Ad Number 0000756477**

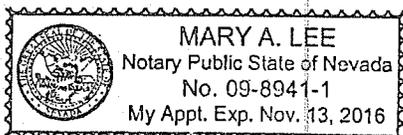
Eileen Gallagher, being 1st duly sworn, deposes and says: That she is the Legal Clerk for the Las Vegas Review-Journal and the Las Vegas Sun, daily newspapers regularly issued, published and circulated in the City of Las Vegas, County of Clark, State of Nevada, and that the advertisement, a true copy attached for, was continuously published in said Las Vegas Review-Journal and / or Las Vegas Sun in 1 edition(s) of said newspaper issued from 03/23/2016 to 03/23/2016, on the following days:

03 / 23 / 16

Eileen Gallagher
IS/ LEGAL ADVERTISEMENT REPRESENTATIVE

Subscribed and sworn to before me on this 22nd day of March, 2016

Notary *Mary Lee*



BEFORE THE PUBLIC UTILITIES
COMMISSION OF NEVADA

NOTICE OF APPLICATION

ARES Nevada, LLC ("ARES") filed with the Public Utilities Commission of Nevada ("PUCN") an application for a permit to construct utility facilities, namely two 230 kilovolt ("kV") transmission facilities, a related Advanced Rail Energy Storage Regulation Energy Management facility (the "REM Project"), and appurtenant substations and related electrical facilities within unincorporated counties of Nye and Clark, Nevada. This request for a permit to construct utility facilities has been filed with the PUCN pursuant to the Utility Environmental Protection Act ("UEPA") under Nevada Revised Statutes ("NRS") chapter 704, sections 820 to 900 and Nevada Administrative Code chapter 703, sections 415 to 427.

NOTICE OF APPLICATION FOR
A PERMIT TO CONSTRUCT
NEW TRANSMISSION
FACILITIES AND RELATED
ANCILLARY FACILITIES UNDER
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The purpose of the REM Project is to develop a 50MW gravity-based energy storage system that will assist in electricity supply management and transmission system stability and reliability on the regional electrical transmission grid. The REM Project will not produce more energy than is introduced into its system. The contents of the UEPA Application for the REM Project will include, among other things: (1) A description of the proposed facilities requiring a permit to construct from the PUCN and their location, including a description of any associated equipment proposed for the facilities, diagrams of the structures involved in the proposed utility facilities, and appropriately scaled maps of the location of the facilities; (2) An environmental statement that describes the environmental characteristics of the project area, the potential environmental impacts from the construction and specific mitigation measures to be implemented to reduce those impacts to a less-than-significant level; and (3) A list of federal, state, regional and local agencies whose approval may be required for the proposed utility facilities. The UEPA application will be filed under and governed by the provisions of the UEPA. Protests and written comments about the granting of the UEPA application must be filed with the PUCN as provided by law. DATED this 22nd day of March, 2016 ARES Nevada, LLC.

PUB: March 23, 2016
LV Review Journal

AFFIDAVIT OF PUBLICATION

STATE OF NEVADA)
COUNTY OF NYE) SS:

MCDONALD CARANO WILSON LLP
STE 1200
2300 W SAHARA AVE
LAS VEGAS NV 89102-4395

Account # 22377
Ad Number 0000757356

Charlotte Uyeno, being 1st duly sworn, deposes and says: That she is the Legal Clerk for the Pahrump Valley Times, a bi-weekly newspaper regularly issued, published and circulated in the Town of Pahrump, County of Nye, State of Nevada, and that the advertisement, a true copy attached for, was published in said Pahrump Valley Times in 1 edition(s) of said newspaper issued from 03/25/2016 to 03/25/2016, on the following days:

03 / 25 / 16

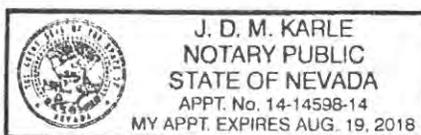
PUC ARES REM Project

SEE ATTACHED

Charlotte Uyeno
/s/ _____
LEGAL ADVERTISEMENT REPRESENTATIVE

Subscribed and sworn to before me on this 25th day of March, 2016

Notary *J. D. M. Karle*



**BEFORE THE PUBLIC UTILITIES COMMISSION OF
NEVADA**

NOTICE OF APPLICATION

ARES Nevada, LLC ("ARES") filed with the Public Utilities Commission of Nevada ("PUCN") an application for a permit to construct utility facilities, namely two 230 kilovolt ("kV") transmission facilities, a related Advanced Rail Energy Storage Regulation Energy Management facility (the "REM Project"), and appurtenant substations and related electrical facilities within unincorporated counties of Nye and Clark, Nevada. This request for a permit to construct utility facilities has been filed with the PUCN pursuant to the Utility Environmental Protection Act ("UEPA") under Nevada Revised Statutes ("NRS") chapter 704, sections 820 to 900 and Nevada Administrative Code chapter 703, sections 415 to 427.

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FACILITIES UNDER UEPA.**

Notice is hereby given to persons residing in the municipalities in which the utility facilities to be constructed will be located. ARES will request a permit to construct the following utility facilities as part of the REM Project: (1) A new electrical substation (the "ARES Substation") within the project footprint; (2) A new 3,870 foot 230 kV transmission line connecting the ARES Substation to the existing Valley Electric Association, Inc. ("VEA") transmission line; (3) A new 6,260 foot 230 kV transmission line connecting to VEA's Gamebird Switch Station; (4) removal of approximately 5,200 feet of existing 230 kV transmission line; (5) a new 5.5 mile rail line for the REM Project; and (6) associated ancillary facilities, including inverters, switchgear, grounding, conduits, electrical wiring, protective relaying systems, circuits, primary and secondary telecommunication systems, an operations building, and related equipment appurtenant to the safe, reliable and cost-effective operation of these new and existing facilities. The new 230 kV transmission facilities will be located in the Carpenter Canyon area, east of Pahrump, Nevada. The alignment for the proposed utility facilities is contained within Township 21 South, Range 54 East, Sections 1, 2, and 12; Township 21 South, Range 55 East, Sections 6 and 7; Township 20 South, Range 55 East, Sections 22, 27, 28, 31, 32 and 33; and Township 20 South, Range 54 East, Sections 34 and 35, which includes 72 acres of permanent and 98 acres of temporary disturbance on BLM lands.

The purpose of the REM Project is to develop a 50MW gravity-based energy storage system that will assist in electricity supply management and transmission system stability and reliability on the regional electrical transmission grid. The REM Project will not produce more energy than is introduced into its system. The contents of the UEPA Application for the REM Project will include, among other things: (1) A description of the proposed facilities requiring a permit to construct from the PUCN and their location, including a description of any associated equipment proposed for the facilities, diagrams of the structures involved in the proposed utility facilities, and appropriately scaled maps of the location of the facilities; (2) An environmental statement that describes the environmental characteristics of the project area, the potential environmental impacts from the construction and specific mitigation measures to be implemented to reduce those impacts to a less-than-significant level; and (3) A list of federal, state, regional and local agencies whose approval may be required for the proposed utility facilities. The UEPA application will be filed under and governed by the provisions of the UEPA. Protests and written comments about the granting of the UEPA application must be filed with the PUCN as provided by law. DATED this 25th day of March, 2016 ARES Nevada, LLC.

PUBLISH: Mar. 25, 2016.

EXHIBIT I

1 **BEFORE THE PUBLIC UTILITIES COMMISSON OF NEVADA**

2 Application of ARES Nevada, LLC for a Permit to
3 Construct Two 230KV Transmission Facilities, a
4 Related Advanced Rail Storage Regulation Energy
5 Management Project and other Appurtenant Electrical
6 Environmental Protection Act

Docket No. 14-05006

7 **CERTIFICATE OF SERVICE**

8 Pursuant to NRCP 5(b), I hereby certify that I am an employee of McDONALD CARANO
9 WILSON LLP and that on this date I served a true and correct copy of the foregoing document
10 via electronic mail on each of the parties identified below:

11 Regulatory Staff
12 Public Utilities Commission of Nevada
13 1150 E William Street
14 Carson City, NV 89701
15 Pucn.sc@puc.nv.gov

Tammy Cordova, Staff Counsel
Public Utilities Commission of Nevada
101 Convention Center Drive, Suite 250
Las Vegas, NV 89109
tcordova@puc.nv.gov

15 Lynn Goya
16 Clark County Clerk
17 Regional Justice Center
18 201 E. Clark Ave.
19 Las Vegas, NV 89101
20 clerkem@clarkcountynv.gov

Eric Witkoski
Attorney General's Office
Bureau of Consumer Protection
555 E Washington Ave., Suite 3900
Las Vegas, NV 89101
ewitkoski@ag.nv.gov

19 Department of Conservation and Natural
20 Resources
21 Nevada Clearing House
22 901 S. Stewart Street, Suite 5003
23 Carson City, NV 89701
24 nevadaclearinghouse@lands.nv.gov

Sandra Merlino
Nye County Clerk
1520 E. Basin Ave., Suite 108
Pahrump, NV 89060
smerlino@co.nye.nv.us

23 ///

24 ///

25 ///

26 ///

27 ///

28 ///

 **McDONALD-CARANO-WILSON**
100 WEST LIBERTY STREET, 10TH FLOOR • RENO, NEVADA 89501
P.O. BOX 2670 • RENO, NEVADA 89505-2670
PHONE: 775-788-2000 • FAX: 775-788-2020

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Attorney General's Office
Bureau of Consumer Protection
100 N. Carson Street
Carson City, NV 89701
bcpserv@ag.nv.gov

Department of Conservation and Natural
Resources
Nevada Dept. of Administrator of Nevada
Division of Environmental Protection
901 S. Stewart St., #4001
Carson City, NV 89701
Demme@ndep.nv.gov

Dated: March 25, 2016.

By: 
Leah Jennings

 MCDONALD-CARANO-WILSON
100 WEST LIBERTY STREET, 10TH FLOOR • RENO, NEVADA 89501
P.O. BOX 2670 • RENO, NEVADA 89505-2670
PHONE 775-788-2000 • FAX 775-788-2020

EXHIBIT J



Valley Electric Association, Inc.

A Touchstone Energy® Cooperative 

August 23, 2013

Ms. Nancy Christ, Project Manager
Bureau of Land Management
4701 North Torrey Pines
Las Vegas, NV 89130

RE: ARES Project

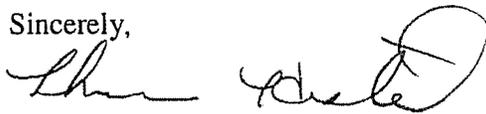
Dear Ms. Christ,

This letter serves to confirm Valley Electric Association's knowledge of, and commitment of support and cooperation with, the proposed Advanced Rail Energy Storage (ARES) project.

The Valley Electric team has had numerous meetings with the ARES team and is working with them to provide the resources necessary for this grid scale energy storage project to become a reality and to succeed. We believe that ARES energy storage capability is the optimal use of the proposed site.

If you have any questions or need additional information, please do not hesitate to contact me.

Sincerely,



Thomas Husted
Chief Executive Officer
775-757-2139

Cc: Francesca Cava, ARES
Jim Kelley, ARES
Erika Balderson, BEC Environmental, Inc.



Nye County
Nuclear Waste Repository Project Office
2101 E. Calvada Blvd., Ste. #100 • Pahrump, Nevada 89048
(775) 727-7727 • Fax (775) 727-7919

October 30, 2013

Mr. Mark Chandler
Bureau of Land Management
4701 North Torrey Pines
Las Vegas, NV 89130

Dear Mr. Chandler:

RE: ARES Project in Nye County

This letter serves to confirm Nye County, Nevada's support of Advanced Rail Energy Storage's (ARES) project to develop and test an automated steel rail network with energy storage technology in the Carpenter Canyon Area in Nye and Clark Counties.

Nye County has met with the ARES team numerous times and is working to provide information for locally required permits, easements and dedications to help facilitate development of the project. Nye County understands this project is an innovative way to store energy and to enable reliable transmission of intermittent renewable energy across the regional grid. The County also anticipates this project will be economically advantageous for the County as it will require up to 125 workers to construct the project and 12 permanent workers once the project is fully operational.

If you have any questions or would like additional information, please feel free to contact me at (775) 727-7727.

Best Regards,

A handwritten signature in cursive script that reads "Darrell Lacy".

Darrell Lacy
Department Director
Nye County Nuclear Waste Repository Project Office



United States Department of the Interior



BUREAU OF LAND MANAGEMENT
Southern Nevada District Office
Las Vegas Field Office
4701 North Torrey Pines Drive
Las Vegas, Nevada 89130-2301
<http://www.blm.gov/nv>

In Reply Refer to:
N-92514
2800 (NVS01000)

FEB 24 2016

CERTIFIED MAIL 9171 9690 0935 0096 2679 88 - RETURN RECEIPT REQUESTED

ARES
Attn: James A. Kelly
Chief Executive Officer
854 Jimeno Road
Santa Barbara, CA 93103

Dear Mr. Kelly:

Your right-of-way (ROW) application for a Regulation Energy Management Facility, gravity based Energy Storage System; Rail Line corridor with overhead catenary powerline, Mid-elevation tracks for this system, a 230 kV transmission line, road access, a substation, Operations controls and maintenance facilities, and other related facilities on public lands was submitted to this office on December 13, 2013. This application has been assigned serial number N-92514. Please refer to this number for all future correspondence relating to this project.

Rent for use of public lands must be paid in advance and prior to issuance of the ROW. Rent for a ROW is based on a schedule that is adjusted annually per the Implicit Price Deflator (IPD), and inflation index. According to 43 CFR 2806.24(a) (ii), if your annual rent is \$500.00 or greater, you may pay annually or at 10-year intervals, not to exceed the term of the grant. The partial year rent from April 1, 2016, through December 31, 2016, is \$6,766.44. (See enclosed statement and calculation sheet).

In accordance with U.S. Fish and Wildlife Service Biological Opinion File Number: 84320-2016-F-0010 and 84320-2010-F-0365.R003, applicants shall pay an off-site tortoise mitigation fee at the rate of **\$849.00** per acre for projects occurring outside of the exclusionary zone. The total mitigation fees due for this project is **\$89,994.00** (106 acres x **\$849.00** per acre). Please be aware, you may not conduct any activities, nor begin construction on public land until you have paid the tortoise mitigation fees. The mitigation fees shall be directly deposited into the Desert Tortoise Habitat Conservation Fund, administered by the Bureau of Land Management, Nevada. Payment shall be made by certified check or money order payable to the Bureau of Land Management, and delivered to:

DOI/BLM
Attn: Information Access Center
The Bureau of Land Management
1340 Financial Boulevard
Reno, Nevada 89502

For public health and safety and to cover any losses, damages, or injury to human health, the environment or property, the BLM has determined that a bond is necessary. As provided in 43 CFR 2805.12(g), a construction and reclamation bond, acceptable to the authorized officer shall be furnished by the holder prior to authorization of the grant or at such earlier date as specified by the Authorized Officer. The amount of this bond shall be determined by the Authorized Officer. ARES will need to submit a Reclamation Cost Estimate (RCE). Prior to authorization of this grant, the BLM must receive a surety or cash bond based on the RCE total amount, and it must remain in effect until removal of improvements, and reclamation of your surface disturbance within the ROW area has been approved by the Authorized officer.

Enclosed are two duplicate originals of ROW grant N-92514, for your approval and signature. Please review the documents, sign and date both copies, and return them to the address shown above within 30 days of receipt of this letter. Upon our receipt of the signed documents and rental fee as discussed above, we will issue the ROW absent any other unresolved issues. Please return the signed copies and the required fees within 30 days of receipt of this letter. If this requirement is not met, your application may be denied.

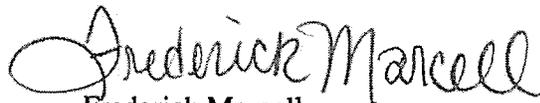
Please note that issuance of the ROW grant will not authorize ARES to begin ground disturbing activities. Said activities will require a notice to proceed (NTP). Issuance of a NTP will be contingent upon ARES providing each item as noted in the stipulation of the right-of-way grant.

If you have any questions, please contact Gregory L Helseth, Project Manager, by email at ghelseth@blm.gov or by phone at (702) 515-5173.

Sincerely,



Deborah MacNeill
Field Manager
Pahrump Field Office



Frederick Marcell
Assistant Field Manager (Detail)
Division of Lands

Enclosures

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
RIGHT-OF-WAY GRANT/TEMPORARY USE PERMIT

Issuing Office
Las Vegas District
Serial Number
N-92514

1. A (right-of-way) (permit) is hereby granted pursuant to:
 - a. Title V of the Federal Land Policy and Management Act of October 21, 1976 (90 Stat. 2776 43 U.S.C. 1761);
 - b. Section 28 of the Mineral Leasing Act of 1920, as amended (30 U.S.C. 185);
 - c. Other (describe) .

2. Nature of Interest:

- a. By this instrument, the holder, ARES Nevada, LLC, receives a right to construct, operate, maintain, and terminate a Regulation Energy Management Facility gravity based Energy Storage System, Rail Line corridor with overhead catenary powerline, Mid elevation tracks for this system, a 230 kV transmission line, road access, a substation, Operations controls and maintenance facilities, and other related facilities on public lands described as follows:

Mount Diablo Meridian, Nevada

Legal description and map Exhibit B attached hereto and made a part hereof.

A map showing the location of the right-of-way is on file with the Bureau of Land Management, Las Vegas District, in case file N-92514.

2. The right-of-way or permit area granted herein contains 106 acres, more or less. In Clark County 76 acres, more or less and in Nye County 30 acres, more or less. See Legal description and map
3. This instrument shall terminate on: December 31, 2046, unless prior thereto, it is relinquished, abandoned, terminated, or modified pursuant to the terms and conditions of this instrument or of any applicable Federal law or regulation.
4. This instrument may may not be renewed. If renewed, the right-of-way or permit shall be subject to the regulations existing at the time of renewal and any other terms and conditions that the authorized officer deems necessary to protect the public interest.
5. Notwithstanding the expiration of this instrument or any renewal thereof, early relinquishment, abandonment, or termination, the provisions of this instrument, to the extent applicable, shall continue in effect and shall be binding on the holder, its successors, or assigns, until they have fully satisfied the obligations and/or liabilities accruing herein before or on account of the expiration, or prior termination, of the grant.

3. Rental:

For and in consideration of the rights granted, the holder agrees to pay the Bureau of Land Management fair market value rental as determined by the authorized officer unless specifically exempted from such payment by regulation. Provided, however, that the rental may be adjusted by the authorized officer, whenever necessary, to reflect changes in the fair market rental value as determined by the application

of sound business management principles, and so far as practicable and feasible, in accordance with comparable commercial practices.

4. Terms and Conditions:

- a. This grant or permit is issued subject to the holder's compliance with all applicable regulations contained in Title 43 Code of Federal Regulations parts 2800 and 2880.
- b. Upon grant termination by the authorized officer, all improvements shall be removed from the public lands within 120 days, or otherwise disposed of as provided in paragraph (4)(d) or as directed by the authorized officer.
- c. Each grant issued pursuant to the authority of paragraph (1)(a) for a term of 20 years or more shall, at a minimum, be reviewed by the authorized officer at the end of the 20th year and at regular intervals thereafter not to exceed 10 years. Provided, however, that a right-of-way or permit granted herein may be reviewed at any time deemed necessary by the authorized officer.
- d. The stipulations, plans, maps, or designs set forth in Exhibits A, B, and C, are incorporated into and made a part of this grant instrument as fully and effectively as if they were set forth herein in their entirety.
- e. Failure of the holder to comply with applicable law or any provision of this right-of-way grant or permit shall constitute grounds for suspension or termination thereof.
- f. The holder shall perform all operations in a good and workmanlike manner so as to ensure protection of the environment and the health and safety of the public.
- g. A Notice to Proceed will be issued to the holder upon satisfactory completion of the terms and conditions, stipulations of the ROW grant, desert tortoise mitigation fee, monitoring fee, and rental fees must be paid in advance.

IN WITNESS WHEREOF, The undersigned agrees to the terms and conditions of this right-of-way grant or permit.

(Signature of Holder)

Vanessa L. Hice

(Title)

Assistant Field Manager Division of Lands
(Title)

(Date)

(Effective Date of Grant)

Deborah J MacNeill

Field Manager Pahrump Field Office
(Title)

(Effective Date of Grant)

Exhibit A

Stipulations N-92514

1. The holder shall construct, operate, and maintain the facilities, improvements, and structures within this right-of-way in strict conformity with the approved Plan of Development, as amended or supplemented by approval of the Authorized Officer. Any surface disturbing activity, additional construction, or use that is not in accord with the approved Plan of Development shall not be initiated without the prior written approval of the Authorized Officer. A copy of the complete right-of-way lease/grant, including all stipulations and approved Plan of Development, shall be made available on the right-of-way area during construction, operation, and decommissioning. Noncompliance with the above will be grounds for immediate temporary suspension of activities if it constitutes a threat to public health or safety or the environment.
2. The holder shall comply with the Biological Opinion 84320-2016-F-0010 and 84320-2010-F-0365.R003 for listed and proposed species associated with this project signed by the US Fish and Wildlife Service on February 9, 2016, and as may be amended. Failure to comply with the requirements of the Biological Opinion shall be cause for suspension or termination of the right-of-way lease/grant.
3. Any unanticipated cultural resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.
4. The holder shall immediately notify the BLM Authorized Officer of any paleontological resources discovered as a result of operations under this authorization. The holder shall suspend all activities in the immediate area of such discovery until notified to proceed by the Authorized Officer, and shall protect the locality from damage or looting. The Authorized Officer will evaluate, or will have evaluated, such discoveries as soon as possible, but not later than 5 working days after being notified. Appropriate measures to mitigate adverse effects to significant paleontological resources will be determined by the Authorized Officer after consulting with the holder. The holder is responsible for the cost of any investigation necessary for the evaluation and for any mitigation measures, including museum curation associated with assessing the investigation. The holder may not be required to suspend operations if activities can avoid further impacts to a discovered locality or be continued elsewhere, however not suspending operations must be approved by the Authorized Officer.

Although unlikely, any human remains that may be discovered during authorized activities shall be protected by all Project personnel and construction crew members by following the procedures set forth in Section VI of the October 26, 2009, State Protocol Agreement between the BLM and the Nevada State Historic Preservation Office. This includes at a minimum: 1) it is the responsibility of the holder to notify the BLM authorized contracting officer and archaeologist immediately, 2) cease all construction activities within a 100 meter buffer area, and 3) to ensure protection of the discovery from further damage or vandalism until a BLM-authorized archaeologist evaluates the nature of the materials. If needed, mitigation procedures will be developed by the BLM in consultation with the State Historic Preservation Office.

5. All power lines shall be designed and constructed to be avian-safe in accordance with "Suggested Practices for Avian Protection on Power Lines: the State of the Art in 2006" (APLIC 2006). The holder shall assume the burden and expense of proving that pole designs are "eagle safe." Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modifications or additions to all power line structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.
6. The holder will arrange and attend preconstruction conference(s) prior to the holder's commencing construction and/or surface disturbing activities on the right-of-way or specific construction phase of the right-of-way as specified by the Authorized Officer. The holder and/or his representatives will attend this conference. The holder's contractor, or agents involved with construction and/or any surface disturbing activities associated with the right-of-way, will also attend this conference to review the stipulations of the authorization, including the Plan of Development, as applicable. The holder shall notify the Authorized Officer of the schedule for any preconstruction conference at least 10 calendar days in advance of the preconstruction conference or such timeframe as may be required by the Notice to Proceed.
7. The holder shall designate a representative who shall have the authority to act upon and to implement instructions from the Authorized Officer. The holder's representative shall be available for communication with the Authorized Officer within a reasonable time when construction or other surface disturbing activities are underway.
8. The holder shall protect all survey markers found within the right-of-way. Survey markers include, but are not limited to, Public Land Survey System line and corner markers, other property boundary line and corner markers, and horizontal and vertical geodetic monuments. In the event of obliteration or disturbance of any of the above, the holder shall immediately report the incident, in writing, to the Authorized Officer and the respective installing authority if known. Where any of the above survey markers are obliterated or disturbed during operations, the Authorized Officer will determine how the marker is to be restored. The holder will be instructed to secure the services of a registered land surveyor or informed that an official survey will be executed by the Bureau of Land Management (BLM). All surveying activities will be in conformance with the Manual of Surveying Instructions and appropriate State laws and regulations. Surveys by registered land surveyors will be examined by the Authorized Officer and the BLM State Office Chief Cadastral Surveyor for conformance with the Manual of Surveying Instructions and State laws and regulations before being filed in the appropriate State or county offices of record. The holder shall be responsible for all administrative and survey costs.
9. Use of pesticides and herbicides shall comply with all applicable Federal and State laws. Pesticides and herbicides shall be used only in accordance with their registered uses within limitations imposed by the Secretary of the Interior. Prior to the use of the pesticides, the holder shall obtain from the Authorized Officer, written approval of a Pesticide Use Proposal Plan showing the type and quantity of material to be used, pest(s) to be controlled, method of application, locations of storage and disposal of containers, and any other information deemed necessary by the Authorized Officer.
10. Only those chemicals (pesticides and herbicides) listed on the BLM approved label list are authorized for use on public lands. A Pesticide Use Proposal must be submitted for each chemical used, and it cannot be used until approval has been obtained in writing from the Authorized Officer. The proposal needs to identify any surfactants or dyes used in the spraying operation. Applicator(s) of chemicals used must have completed pesticide certification training and have a current up to date Certified Pesticide Applicator's License. Pesticide and herbicide application records for the areas and acres treated must be submitted to the Authorized Officer each year. This includes the following:

Brand or Product name:
EPA registration number
Total amount applied (use rate #A.I./acre)
Date of application
Location of application
Size of area treated
Method of treatment (air/ground)
Name of applicator
Certification number and dates
Costs to treatment
Amount of surfactants or dyes used in spraying operation
The record information must be recorded no later than 14 calendar days following the pesticide or herbicide application and must be maintained for ten years.

11. Construction sites shall be maintained in a sanitary condition at all times; waste materials at those sites shall be disposed of promptly at an appropriate waste disposal site. 'Waste' means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment. A litter policing program shall be implemented by the holder which covers all roads and sites associated with the right-of-way.
12. The holder shall comply with all applicable Federal, State, and local laws and regulations, existing or hereafter enacted or promulgated, with regard to any hazardous materials, as defined by 43 CFR 2801.5 that will be used, produced, or transported on or within the right-of-way, or used in the construction, operation, maintenance, or decommissioning of the right-of-way or any of its facilities. The holder agrees in accordance with 43 CFR 2807.12(e) to fully indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601 et seq., or the Resource Conservation and Recovery Act of 1976, 42 U.S.C. 6901 et seq.) in connection with the holder's use and occupancy of the right-of-way, whether or not the release is authorized under the grant. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.
13. The holder shall immediately report any release of hazardous substances (leaks, spills, etc.) caused by the holder or third parties in excess of the reportable quantity as required by federal, state, or local laws and regulations. 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.
14. The holder shall immediately notify the Authorized Officer of any release of hazardous substances, toxic substances, or hazardous waste on or near the right-of-way or potentially affecting the right-of-way of which the holder is aware. As required by law, the holder shall have responsibility for and shall take all action(s) necessary to fully remediate and address the hazardous substance(s) on or emanating from the right-of way.
15. Within 120 calendar days of completion of construction, the holder shall submit to the Authorized Officer, as-built drawings and a certification of construction verifying that the facility has been constructed in accordance with the design, plans, specifications, and applicable laws and regulations.
16. Within 90 days of construction completion, the holder shall provide the Authorized Officer with data in a format compatible with the Bureau's Arc-Info Geographic Information System to accurately locate and identify the right-of-way:

Acceptable data formats are:

Corrected Global Positioning System files with sub-meter accuracy or better, in UTM NAD 83; Zone 11; ARCGIS export files on a CD ROM, shapefile, geodatabase.

Data may be submitted in any of the following formats:

ARCGIS interchange, shapefile or geodatabase format.

CD ROM in compressed or uncompressed format.

All data shall include metadata for coverage, and conform to the Content Standards for Digital Geospatial Metadata Federal Geographic Data Committee standards. Contact the GIS Department at (702) 515-5000.

17. The holder shall be liable for all fire suppression costs resulting from fires caused during construction or operations. All guidelines and restrictions imposed by agency fire control officials will be followed. The following fire prevention measures shall be implemented by the holder or its contractor during construction:
- a. Maintain a list of all relevant firefighting authorities near the project site. The closest resources to respond to a wildland fire threatening the community of Pahrump would come from Pahrump Fire Department Station in Pahrump;
 - b. Have and maintain available fire suppression equipment in all construction areas, including but not limited to: water trucks, potable water pumps, and chemical fire extinguishers. Ensure an adequate supply of fire extinguishers for welding and brushing crews;
 - c. Include mechanisms for fire suppression in all heavy equipment, including fire extinguishers and, as applicable, spark arresters or turbo-charging (which eliminates sparks in exhaust);
 - d. Remove any flammable wastes generated during construction on a regular basis; Vegetation clearing shall be accomplished in a manner that reduces vegetation and does not create a fire hazard; Store all flammable materials used at the construction site; Allow smoking only in designated smoking areas; and Require all work crews to park vehicles away from flammable vegetation, such as dry grass and brush. At the end of each workday, heavy equipment should be parked over mineral soil, asphalt, or concrete, where available, to reduce the chance of fire.
18. The holder shall, prior to construction activities, provide the Authorized Officer the following to be issued a Notice to Proceed:
- a. Revised Plan of Development
 - b. Performance and Reclamation Bond
 - c. Site Restoration Plan
 - d. Traffic Management Plan
 - e. Integrated Weed Management Plan
 - f. Decommissioning and Site Reclamation Plan (part of bond)
 - g. Site Rehabilitation and Restoration Plan (part of bond)
 - h. Dust Abatement Plan
 - i. Spill Prevention and Emergency Response Plan
 - j. Health and Safety Program
 - k. Hazardous materials and Waste Management Plan
 - l. Surface Water Quality Management Plan
 - m. Lighting Plan
 - n. Traffic Management Plan
 - o. Worker Education and Awareness Plan
 - p. Fire Management Plan
 - q. Raven Management Plan (BLM's Version)
 - r. Stormwater Pollution Prevention Plan
 - s. Proof of Tortoise Fees Paid
 - t. Cactus and Yucca salvage plan

19. The holder shall submit for approval to the Authorized Officer a Revised Plan of Development that is reflective of the activities authorized in the right-of-way lease/grant. The holder shall ensure that the following elements are contained within the Revised Plan of Development:
20. The holder shall implement existing operation & maintenance procedures. At a minimum, this procedure includes: visual surveys of all structures for scour following major storm events, visual surveys of fencing to check for damage and/or debris, cleanup of broken equipment if failures do occur, including inspection and cleanup of the immediate surroundings areas.
21. Flood risk control measures to be used to minimize impacts during the life of the project. At a minimum, this plan shall include:
 - a. Adaptive management of actions if erosion and sedimentation control measures are found to be insufficient or excessive or if flooding proves to be destructive.
 - b. Any changes must be approved by the Authorized Officer.
22. Measures to reduce night lighting in all natural areas to avoid unnecessary visual disturbance to wildlife. Methods to be implemented include, but are not limited to, shielding methods, and/or reduced lumen intensity.
23. The holder shall develop, and submit for approval by the Authorized Officer, a Site Restoration Plan that describes measures to mitigate and compensate for special status plants such as transplanting/re-seeding and/or compensation in consultation with appropriate agencies (USFWS, BLM, and/or NDOW). The plan will also outline the protocol for the re-vegetation of the portions of the project area that are classified as temporarily impacted. The plan will provide a matrix showing how the holder will address each species considered sensitive in terms of mitigation type (e.g., seed collection, salvage, fencing certain populations). This will include clearly describing how cacti and yucca species will be salvaged, stored, and re-established. The plan will also define success criteria in accordance with agency guidance and outline mitigation measures to be implemented if the success criteria are not met.
24. The holder shall salvage and/or purchase, as directed by BLM, all cactus and yucca plants from temporary and permanent impact areas within right of way lease/grant. The salvage requirements will be described in the Project revegetation plan and will be approved by the BLM prior to construction.
25. The holder shall fund and implement a third party Compliance Program with the Authorized Officer. The Program will include the holder hiring an independent third-party Compliance Inspection Contractor, to be approved by the Authorized Officer, to insure compliance with the terms, conditions and stipulations of this lease/grant, N-92514. All questions or concerns regarding compliance with the terms, conditions, and stipulations of this right-of-way lease/grant shall be directed to the Authorized Officer.
26. The holder will produce, and submit for approval by the Authorized Officer, a Traffic Management Plan that identifies Best Management Practices (BMP) to minimize construction-related traffic impacts. The Traffic Management Plan shall also include the following:
 - a. Deliveries of materials will be scheduled for off-peak hours to reduce effects during periods of peak traffic; Truck traffic will be phased throughout construction; Truck traffic will use designated truck routes when arriving to and departing from the proposed work sites; Signs and public notices regarding construction work will be distributed before disruptions occur, identifying detours to maintain access, the use of flagmen or escort vehicles to control and direct traffic flow, and scheduling roadway work during periods of minimum traffic flow.

27. The holder shall ensure that structures installed as part of the project will be color treated to reduce contrast with the surrounding environment. Structures to be color treated include any walls or enclosed structures installed as part of the project. The holder will work with the Authorized Officer to select the appropriate color from the BLM approved color palette. All color treatments shall be approved by the Authorized Officer prior to any application.
28. The holder shall turn off idling equipment when not in use.
29. The holder shall ensure that construction equipment is maintained per manufacturers' recommendations. The holder shall ensure that all equipment is adequately muffled and maintained, to include: use of noise controls on standard construction equipment and shielding on impact tools, use of broadband noise backup alarms on mobile equipment, and installation of mufflers on exhaust stacks of all diesel and gas-driven engines.
30. The holder shall acquire the appropriate insurance coverage to address potential off-site damage to structures or injury to people by facility structures that are moved off-site by a geologic event such as an earthquake or flash flood event.
31. The holder shall ensure that imported soils are free from contaminants before use on the site. At the request of the Authorized Officer, soils shall be tested (at the cost of the holder) to ensure that hazardous materials are not present within the imported fill.
32. The holder shall ensure that imported soils are consistent in texture and drainage characteristics to existing on-site soils before use on the site. At the request of the Authorized Officer and the expense of the holder, soils will be tested to ensure they are of the same soil type as pre-construction soils.
33. Surveys must be conducted by qualified biologists according to the most current USFWS protocols, where available, by species. These surveys will include surveying mowing areas, brush clearing areas, and ground disturbance areas within habitat deemed suitable for sensitive species by a qualified biologist. These surveys will be conducted for the presence of special status plants, the presence of noxious weeds, and the presence of general and special status wildlife species, to prevent direct loss of vegetation and wildlife and to prevent the spread of noxious plant species. The holder will submit survey results to the Authorized Officer.
34. A Worker Environmental Awareness Program (WEAP) shall be prepared by the holder. All construction crews and contractors will be required to participate in WEAP training prior to starting work on the project. The WEAP training shall include a review of the special status species and other sensitive resources that could exist in the project area, the locations of sensitive biological resources and their legal status and protections, and measures to be implemented for avoidance of these sensitive resources. A record of all trained personnel will be maintained.
35. The holder will ensure that biological monitors monitor and enforce disturbance buffers around all active bird nests (for raptors and species protected by the MBTA) found in project areas during construction. The general bird breeding season for this area is late February to early July. For all non-raptor bird species, biologists will survey within project areas. Because there are no standardized disturbance buffers for active non-raptor bird nests, the holder will consult with the appropriate agency (USFWS).
36. Active bird nests shall not be moved during breeding season, unless the holder is expressly permitted to do so by the USFWS, BLM, or NDOW. All active nests and disturbance or harm to active nests will be reported within 24 hours to the USFWS, the BLM, and NDOW upon detection. The biological monitor will halt work if it is determined that active nests are being disturbed by construction activities, until

further direction or approval to work is obtained from the appropriate agencies.

37. The holder shall implement a Hazardous Materials Handling Management Program or incorporate within their other program the item outlined below. Hazardous materials used and stored onsite will be managed according to the specifications outlined below, in accordance with Federal, State, and local laws and regulations:
38. Hazardous Materials Handling Program. A project-specific hazardous materials management program will be developed prior to initiation of construction. The program will outline proper hazardous materials use, storage, and disposal requirements. The program will identify types of hazardous materials to be used during construction activities. All personnel will be provided with project-specific training. This program will be developed to ensure that all hazardous materials are handled in a safe and environmentally sound manner. Employees handling hazardous materials will receive hazardous materials training and will be trained in: hazardous waste procedures; spill contingencies; waste minimization procedures; and treatment, storage, and disposal facility (TSDF) training in accordance with OSHA Hazard Communication.
39. Transport of Hazardous materials. Hazardous materials that will be transported by truck include fuel (diesel fuel and gasoline), and oils and lubricants for equipment. Containers used to store hazardous materials will be properly labeled and kept in good condition. Written procedures for the transport of hazardous materials used will be established in accordance with U.S. Department of Transportation (USDOT), and Nevada Department of Transportation (NDOT) regulations. A qualified transporter will be selected to comply with federal and state transportation regulations.
40. The holder will ensure that the all health and safety and emergency plans to be required for employees and contractors during construction, operations, and decommissioning of the authorized facility will comply with the Occupational Safety and Health Standards provided in federal regulation 29 CFR, Part 1910, as well as with applicable state and local occupational health and safety regulations.
41. No signs or advertising devices shall be placed on the premises or on adjacent public lands, except those posted by or at the direction of the Authorized Officer.
42. The Holder shall mark the exterior boundaries of the right-of-way with stake and/or lath at 100 to 200 foot intervals. The intervals may be varied at the time of staking at the discretion of the Authorized Officer. The tops of the stakes and/or laths will be painted and the laths flagged in a distinctive color as determined by the holder. The holder shall maintain all boundary stakes and/or laths in place until final cleanup and restoration is completed.
43. The holder shall conduct all activities associated with construction, operation, maintenance and decommission of this right-of-way lease/grant within its authorized limits.
44. The holder shall not violate applicable air standards or related facility sitting standards established by or pursuant to applicable federal, state, or local laws or regulations. The holder shall be responsible for dust abatement within the limits of the right-of-way lease/grant and is responsible for obtaining all necessary permits from appropriate authorities for acceptable dust abatement and control methods (e.g., water, chemicals). The holder shall be solely responsible for all violations of any air quality permit, law or regulation, as a result of its action, inaction, use or occupancy of the right-of-way. Notwithstanding whether a violation of any air quality permit, law or regulation results, the holder will cooperate with the Authorized Officer in implementing and maintaining reasonable and appropriate dust control methods in conformance with law and appropriate to the circumstances at the sole cost of the holder. Prior to relinquishment, abandonment, or decommission of this right-of-way, the holder shall apply reasonable and appropriate dust abatement and control measures to all disturbed areas. The abatement and

measures shall be designed to be effective over the long-term (e.g., rock mulch or other means) and acceptable to the Authorized Officer.

45. During excavation, backfilling, and contouring, the disturbed soil shall be wetted sufficiently in order to effectively reduce airborne dust and reduce soil erosion.
46. The holder shall comply with all applicable local, state, and federal air, water, hazardous substance, solid waste, or other environmental laws and regulations, existing or hereafter enacted or promulgated. To the full extent permissible by law, the holder agrees to indemnify and hold harmless, within the limits, if any, established by state law (as state law exists on the effective date of this right-of-way), the United States against any liability arising from the holder's use or occupancy of the right-of way, regardless of whether the holder has actually developed or caused development to occur on the right-of-way, from the time of the issuance of this right-of-way to the holder, and during the term of this right-of-way lease/grant. This agreement to indemnify and hold harmless the United States against any liability shall apply without regard to whether the liability is caused by the holder, its agents, contractors, or third parties. If the liability is caused by third parties, the holder will pursue legal remedies against such third parties as if the holder were the fee owner of the right-of-way. Notwithstanding any limits to the holder's ability to indemnify and hold harmless the United States which may exist under state law, the holder agrees to bear all responsibility (financial or other) for any and all liability or responsibility of any kind or nature assessed against the United States arising from the holder's use or occupancy of the right-of way regardless of whether the holder has actually developed or caused development to occur on the right-of-way from the time of the issuance of this right-of-way to the holder and during the term of this right-of-way lease/grant.
47. Mineral material generated, and not needed for construction or development activities within the authorized limits of the right-of-way lease/grant, requires a specific BLM use authorization in accordance with regulations at 43 CFR 3600 prior to the removal of in place excess mineral material. All mineral material generated needs to be used on site within the right-of-way lease/grant area or stockpiled on site for sale by the BLM.
48. To prevent undue harm, habitat-altering projects or portions of projects should be scheduled outside bird breeding season. In upland desert habitats and ephemeral washes containing upland species, the season generally occurs between February 15th and August 31st.
49. If a project that may alter any breeding habitat has to occur during the breeding season, then a qualified biologist must survey the area for nests prior to commencement of maintenance activities. This shall include burrowing and ground nesting species in addition to those nesting in vegetation. If any active nests (containing eggs or young) are found, an appropriately-sized buffer area must be avoided until the young birds fledge. As the above dates are a general guideline, if active nests are observed outside this range, they are to be avoided as described above.
50. The holder will be required to pay remuneration fees of \$849/acre for 106 acres, totaling \$89,994.
51. A final Plan of Development (POD) with as-built drawing(s) will be submitted with GPS locations of all transmission poles in the federal corridor at the end of construction.
52. Before constructing in a federal corridor, all transmission crossings will comply with federal regulations. An engineering print signed by a P.E. will be included in the final POD.

EXHIBIT B

LEGAL DESCRIPTION AND MAP

Table 2-1: Proposed Rail Line Corridor Legal Land Description

Township and Range	Section	Aliquot Part
T. 20 South, R. 55 East	22	Begins in SW ¼ of the NE ¼, running southwest through the NW ¼ of the SE ¼, NE ¼ of the SW ¼, and SE ¼ of the SW ¼, to the SW ¼ of the SW ¼; then
T. 20 South, R. 55 East	27	NW ¼ of the NW ¼ of the NW ¼; then
T. 20 South, R. 55 East	28	NE ¼ of the NE ¼, running southwest through the SE ¼ of the NE ¼, SW ¼ of the NE ¼, NW ¼ of the NW ¼ of the SE ¼, NE ¼ of the SW ¼, and NW ¼ of the SE ¼ of the SW ¼, to the SW ¼ of the SW ¼, then
T. 20 South, R. 55 East	33	NW ¼ of the NW ¼ of the NW ¼; then
T. 20 South, R. 55 East	32	NE ¼ of the NE ¼, running southwest through the SW ¼ of the NE ¼, and NE ¼ of the SW ¼, SE¼ of the NW¼ of the SW¼, to the SW ¼ of the SW ¼, then
T. 20 South, R. 55 East	31	SE ¼ of the SE ¼ of the SE ¼, then
T. 21 South, R. 55 East	06	NE ¼ of the NE ¼, running southwest through the SW ¼ of the NE ¼, NE ¼ of the SW ¼, and NW¼ of the SE¼ of the SW¼, to SW ¼ of the SW ¼, then
T. 21 South, R. 55 East	07	NW ¼ of the NW ¼ of the NW ¼, then
T. 21 South, R. 54 East	12	NE ¼ of the NE ¼ of the NE ¼.
T. 21 South, R. 54 East –maintenance siding and spur line	01	SE ¼ of the SE ¼.

Table 2-2: Proposed Operation, Control, and Maintenance Facilities Legal Land Description

Township and Range	Section	Aliquot Part
T. 21 South, R. 54 East –maintenance and control buildings	01	SE ¼ of the SE ¼, of the SE ¼.
T. 21 South, R. 54 East –ARES substation	12	NE ¼ of the NE ¼, of the NE ¼.

Table 2-3: Transmission Interconnection Line Legal Land Description

Township and Range	Section	Aliquot Part
Existing Transmission to be Upgraded		
T. 21 South, R. 54 East	01	NW ¼ of the SW ¼, running to the SW ¼ of the NW ¼
T. 21 South, R. 54 East	02	NE ¼ of the S ½ of the NE ¼, through the N ½ of the NE ¼, running to the N ½ of the NW ¼
New Transmission Connection to Gamebird Switch Station		
T. 21 South, R. 54 East	02	N Section border of the NW ¼ of the NW ¼
T. 21 South, R. 54 East	03	N Section border of the NE ¼, and N Section border of the NE ¼ of the NW ¼
T. 20 South, R. 54 East	34	Running north/south in the E ½ of the W ½ of the SW ¼
Existing Transmission to be Removed		
T. 20 South, R. 54 East	34	SE ¼ running to the NE ¼ of the SW ¼
T. 20 South, R. 54 East	35	SW ¼ of the SW ¼
New Interconnection Connecting ARES Substation to Existing Line		
T. 21 South, R. 54 East	12	Running northwest from the NE ¼ of the NE ¼, of the NE ¼, through
T. 21 South, R. 54 East	01	S ½ of the SE ¼ of the SE ¼, SW ¼ of the SE ¼, N ½ of the SE ¼ of the SW ¼, to the SE ¼ of the NW ¼ of the SW ¼.

ARES Project

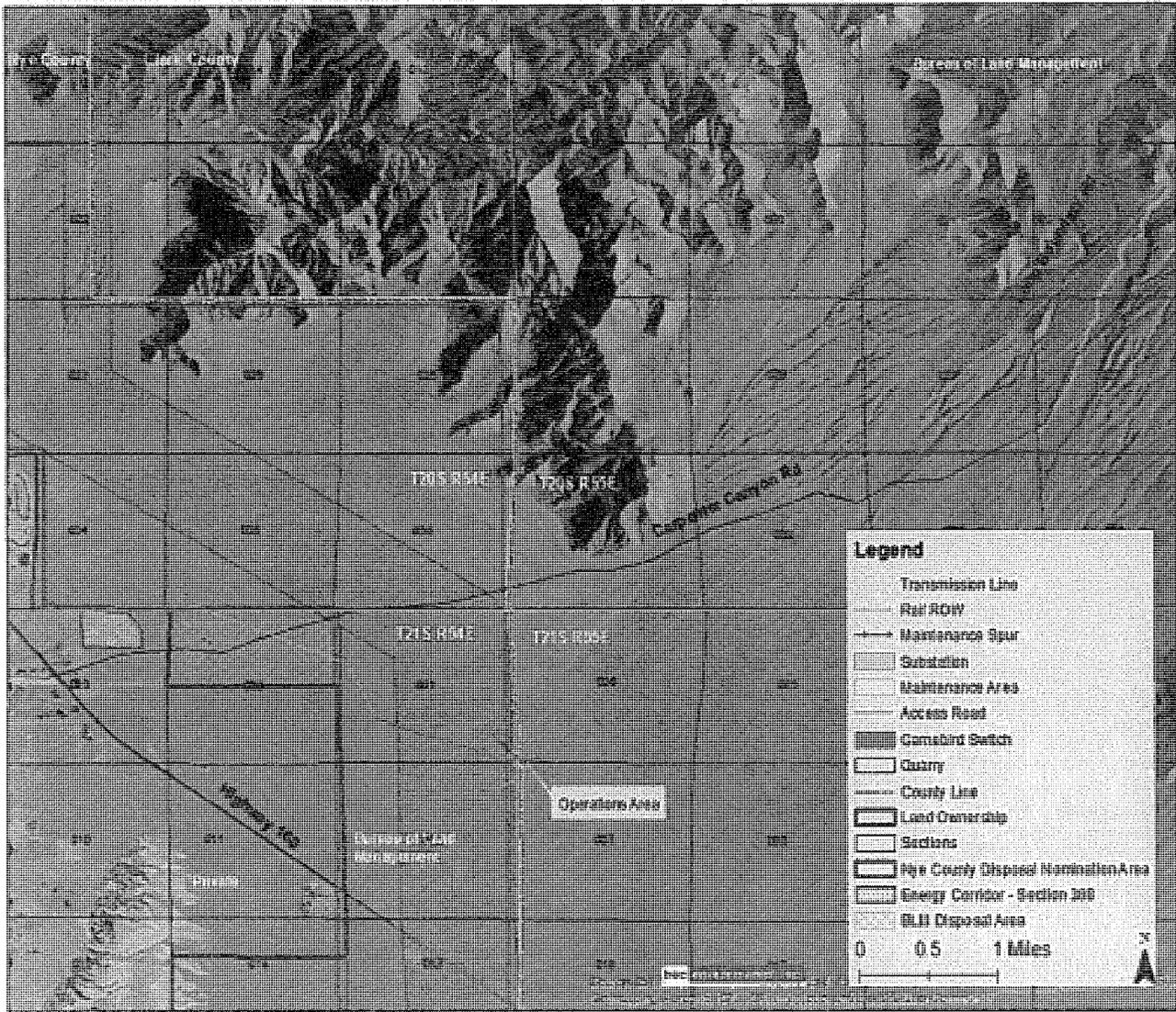


Exhibit C

Mitigation measures from Decision Record

Air Quality

- In accordance with federal air regulations, dust control permits from the Clark County Department of Air Quality (DAQ), for all soil-disturbing activities within Clark County, and Nye County Planning, for all soil-disturbing activities within Nye County, would be required for the Project. Managing fugitive emissions during construction and operation activities will be an adopted design feature and are a requirement for both counties. BLM approved fugitive dust control measures, including the regular application of water to disturbed surfaces, would reduce onsite emissions and serve to keep off-site emission levels reduced. In addition, Clark and/or Nye County may defer management and oversight of the dust control permit to the Nevada Division of Environmental Protection (NDEP), Air Quality Bureau.

Fuels/Fire Management and Noxious Weeds

- Implementation of standard BMPs and project stipulations would help identify, prevent, and treat the spread of noxious and/or invasive species and reduce potential wildfire impacts.
 - An Integrated Weed Management Plan will be prepared by the proponent and approved by the BLM Weed Coordinator. ARES proposes to reduce and control invasive plants within the project area by manual methods, and if necessary and approved by the BLM, herbicides, to lessen the potential for the dispersal or increased abundance of any new noxious weeds.
 - A Fire Protection Plan would be prepared by the proponent and approved by the BLM Southern Nevada District Fire Management Officer to minimize the occurrence of unwanted human-caused and naturally caused fires. The plan would describe an emergency notification procedure, site evacuation process, and fire suppression and prevention procedures. Project personnel shall be instructed as to the individual responsibility of the plan.
- Fire restrictions are generally enacted May through October. Compliance with fire restrictions is mandatory while fire restrictions are in effect. Specific non-compliant activities may be permitted in writing on a case by case basis by a line officer after review and approval by the Fire Management Officer (43 CFR 9212).
- Conditions that support wildfire can occur any time of the year in Southern Nevada. In general and when fire restrictions are not in effect, use standard fire prevention measures and best management practices to prevent fires (43 CFR 2805.12(d) or subsequent revisions). Minimize wildfire risk to assets or infrastructure where needed by maintaining a wildfire defensive space.
- The proponent shall immediately report fires to the BLM or appropriate dispatch center and make all accommodations to allow immediate safe entry of firefighting apparatus and personnel. In the event of a human caused wildfire the proponent will be held responsible for all costs of suppression and damaged resources pending a wildfire Origin and Cause Investigation. 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 proponent shall properly handle and preserve evidence in coordination with the BLM. The proponent shall report to the Fire Investigator or BLM Incident Commander and enter into the fire origin area on BLM fires only when given permission to do so. The proponent will cooperate with the BLM in performance of fire investigation to determine wildfire cause.
- The holder, applicant or proponent shall be liable for damage or injury to the United States to the extent provided by 43 CFR 2807.12. The holder, applicant or proponent shall be held to a standard of strict liability for damage or injury to the United States caused or substantially aggravated by any of the following within the right-of-way or permit area:
 - Activities of the holder, applicant or proponent, including but not limited to construction, operation, maintenance, and termination of the facility.
 - Activities of other parties including but not limited to:

- Land clearing and vegetation removal.
 - Earth-disturbing and earth-moving work.
 - Blasting.
 - Vandalism and sabotage.
- The maximum limitation for such strict liability damages shall not exceed two million dollars (\$2,000,000.00) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which damage or injury occurred. This section shall not impose strict liability for damage or injury resulting primarily from negligent acts or omissions of the United States.
- At the onset of project planning in the NEPA analysis phase, the project proponent or the project lead shall complete an Integrated Weed Management Plan (WMP) which would be prepared and submitted to the BLM for review and approval prior to construction. The WMP is a planning document that acknowledges, assesses, and provides an inventory of weed infestations for treatment. The WMP will recognize the project's impact on vegetation and define the expected treatments and activities necessary to both maintain the determined desired condition for the vegetation community, and control the weeds that may occur within the project area. Should the weed spread beyond the project foot print then these weeds will be treated as a part of the project. This will include access routes.
- The proponent is responsible for weed control on disturbed areas within the limits of the right-of-way. The proponent will consult with the BLM Weed Coordinator for planning acceptable weed control measures on all noxious weed infestations within the limits of the right-of-way. The use of pesticides shall comply with Federal and state laws governing their proper usage, storage and disposal, and any limitations imposed by the Secretary of the Interior.
- The project proponent shall coordinate project activities with the BLM Weed Coordinator (702-515-5000) regarding any proposed pesticide treatment. The project proponent shall prepare, submit, obtain and maintain a pesticide use proposal (PUP) for the proposed action.
- The project proponent shall limit the size of any vegetation and/or ground disturbance to the absolute minimum necessary to perform the activity safely and as designed. The project proponent will avoid creating soil conditions that promote weed germination and establishment.
- The project proponent shall begin project operations in weed free areas whenever feasible before operating in weed-infested areas.
- The project proponent shall 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. The project proponent shall 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.
- BLM or the project proponent shall determine equipment-cleaning sites (if equipment is infested with weed seeds, plant parts or mud and dirt). Project related equipment and machinery (this especially includes the nooks and crannies of undercarriages) will be cleaned using compressed air or water to remove mud, dirt and plant parts before moving into and from relatively weed-free areas. Seeds and plant parts will be collected, bagged and deposited in dumpsters destined for local landfills, when practical.
- 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 in a dumpster for deposit in local landfills. Disposal methods may vary depending on the project. If you have questions consult with the LVFO Noxious Weed Coordinator.
- The project proponent shall evaluate options, including area closures, to regulate the flow of traffic on sites where native vegetation needs to be established.

Floodplains

- Application of proposed design features would reduce floodplain impacts. Surface water protection measures will be taken for runoff and storm events. US Army Corps of Engineers Nationwide Permit 43 applies to stormwater management facilities.

Threatened and Endangered Species

- Project actions will be minimized by following the Reasonable and Prudent Measures and Terms and Conditions as outlined in the appended BLMs Programmatic Biological Opinion (File No. 84320-2010-F-0365.R003) found in Appendix A of this document as well as the following additional mitigation measures:

Design and Construction Mitigation Measures

- During all handling procedures, desert tortoises will be treated in a manner to ensure that they do not overheat or exhibit signs of overheating (e.g., gaping, foaming at the mouth, etc.), or are placed in a situation where they cannot maintain surface and core temperatures necessary to their well-being. Desert tortoises will be kept shaded at all times until it is safe to release them. For the purposes of this permit, ambient air temperature will be measured in the shade, protected from wind, at a height of five centimeters above the ground surface.
- BLM wildlife staff and USFWS will be notified of any desert tortoise death or injury due to the project implementation by close of business on the following work day. Any other reporting requirements detailed in the Biological Opinion will also be adhered to.
- All appropriate state and federal permits, including NDOW and USFWS permits for handling desert tortoises or their parts, will be acquired by the tortoise biologists or other personnel before project initiation and prior to handling any desert tortoise or their parts, or conducting any activity requiring a permit.
- The project proponent or permittee will submit a report to BLM wildlife biologist within 30 days of completion of the project construction documenting the number of acres disturbed; remuneration fees paid; and number of tortoises observed or taken during the project, which includes capture and displacement, killed, injured, or harassed by other means.
- Overnight parking and storage of equipment and materials, including stockpiling, will be within previously disturbed area or within project areas cleared by a tortoise biologist.
- Workers and project related individuals will be encouraged to carpool to and from the project site.
- Water applied to dirt roads and construction areas (trenches or spoil piles) for dust abatement will use the minimal amount needed to meet safety and air quality standards in an effort to prevent the formation of puddles, which could attract desert tortoises and common ravens to construction sites. During regular tortoise surveying duties, water application will be monitored to ensure puddles do not develop. Appropriate actions will be taken to reduce water application if standing water is observed.
- Litter control will be implemented and enforced by the project proponent. During construction all trash and food related waste will be placed in predator-proof containers and removed daily from the site. Trash, litter, project debris, etc. will be transferred to a designated solid waste disposal facility. Vehicles hauling trash must be secured to prevent litter from blowing out along the road.
- Workers will not feed wildlife.
- Speed limits will be posted at 15 miles per hour or below for construction traffic on all roads within the Action Area. Within Clark and Nye Counties, the speed limit is 25 miles per hour on unposted County or dirt roads; this speed will be established for all other activities at all times.
- Vehicle traffic will be restricted to existing access roads, unless otherwise authorized by the BLM and USFWS.

- Sand, gravel, and other material generated from cut activities within the project area will be used for fill and road construction to the extent possible. Necessary materials not collected from the site will be purchased from a permitted commercial source.
- The boundaries of all areas to be disturbed (including staging areas, access roads, and sites for temporary placement of spoils) will be delineated with flagging prior to construction activities. All disturbances, vehicles, and equipment will be confined to the flagged area.
- A BLM representative will be designated who will be responsible for overseeing compliance with the reasonable and prudent measures, terms and conditions, reporting requirements, and reinitiation requirements contained in the Biological Opinion.
- Temporary disturbance areas will be restored in accordance with BLM restoration protocols for the project.
- Trenches, pits, or holes (if needed) will be covered or backfilled at the end of each day. If covering or backfilling is not feasible, escape ramps will be provided and biologists will inspect the areas each morning.

Operations Mitigation Measures

- Habitat fragmentation caused by the REM Facility will be minimized with the installation of dual purpose drainage/connectivity culverts, a single strategically placed desert tortoise crossing, and under-rail tortoise escapes (Map 2); dual purpose drainage/connectivity culverts will also ensure that local hydrologic dynamics and dependent plant communities are minimally impacted. Drainage/connectivity structures will be 36 or 48 inches in diameter, depending on the size and characteristics of the drainage channel encountered, and will be accessible to tortoises via tortoise ramps or other appropriate designs. The desert tortoise specific connectivity culvert will consist of a 12-inch tall arch (i.e., half of a 24-inch diameter pipe) with a flat bottom, which has been positioned to reduce the maximum distance between culverts-type crossings to 0.9 mile from an original gap of 1.4 miles. Under-rail tortoise escape passages will be installed approximately every 0.2 mile (1000 feet) to prevent tortoises from becoming trapped on the rail line and to provide additional avenues for connectivity.
- Within Clark and Nye Counties, the speed limit is 25 miles per hour on unposted County or dirt roads; this speed will be established for all activities at all times.
- A BLM representative will be designated who will be responsible for overseeing compliance with the reasonable and prudent measures, terms and conditions, reporting requirements, and reinitiation requirements contained in the Biological Opinion.
- Litter control will be implemented and enforced by the project proponent. All trash and food related waste will be placed in predator-proof containers (or within closed containers inside closed buildings) and removed as appropriate from the site. Trash, litter, project debris, etc. will be transferred to a designated solid waste disposal facility. Vehicles hauling trash must be secured to prevent litter from blowing out along the road.
- Workers will not feed wildlife.

Rehabilitation

- Affected areas will be re-vegetated and reclaimed to resemble their current state.
 - All structures associated with the rail line will be removed by the project proponent and recycled, repurposed, or disposed of using current standards for demolition and disposal in Nevada.
 - Coordination will occur with BLM to restore the original contour and vegetation of the land. Seeding will be conducted using BLM-recommended seed mixes.
 - Material used for the operation of the facility will be recycled to the greatest extent possible upon removal.
- The following plans would be prepared and implemented that would further reduce impacts to listed species:
 - Worker Environmental Awareness Plan

- Raven Management Plan
- Integrated Weed Management Plan
- Anti-perch devices will be utilized. The transmission lines will be Avian Power Line Interaction Committee (APLIC) compliant and a raven management plan will be developed.

Migratory Birds

- Habitat-altering projects or portions of projects should be scheduled outside of the bird breeding season which generally occurs between February 15th and August 31st. If a project has to occur during the breeding season, then a qualified biologist must survey the area for nests immediately prior to commencement of construction activities. This shall include burrowing and ground nesting species in addition to those nesting in vegetation. If any active nests are found, an appropriately-sized buffer area must be established and maintained until the young birds fledge. The buffer area must connect to suitable, undisturbed habitat. As the above dates are a general guideline, if active nest are observed outside this range they are to be avoided as described above.
- Due to potential for electrocution, collision and nesting/perching by migratory birds on overhead power lines, the Proposed Project must 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.
- Guy wires should not be used if practicable. If not practicable, all guy wires must be marked in sections over the entire line (flight diverters or markers) so they are visible to prevent injury/mortality to birds through collision.
- Any lighting for on-ground facilities and equipment would be down-shielded to keep light within the boundaries of the site.

Restoration

- All short term or temporary use areas are required to be restored. A restoration plan is required to be developed according to the current BLM guidelines and requires review by BLM Botanist. Please contact the BLM Botanist for the current guidelines.

Land Use

- Interagency Operating Procedures state corridors are to be efficiently used. The applicant, assisted by the appropriate agency, shall consolidate the proposed infrastructure, such as access roads, wherever possible and utilize existing roads to the maximum extent feasible, minimizing the number, lengths, and widths of roads, construction support areas, and borrow areas.
- The Proposed Action may require coordination with the BLM to modify infrastructure to ensure it is compatible with the purpose of the corridor. Where design modifications are insufficient to reduce conflicts of the proposed transmission line and rail line with future uses of the Section 368 Energy Corridor (if required), ARES will work further with BLM to find an acceptable compromise without violating federal statutes.
- Any development within Sec. 368 corridors will abide by the Interagency Operating Procedures found in Appendix B of this document.

Human Health and Safety

- Any hazardous materials, solid or hazardous waste will be handled in accordance with all applicable federal, state and local compliance regulations, including training and the safe, transport, handling, storage and disposal of all solid and/or hazardous waste for the construction, operation and decommissioning phases of the Project.
- All applicable safety and management plans for the operation, control, and maintenance of all components will be developed and followed. A health and safety program will be developed to protect both workers and the general public during construction, operation, and decommissioning. The program

should identify all applicable Federal and state occupational safety standards, establish safe work practices for each task (e.g., requirements for personal protective equipment and safety harnesses, Occupational Safety and Health Administration [OSHA] standard practices, measures for reducing occupational electromagnetic field [EMF] exposures), and define safety performance standards (e.g., electrical system standards). The program will include a training program to identify hazard training requirements for workers for each task and establish procedures for providing required training to all workers. Documentation of training and a mechanism for reporting serious accidents to appropriate agencies should be established.

- ARES will develop a comprehensive emergency plan that considers the vulnerabilities of the Proposed Project to credible events initiated by natural causes (earthquakes, avalanches, floods, high winds, violent storms, wildfires, etc.), human error, mechanical failure, cyber attack, or sabotage, and the potential for and possible consequences of those events.
- The track and roadway will be inspected daily, possibly employing robotic equipment that can work 24 hours a day, seven days a week, without direct manual control. The inspection criteria will be, at a minimum, based on Title 49 CRF 213 Track Safety Standards as published in the Federal Register (latest), supplemented by recommendations of the International Heavy Haul Association (IHHA) and in-house developed criteria based on best practices from a world-wide network of specialized, heavy-haul railroad operations. There will be an internal process for automatic evaluation of inspection results data, tied into a system to generate work orders that will direct the Maintenance of Way (MOW) Department to repair or replace any defective guideway elements. The MOW Department will operate on a proactive basis to minimize the possibility of guideway components slipping below the State of Good Repair, by grinding rail, correcting surface anomalies, ultrasound testing of rail, etc., based on the inspection data and a planning forecast program that prevents any serious exceptions from developing.
- The design, construction, operation, and maintenance of the 230 kV transmission line would meet or exceed the requirements of the National Electrical Safety Code (NESC), U.S. Department of Labor, OSHA, California Independent System Operator, Federal Energy Regulatory Commission, and VEA's requirements for safety and protection of landowners and their property.
- The Proposed Project will comply with FAA regulations, including lighting regulations.
- ARES will develop a fire management strategy to implement measures to minimize the potential for a human-caused fire during project construction, operation, and decommissioning. The strategy should clarify who has responsibility for fire suppression and hazardous fuels reduction, if necessary.
- Any wastewater generated on site in association with temporary, portable sanitary facilities will be periodically removed on a schedule approved by the BLM, by a licensed hauler, and introduced into an existing municipal sewage treatment facility.
- Construction activity is planned to limit noisy activities to the least noise-sensitive times of day (i.e., daytime only between 7 a.m. and 7 p.m. week days).

Hydrology

- A Site Drainage Plan, a Stormwater Pollution Prevention Plan (SWPPP), and best management practices (BMPs) will be developed and utilized. Implementation of measures identified in a SWPPP would reduce impacts to hydrologic conditions. Culverts will allow current flow patterns to remain while allowing the train to travel as necessary to achieve the energy storage goal. Runoff from the facilities area will be minimized through best management practices, such as the use of gravel for vehicle areas and allowing natural vegetation to grow where it does not interfere with operations.
- ARES will implement erosion controls complying with county, state, and Federal standards, such as jute netting, silt fences, and check dams, and will secure all necessary stormwater pollution prevention plan permits.
- ARES will minimize ephemeral wash crossings by access roads and rail tracks to the extent practicable. All structures crossing intermittent streams will be located and constructed so the structures do not decrease channel stability, or increase water velocity.

- ARES will not alter existing drainage systems and will give particular care to sensitive areas such as erodible soils or steep slopes. Soil erosion shall be reduced at culvert outlets by appropriate structures. Catch basins, roadway ditches, and culverts will be cleaned and maintained.

Recreation

- Delays to public travel would be limited in frequency and duration. The exact impact has not yet been determined but will be described in future Plan of Development updates submitted to the BLM for approval.
- All existing recreation routes impacted by the proposed project would be maintained for public use. Travel routes shall be maintained by providing crossing either over or under the proposed project.

Soils

- Although application of the proposed design features would reduce impacts to soils, disturbance of 170 acres of soils as a result of the Proposed Action would remain in the short term, and disturbance of 72 acres of soils as a result of the Proposed Action would remain in the long term. The use of water or an alternative BLM-approved dust palliative on disturbed area will preserve soil by reducing wind erosion resulting from the destruction of desert pavement in disturbed areas. Culverts will be installed in the rail bed to maintain the normal passage of rainwater and reduce erosion. Weed free straw bales or waddles may also be utilized as necessary to reduce erosion from storm water runoff during construction. The reseeded of temporary disturbance areas after construction activities have been completed will also control erosion and reduce any potential remaining impacts.

Transportation

- ARES will consult with Nye County Planning authorities, the Sheriff's Office, and other agencies, regarding increased traffic during the construction phase, including an assessment of the number of vehicles per day, their size, and type. Specific issues of concern (e.g., location of school bus routes and stops) will be identified and addressed in the traffic management plan.

Vegetation

- During construction, impacts would be limited to as small a footprint as possible through the use of flags to delineate boundaries. Temporary disturbance areas will be restored in accordance with BLM guidelines in order to reduce short and long-term impacts. Upon final closure of the site at the end of the project life, vegetation will be restored to comply with current BLM guidelines.
- ARES will develop an integrated vegetation management plan consistent with applicable regulations and agency policies for the control of unwanted vegetation, noxious weeds, and invasive species (E.O. 13112). The plan will address monitoring; ROW vegetation management; the use of certified weed-seed-free hay, straw, and/or mulch; the cleaning of vehicles to avoid the introduction of invasive weeds; education of personnel on weed identification, the manner in which weeds spread, and the methods for treating infestations.
- To restore disturbed habitats, ARES will prepare a habitat restoration plan to identify the approach and methods to be used to restore habitats disturbed during project construction activities. The plan will be designed to expedite the recovery to natural habitats supporting native vegetation, and require restoration to be completed as soon as practicable after completion of construction, minimizing the habitat converted at any one time. To ensure rapid and successful restoration efforts, the plan will include restoration success criteria, including time frames, which will be developed in coordination with the BLM.
- In addition, the following plans would be prepared and implemented that would further reduce impacts to vegetation:
 - Fire Protection Plan
 - Integrated Weed Management Plan
 - Decommissioning and Site Reclamation Plan

Visual Resources

- All lighting would be designed to provide the minimum illumination needed to achieve safety and security objectives, and be directed downward and shielded to focus illumination on the desired areas. Lighting is planned to be installed at the exterior of the buildings and within the on-site substation.
- Standard rail safety lighting will be installed at the Carpenter Canyon Road crossing. This lighting will only be activated when the train is approaching the crossing. The train shuttle cars will have lights identifying the head and tail of the train, and possibly the sides of each shuttle car (this may just be reflective items).
- Structures within the facilities area, as well as the train shuttle cars, will be colored to conform to the current BLM Standard Environmental Colors chart (Standard Environmental Color Chart CC-001: June 2013), selecting the most appropriate color to as closely as possible match the predominant background colors of the immediate area. Color selection will be a shade or two darker than the surrounding landscape to account for natural shadows, normal fading, and weathering, and be approved by the BLM.

Wild Horse and Burro

- Individuals will not harass (feed, pet, chase, etc.) wild horses and/or burros if encountered on or near the roads or work areas. If they do see any wild horses and burros, they should keep a safe distance; they are wild animals and can be unpredictable, especially during foaling and breeding season.
- No fences are anticipated, except those required for safety and security purposes around the facilities area, to avoid disrupting horse and burro free roaming to the extent possible.
- The rail line will be constructed at-grade, transmission associated with shuttle train car operation will be an overhead catenary, and the rail corridor will not be fenced; current rail corridor design will minimize impacts to the free-roaming nature of wild horses and burros.
- Current wild horse and burro mitigation measures would remain in effect unless/until BLM made changes or another use was found for the land.

Wildlife

- Litter pickup will be specifically addressed in mitigation measures for project construction and operation.
- Anti-perching devices may be installed on track side catenary poles, where practical.
- Observations by project staff of potential wildlife problems, including wildlife mortality, will be immediately reported to the applicable BLM authorized officer.
- All NDOW protocols will be followed for any NDOW protected species found during pre-construction surveys and any necessary permits would be obtained.
- Any Gila monster (state sensitive) encounters during project construction will be reported immediately to NDOW at (702) 486-5127.
- There is currently no surface water in the immediate area around the Action Area and the nearest man-made water source is more than one-quarter mile away. No standing water or ponds will be developed as part of the Proposed Project.
- Fencing will only be installed around the facilities area, for safety and security purposes, and should not impact or block any free movement of bighorn sheep or other big-game species
- To reduce impacts to bats lighting should be kept to the absolute minimum and be down lighting only.

EXHIBIT D

Special Stipulations N-92514

TERMS AND CONDITIONS for ROW N-92514: BO File No. 84320-2016-F-0010 and 84320-2010-F-0365.R003

Reasonable and Prudent Measures (RPM) and Terms and Conditions for the A Project

In addition to the measures proposed in the BLM's request for consultation, the RPMs and terms and conditions stated below apply towards construction and maintenance of the project.

RPM 1. Minimize injury and mortality of tortoises

1.a. Field Contact Representative—BLM shall ensure a Field Contact Representative (FCR) (also called a Compliance Inspection Contractor) is generally designated for each contiguous stretch of construction activity or isolated work areas. The FCR will serve as an agent of BLM and the Service to ensure that all instances of non-compliance or incidental take are reported. BLM has discretion over approval of potential FCRs; however, those also acting as authorized desert tortoise biologists must also be approved by the Service (see Term and Condition 1.c). All FCRs will report directly to BLM and the Service.

The FCR, authorized desert tortoise biologist, and monitors (see Term and Condition 1.c.) shall have a copy of all stipulations when work is being conducted on the site and will be responsible for overseeing compliance with terms and conditions of the ROW grant, including those for listed species. BLM shall ensure the FCR and authorized desert tortoise biologists have authority to halt any activity that is in violation of the stipulations. The FCR shall be onsite year-round during all project activities.

Within 3 days of employment or assignment, the project proponent and BLM shall provide the Service with the names of the FCR. An FCR is not typically required for operation and maintenance activities.

1.b. Authorized desert tortoise biologist—All authorized desert tortoise biologists (and monitors) are agents of BLM and the Service and shall report directed to BLM and the proponent concurrently regarding all compliance issues and take of desert tortoises; this includes all draft and final reports of non-compliance or take. The initial draft report shall be provided to BLM and Service within 24 hours of the observation of injury or mortality take or non-compliance.

An authorized desert tortoise biologist will be assigned to each piece or group of large equipment engaged in activities that may result in take of desert tortoise (for example, clearing, blasting, grading, lowering in pipe, hydrostatic testing, backfilling, recontouring, and reclamation activities) and other work areas that pose a risk to tortoises. BLM has discretion on whether to require a monitor instead of an authorized desert tortoise biologist to monitor equipment that is low risk to tortoises.

Authorized desert tortoise biologists, monitors, and the FCR (see Term and Condition 1.a.) shall be responsible for ensuring compliance with all conservation measures for the project. This responsibility includes: (1) enforcing the litter-control program; (2) ensuring that desert tortoise habitat disturbance is restricted to authorized areas; (3) ensuring that all equipment and materials are stored within the boundaries of the construction zone or within the boundaries of previously-disturbed areas or designated areas; (4) ensuring that all vehicles associated with construction activities remain within the proposed construction zones; (5) ensuring that no tortoises are underneath project vehicles and equipment prior to use or movement; (6) ensuring that all monitors (including the authorized desert tortoise biologist) have a copy of the required measures in their possession, have read them, and they are readily available to the monitor when on the project site.

An authorized desert tortoise biologist will serve as a mentor to train desert tortoise monitors and will approve monitors if required. An authorized desert tortoise biologist is responsible for errors committed by desert tortoise monitors.

An authorized desert tortoise biologist is responsible for recording and reporting each desert tortoise handled. Information will include the following: location (GPS), date and time of observation, whether the desert tortoise

was handled, general health and whether it voided its bladder, location desert tortoise was moved from and location moved to, unique physical characteristics of each tortoise, and effectiveness and compliance with the desert tortoise protection measures. This information will be provided directly to BLM and the Service. Potential authorized desert tortoise biologists must submit their statement of qualifications to the Service's Southern Nevada Fish and Wildlife Office in Las Vegas for approval, allowing a minimum of 30 days for Service response. The statement form is available on the internet at:
http://www.fws.gov/nevada/desert_tortoise/auth_dt_form.htm.

1.c. Prior to final approval to begin work on the project, the authorized desert tortoise biologists will have read the required measures (terms and conditions and other stipulations) and have a copy of the measures available at all times while on the project site. BLM shall provide the appropriate agency contact for the project to the Service and the Service will include the forms with approval letters. Biologists and monitors should be visibly identifiable on the project site, which may include use of a uniquely designated hardhat or safety vest color.

1.d. Desert tortoise monitor—Desert tortoise monitors assist an authorized desert tortoise biologist during surveys and serve as apprentices to acquire experience. Desert tortoise monitors ensure proper implementation of protective measures, and record and report desert tortoises and sign observations in accordance with Term and Condition 1.c. They will report incidents of noncompliance to the authorized desert tortoise biologist or FCR. No monitors shall be on the project site unless supervised by an authorized desert tortoise biologist or approved by the BLM.

If a desert tortoise is immediately in harm's way (e.g., certain to immediately be crushed by equipment), desert tortoise monitors may move the desert tortoise then place it in a designated safe area until an authorized desert tortoise biologist assumes care of the animal.

Desert tortoise monitors may not conduct field or clearance surveys or other specialized duties of an authorized desert tortoise biologist unless directly supervised by an authorized desert tortoise biologist or approved to do so by the Service; "directly supervised" means an authorized desert tortoise biologist has direct sight and voice contact with the desert tortoise monitor (i.e., within approximately 200 feet of each other).

Within 3 days of employment or assignment, the project proponent and BLM shall provide the Service with the names of desert tortoise monitors who would assist an authorized desert tortoise biologist.

1.e. Desert tortoise education program—A desert tortoise education program shall be presented to all personnel on site during construction activities by an agency or authorized desert tortoise biologist. The Service, BLM, and appropriate state agencies shall approve the program. At a minimum, the program shall cover desert-specific Leave-No-Trace guidelines, the distribution of desert tortoises, general behavior and ecology of this species, sensitivity to human activities, threats including introduction of exotic plants and animals, legal protection, penalties for violation of State and Federal laws, reporting requirements, and project measures in this biological opinion). All field workers shall be instructed that activities must be confined to locations within the approved areas and their obligation to walk around and check underneath and vehicles and equipment before moving them (or be cleared by an authorized desert tortoise biologist). In addition, the program shall include fire prevention measures to be implemented by employees during project activities. The program shall instruct participants to report all observations of desert tortoise and their sign during construction activities to the FCR and authorized desert tortoise biologist.

1.f. Vehicle travel— Project personnel shall exercise vigilance when commuting to the project area to minimize risk for inadvertent injury or mortality of all wildlife species encountered on paved and unpaved roads leading to and from the project site. Speed limits will be clearly marked, and all workers will be made aware of these limits. Onsite, personnel shall carpool to the greatest extent possible.

During the desert tortoise less-active season (generally November through February), vehicle speed on project-related access roads and in the work area will not exceed 25 mph. All vehicles and construction equipment will be tightly grouped.

During the more active season (generally March through October), and if temperatures are above 60 but below

95°F for more than 7 consecutive days, vehicle speed on project-related access roads and in the work area will not exceed 15 mph. All vehicles and construction equipment will operate in groups of no more than three vehicles. An authorized desert tortoise biologist and desert tortoise monitor will escort or clear ahead of vehicles and equipment for ROW travel. The escort will be on foot and clear the area of tortoises in front of each traveling construction equipment group (see Desert tortoise clearance). The escort will use a recreational vehicle with ground visibility (e.g., UTV); however, at least one authorized desert tortoise biologist and one desert tortoise monitor must ride together and survey both sides of the vehicle. The pace will be determined by an authorized desert tortoise biologist and shall be slow enough to ensure adequate inspection. New access and spur road locations will be sited to avoid potentially active tortoise burrows to the maximum extent practicable.

1.g. Unauthorized access—BLM shall ensure that unauthorized personnel, including the public and off-duty project personnel, do not travel on project-related temporary access roads, to the greatest extent practicable. During the more-active season (generally March through October), and if temperatures are above 60 but below 95°F for more than 7 consecutive days, project- and non-project-related activities on all access roads that intersect the ROW will be monitored and logged. During construction, the ROW will be fenced at public roads that intersect the ROW. Signs will say that access on the ROW is strictly prohibited except by authorized personnel and that violators will be prosecuted.

1.h. Desert tortoise clearance—Prior to surface-disturbing activities, authorized desert tortoise biologists potentially assisted by desert tortoise monitors, shall conduct a clearance survey to locate and remove all desert tortoises from harm's way including areas to be disturbed using techniques that provide full coverage of all areas (Service 2009). During the more-active season, clearance surveys will be conducted either the day prior to, or the day of, any surface-disturbing activity. During the less-active season, clearance surveys will be conducted within 7 days prior to any surface-disturbing activity. No surface-disturbing activities shall begin until two consecutive surveys yield no individuals.

An authorized biologist shall excavate all burrows that have characteristics of potentially containing desert tortoises in the area to be disturbed with the goal of locating and removing all desert tortoises and tortoise eggs. During clearance surveys, all handling of desert tortoises and their eggs and excavation of burrows shall be conducted solely by an authorized desert tortoise biologist in accordance with the most current Service-approved guidance (currently Service 2009). If any active tortoise nests are encountered, the Service must be contacted immediately, prior to removal of any tortoises or eggs from those burrows, to determine the most appropriate course of action. Unoccupied burrows shall be collapsed or blocked to prevent desert tortoise entry. Outside construction work areas, all potential tortoise burrows and pallets within 50 feet of the edge of the construction work area shall be flagged. If the burrow is occupied by a tortoise during the less active season, the tortoise shall be temporarily penned (see Term and Condition 1.k.). No stakes or flagging shall be placed on the berm or in the opening of a desert tortoise burrow. Desert tortoise burrows shall not be marked in a manner that facilitates poaching. Avoidance flagging shall be designed to be easily distinguished from access route or other flagging, and shall be designed in consultation with experienced construction personnel and authorized biologists. All flagging shall be removed following construction activities.

An authorized desert tortoise biologist will inspect areas to be backfilled immediately prior to backfilling.

1.i. Desert tortoise in harm's way—Any project-related activity that may endanger a desert tortoise shall cease if a desert tortoise is seen on the project site. Project activities may resume after an authorized desert tortoise biologist or desert tortoise monitor (see restrictions in Term and Condition 1.d.) removes the desert tortoise from danger or after the tortoise has moved to a safe area on its own.

During the more-active season and if temperatures are above 60 but below 95°F for more than 7 consecutive days, at least 1 monitor shall be assigned to observe spoil piles prior to excavation and covering.

1.j. Handling of desert tortoises—Desert tortoises shall only be moved by an authorized desert tortoise biologist or desert tortoise monitor (see restrictions in Term and Condition 1.d.) solely for the purpose of moving the tortoises out of harm's way. During construction, operation, and maintenance, an authorized desert

tortoise biologist shall pen, capture, handle, and relocate desert tortoises from harm's way as appropriate and in accordance with the most current Service-approved guidance. No tortoise shall be handled by more than one person. Each tortoise handled will be given a unique number, photographed, and the biologist will record all relevant data on the Desert Tortoise Handling and Take Report (Appendix E of PBO) to be provided to BLM in accordance with the project reporting requirements.

Desert tortoises that occur aboveground and need to be moved from harm's way shall be placed in the shade of a shrub, 150 to 1,640 feet from the point of encounter. In situations where desert tortoises must be moved more than 1,640 feet, translocation procedures may be required. Translocation would likely result in a level of effect to the desert tortoise that would require appending this biological opinion.

If desert tortoises need to be moved at a time of day when ambient temperatures could harm them (less than 40°F or greater than 95°F), they shall be held overnight in a clean cardboard box. These desert tortoises shall be kept in the care of an authorized biologist under appropriate controlled temperatures and released the following day when temperatures are favorable. All cardboard boxes shall be discarded after one use and never hold more than one tortoise. If any tortoise active nests are encountered, the Service must be contacted immediately, prior to removal of any tortoises or eggs from those burrows, to determine the most appropriate course of action. Desert tortoises located in the project area sheltering in a burrow during the less-active season may be temporarily penned in accordance with Term and Condition 1.k. at the discretion of an authorized desert tortoise biologist. Desert tortoises should not be penned in areas of moderate to heavy public use, rather they should be moved from harm's way in accordance with the most current Service-approved guidance (currently Service 2009).

Desert tortoises shall be handled in accordance with the Desert Tortoise Field Manual (Service 2009). Equipment or materials that contact desert tortoises (including shirts and pants) shall be sterilized, disposed of, or changed before contacting another tortoise to prevent the spread of disease. All tortoises shall be handled using disposable surgical gloves and the gloves shall be disposed of after handling each tortoise. An authorized desert tortoise biologist shall document each tortoise handling by completing the Desert Tortoise Handling and Take Report (Appendix E of the PBO).

1.k. Penning—Penning shall be accomplished by installing a circular fence, approximately 20 feet in diameter to enclose and surround the tortoise burrow. The pen should be constructed with 1-inch horizontal by 2-inch vertical, galvanized welded wire. Steel T-posts or rebar should be placed every 5 to 6 feet to support the pen material. Pen material will extend 18 to 24 inches aboveground. The bottom of the enclosure will be buried 6 to 12 inches or bent towards the burrow, have soil mounded along the base, and other measures implemented to ensure zero ground clearance. Care shall be taken to minimize visibility of the pen by the public. An authorized desert tortoise biologist or desert tortoise monitor shall check the pen at a frequency to ensure that the desert tortoise is secure and not stressed. No desert tortoise shall be penned for more than 48 hours without written approval by the Service. All instances of penning or issues associated with penning shall be reported to the Service within 3 days (see Appendix E of the PBO).

1.l. Temporary tortoise-proof fencing—All construction areas, including open pipeline trenches, hydrostatic testing locations, and tie-in work shall be fenced with temporary tortoise-proof fencing (e.g., silt fencing) or inspected by an authorized desert tortoise biologist periodically throughout and at the end of the day and immediately the next morning. BLM and the Service will determine the appropriate length of open trench that will be allowed on the project.

Fencing will be designed in a manner that reduces the potential for desert tortoises and hatchlings to access the construction areas. Thus, the lower 6 to 12 inches of fencing will be folded outward (i.e., away from the construction area and towards the direction a tortoise would approach the work area), and covered with sufficient amount of soil, rocks, and staking to maintain zero ground clearance and secure the bottom section of material. An authorized desert tortoise biologist will check the integrity of the fencing every 2 hours and ensure that there are no breaches in the fencing and no desert tortoises pacing the fence. After the fencing is erected and secure, the inside will be cleared by an authorized desert tortoise biologist. The fencing must remain closed during any construction activities.

1.m. Permanent tortoise-proof fencing—Tortoise-proof fencing shall be installed around the boundary of permanent aboveground facilities that require regular monitoring and maintenance and other areas as directed by the BLM or Service. Fence specifications will be consistent with those approved by the Service (Service 2009). Tortoise guards shall be placed at all road access points where desert tortoise-proof fencing is interrupted, to exclude desert tortoises from the facility. Gates shall provide minimal ground clearance and deter ingress by desert tortoises. Permanent tortoise-proof fencing along the project area shall be appropriately constructed, monitored, and maintained. Fencing shall be inspected in accordance with Table 1 and reports prepared in accordance with Term and Condition 7.c. unless modified by the Service. Monitoring and maintenance shall include regular removal of trash and sediment accumulation and restoration of zero ground clearance between the ground and the bottom of the fence, including re-covering the bent portion of the fence if not buried.

Table 1. Desert tortoise fence inspection requirements

Condition	Minimum Requirements
First week following fence installation; tortoises active	Inspect fence perimeter, tortoise guards, and gates twice per day, timed to occur when tortoises may be pacing the fenceline.
First week following fence installation; tortoises inactive	Inspect fence perimeter, tortoise guards, and gates once per day.
Beginning the second week following fence construction, tortoises active	Inspect fence perimeter, tortoise guards, and gates once per day.
Beginning the second week following fence construction, tortoises inactive	Inspect fence perimeter, tortoise guards, and gates once per month.
Following major storm event, tortoises active	Inspect fence perimeter, tortoise guards, and gates within 48 hours.
Following major storm event, tortoises inactive	Inspect fence perimeter, tortoise guards, and gates within 72 hours.
Breach in fence observed, tortoise guard or gate requires maintenance, tortoises active	Repair within 48 hours of breach occurrence.
Breach in fence observed, tortoise guard or gate requires maintenance, tortoises inactive	Repair within 1 week of breach occurrence.

1.n. Wildlife escape ramps—Earthen plugs, with wildlife escape ramps on either side of the plug, will be provided in open trench segments at no greater than every 0.25 mile. These distances will be reduced if the FCR and authorized desert tortoise biologist determine that the plug and escape ramp spacing is insufficient to facilitate animal escape from the trench. Any tortoise that is found in a trench or excavation shall be promptly removed by an authorized desert tortoise biologist in accordance with the most current Service-approved guidance. If the authorized desert tortoise biologist is not allowed to enter the trench for safety reasons, the alternative method of removal must have prior approval by the Service.

1.o. Dust control—Water applied for dust control shall not be allowed to pool outside desert-tortoise fenced areas, as this can attract desert tortoises. Similarly, leaks on water trucks and water tanks will be repaired to prevent pooling water. An authorized desert tortoise biologist will be assigned to patrol each area being watered immediately after the water is applied and at approximate 60-minute intervals until the ground is no longer wet enough to attract tortoises if conditions favor tortoise activity.

1.p. Blasting—If blasting is required in desert tortoise habitat, detonation shall only occur after the area has been surveyed and cleared by an authorized desert tortoise biologist. A 200-foot radius area around the blasting site shall be surveyed and all desert tortoises aboveground within this 200-foot radius of the blasting site shall be moved 500 feet from the blasting site, placed in unoccupied burrow, and temporarily penned (see Term and

Condition 1.k.) to prevent tortoises that have been temporarily relocated from returning to the site. Tortoises in burrows would be left in their burrows. All burrows, regardless of occupied status, will be stuffed with newspapers, flagged, and location recorded using a GPS unit. Immediately after blasting, newspaper and flagging will be removed. If a burrow or coversite has collapsed which could be occupied, it shall be excavated to ensure that no tortoises have been buried and are in danger of suffocation.

1.q. Ravens and Raptors—Transmission line support structures and other facility structures shall be designed to discourage their use by ravens and raptors for perching or nesting (e.g., by use of anti-perching devices) in accordance with the most current Avian Power Line Interaction Committee guidelines (see terms and conditions 2.b and 2.c.).

1.r. Timing of construction—The BLM shall ensure that when possible, the project proponent schedules and conducts construction, operation, and maintenance activities within desert tortoise habitat during the less-active season (generally October 31 to March 1) and during periods of reduced desert tortoise activity (typically when ambient temperatures are less than 60 or greater than 95°F). All vehicles and equipment that are not in areas enclosed by desert tortoise exclusion fencing will stop activities in desert tortoise habitat during rainfall events in the more-active season (generally March 1 to October 31), and if temperatures are above 60 but below 95°F for more than 7 consecutive days. The FCR or designee will determine, in coordination with the BLM and Service, when it is appropriate for project activities to continue.

RPM 2. Predator control.

2.a. Litter control—A litter control program shall be implemented to reduce the attractiveness of the area to opportunistic predators such as desert kit foxes, coyotes, and common ravens. Trash and food items will be disposed of properly in predator-proof containers with predator-proof lids. Trash containers will be emptied and construction waste will be removed daily from the project area and disposed of in an approved landfill.

2.b. Deterrence—The project proponent will implement measures to discourage the presence of predators on site (coyotes, ravens, etc.), including elimination of available water sources, designing structures to discourage potential nest sites, and use of hazing to discourage raven presence.

2.c. Monitoring and predator control—The project proponent will monitor for the increased presence of ravens and other potential human-subsidized predators in the vicinity of the project area. A qualified biologist (not necessarily an authorized desert tortoise biologist) shall conduct monthly nest surveys of potential nest sites (e.g., power transmission towers/poles) during the raven breeding season (generally February 1 to April 30) and document the presence of all nests and the species using them. During these monthly surveys, an authorized biologist will also document any sign of predation of desert tortoises below the nest and in the vicinity of the transmission line. If sign of predation is found under a nest, control measures will be implemented in coordination with the Service. The frequency of these nest surveys may be modified as agreed upon by BLM and the Service.

RPM 3. Impacts to tortoise habitat.

3.a. Habitat protection plans—BLM shall ensure that the applicants develop and implement an approved fire prevention and response plan, erosion control plan, and a weed management plan approved by BLM prior to surface disturbance.

3.b. Restoration plan—BLM shall ensure that the applicant develop and implement a restoration/reclamation plan. The plan will describe objectives and methods to be used, species of native plants and seed mixture to be used, time of planting, success standards, actions to take if restoration efforts fail to achieve the success standards, and follow-up monitoring. The plan will be prepared and approved prior to the surface disturbance phase of the project.

3.c. Minimizing new disturbance—Cross-country travel outside designated areas shall be prohibited. Native vegetation will be left in place wherever possible. All equipment, vehicles, and construction materials shall be restricted to the areas designated prior to project activities and new disturbance will be restricted to the minimum necessary to complete the task. All work area boundaries shall be conspicuously staked, flagged, or otherwise marked to minimize surface disturbance activities. To the maximum extent possible, access to splicing and tensioning site will occur by overland travel (no blading). The FCR shall ensure that blading is conducted only when necessary.

3.d. Weed prevention—Vehicles and equipment shall be cleaned with a high pressure washer prior to arrival in desert tortoise habitat and prior to departure from areas of known invasive weed and nonnative grass infestations to prevent or at least minimize the introduction or spread these species.

3.e. Chemical spills—Hazardous and toxic materials such as fuels, solvents, lubricants, and acids used during construction will be controlled to prevent accidental spills. Any leak or accidental release of hazardous and toxic materials will be stopped immediately and cleaned up at the time of occurrence. Contaminated soils will be removed and disposed at an approved landfill site.

3.f. Residual impacts from disturbance—BLM shall collect remuneration fees to offset residual impacts to desert tortoises from project-related disturbance to desert tortoise habitat.

Remuneration fees will be used for management actions expected to promote recovery of the desert tortoise over time, including management and recovery of desert tortoise in Nevada. Actions may involve habitat acquisition, population or habitat enhancement, increasing knowledge of the species' biological requirements, reducing loss of individual animals, documenting the species status and trend, and preserving distinct population attributes. Fees will be used to fund the highest priority recovery actions for desert tortoises in Nevada.

The current base rate is \$843 per acre of disturbance, as indexed for inflation, effective March 1, 2015. The next adjustment will become \$849 per acre effective March 1, 2016. The fee rate will be indexed for inflation based on the Bureau of Labor Statistics Consumer Price Index for All Urban Consumers (CPI-U) on January 31st of each year, becoming effective March 1st. Fees assessed or collected for projects covered under this BiOp will be adjusted based on the current CPI-U for the year they are collected. Information on the CPI-U can be found on the internet at: <http://stats.bls.gov/news.release/cpi.nws.htm>.

RPM 7. Compliance and reporting.

7.a. Desert tortoise deaths—The deaths and injuries of desert tortoises shall be investigated as thoroughly as possible to determine the cause. The Service and appropriate state wildlife agency must be verbally informed immediately and within 5 business days in writing (electronic mail is sufficient). The Authorized Desert Tortoise Biologist shall complete the Desert Tortoise Handling and Take Report (Appendix E of the PBO).

7.b. Non-compliance—Any incident occurring during project activities that was considered by the FCR, authorized desert tortoise biologist, or biological monitor to be in non-compliance with this biological opinion shall be immediately documented by an authorized desert tortoise biologist. Documentation shall include photos, GPS coordinates, and details on the circumstances of the event. The incident will be included in the annual report and post-project report.

7.c. Fence inspection—Quarterly reports (January-March, April-June, July-September, and October – December) for monitoring and repair of tortoise-proof fencing as specified in Table 1, shall be submitted to the Service's Southern Nevada Fish and Wildlife Office in Las Vegas. Reports are due within the first 30 days following each quarter. For example, the report for quarter January-March is due April 30).

7.d. Project reporting requirements—Quarter (non-appended actions), annual, and comprehensive final project reports will be submitted to BLM and the Service’s Nevada Fish and Wildlife Office in Las Vegas. Annual reports are required for all appended actions (except those completed and provided in a prior annual report). Annual reports will cover the calendar year and are due April 1st of the following year (e.g., the annual report for calendar year 2013 is due April 1, 2014). Quarterly reports for non-appended actions are due 15 calendar days following the quarter. Final project reports are due within 60 days following completion of the project or each phase of the project.

The Programmatic Biological Opinion Report to the Fish and Wildlife Service provided in Appendix G of the PBO will be used for quarterly, annual, and final project reports, and shall include all Desert Tortoise Handling and Take Reports (Appendix E of the PBO). If available, GIS shape files will be included.

7.e. Operation and maintenance—A written assessment report shall be submitted annually to the Service outlining the operation and maintenance activities that occurred over the past year.

Report to include: It will include frequency of implementation of minimization measures, biological observations, and general success of each of the minimization measures. All deaths, injuries, and illnesses of endangered or threatened species within the project area, whether associated with project activities or not, will be summarized in the annual report. The report is due April 1 of each year.

7.f. Restoration monitoring – Vegetation restoration success shall be monitored by project proponent and reported to BLM and the Service. Monitoring will include both qualitative and quantitative data collection and analysis. Monitoring frequency and parameters for restoration success will be described in the required restoration/reclamation plan.

7.g. Connectivity Structure Monitoring – The drainage culverts, tortoise underpasses, and under-rail escapes shall be inspected at least quarterly, particularly following precipitation, and maintained in perpetuity. Monitoring and maintenance will include regular removal of trash, sediment, and vegetation accumulation and restoration of tortoise access to underpass structures.

Desert Tortoise Handling and Take Report

If a desert tortoise is killed or injured, immediately contact the U.S. Fish and Wildlife Service and BLM, by phone at the numbers below and complete Section 1 of the form.

Completed forms should be submitted to the BLM and Fish and Wildlife Service:

Project Name:	Report Date:
Fish and Wildlife Service Append File No.- 8432084320-2016-F-0010 and 84320-2010-F-0365.R003-	
Authorized Desert Tortoise Biologist: _____ Employed by: _____	
Section 1: Complete all information below if a desert tortoise is injured or killed in addition to initial contact described above.	
If tortoise was injured <input type="checkbox"/> or killed <input type="checkbox"/> (check appropriate box):	
Date and time found: _____ Found by: _____ GPS location (NAD 83): easting: _____ northing: _____ No. of photos taken: _____ Disposition: _____ _____ _____	
Attach report with photos that describe in detail, the circumstances and potential cause of injury or mortality. For injuries include name of veterinarian and detailed assessment of injuries.	

Bureau of Land Management
4701 North Torrey Pines Drive
Las Vegas, Nevada 89130
702-515-5000

U.S. Fish and Wildlife Service
4701 North Torrey Pines Drive
Las Vegas, Nevada 89130

702-515-5230 Section 2: Complete all information below for each desert tortoise handled.

All instances of desert tortoise handling must be reported in this section and be included in the final project report.

Desert tortoise number: _____

Date and time found: _____ Sex of tortoise: _____

Air temperature when found: _____ Air temperature when released: _____

Tortoise activity when found: _____

Handled by: _____ Approx. carapace length _____

GPS location (NAD 83) found: easting: _____ northing: _____

GPS location released: easting: _____ northing: _____

Approximate distance moved: _____

Did tortoise void bladder; if so state approximate volume and actions taken:

Post handling or movement monitoring and observations:

Section 3: Complete for each tortoise burrow penned.

All instances of desert tortoise penning must be reported in this section and be included in the final project report.

Date and time of pen construction:

Began: _____ Completed: _____

Date and time pen removed: _____

Pen constructed by: _____

Why was tortoise penned? _____

How frequently was pen monitored? _____

Observations of desert tortoise behavior including time and date of observation:

Include photos of pen and burrow with report.

Section 7 Fee Payment Form

Biological Opinion File Number: 84320-2016-F-0010 and 84320-2010-F-0365.R003

Biological Opinion Issued By: Nevada Fish and Wildlife Office, Las Vegas, Nevada

Species: Mojave Desert Tortoise (Gopherus agassizii)

Project Name: ARES

NEPA No.: DOI-BLM-NV-

Case File/Serial #: N-92514

BLM Sec 7 log: _____

Project Proponent: ARES Nevada, LLC

Phone Number: _____

	Clark County		County		County	
	Critical habitat	Non-critical habitat	Critical habitat	Non-critical habitat	Critical habitat	Non-critical habitat
# acres anticipated to be disturbed on federal land		106		-		
Fee rate (per acre)		\$849.00				
Total cost/habitat type (per county)	\$ -	\$	\$ -	\$ -	\$ -	\$ -
Total cost per county	\$ 89,994		\$ -		\$ -	

Total payment required (all counties): \$

Amount paid: _____ Date: _____ Check/Money Order #: _____

Authorizing agencies: Bureau of Land Management, Las Vegas, Nevada

Make check payable to: Bureau of Land Management

Deliver check to: Physical Address
 Bureau of Land Management
 Attn: Information Access Ctr
 1340 Financial Blvd.
 Reno, NV 89502

Contact BLM State Office Public room at 775-861-6500

Credit Card Payments:

For BLM Public Room

Process check

to:

Contributed Funds-All Other

WBS: LVTFFX000800

7122 FLPMA

All other Res. Dev. Project and Management

Remarks: LLNV934000 L71220000.JP0000

LVTFFX000800 Desert Tortoise Conservation Program

Please provide a copy of this
completed payment form and the
payment receipt to NV-930, Attn:

T&E Program Lead

**T&E Program Lead will provide a

copy to the appropriate District

Office(s)

EXHIBIT K



Application for Energy Projects "Fund for the Recovery of Costs"

NRS Sections: 701.600 - 701.640

NAC Section: LCB R-038

Applicant:

- Self
- Private Company
- Government Agency
- Other _____

Project Name ARES Regulation Energy Management System
 Applicant ARES Nevada, LLC
 Mailing Address 854 Jimeno Road
 City Santa Barbara State CA Zip Code 93103
 Name of Contact Erika Baldersor Phone 702-304-9830 Email Erika@becnv.com
 Name of Responsible Corporate Officer/Agency Rep. Francesca Cava Title Chief Operating Officer

Type of Project

- Solar
- Wind
- Geothermal
- Fossil Fuel
- Powerline
- Biomass

Net Maximum Generation Capacity 0 (50MW storage) Estimated Design Voltage (if a powerline project) 230kV
 Proposed Project Size (in acres) 155 acres
 Proposed Length of Powerline (in miles) 3 miles (approximate)
 Proposed Length of Fuel Lines (in miles for pipeline projects) N/A

Other notable infrastructure such as evaporation pond, electrical substation (in acres) included in acreage above

Project Description (use additional sheet if necessary)

ARES plans to construct, operate and maintain an Advanced Rail Energy Storage - Regulation Energy project. This is a gravity-based energy storage system utilizing electric shuttle trains operating on a six track to store electric energy in the form of kinetic energy to assist in transmission stability and reliability.

Proposed County Location (map to accompany notice) see attached map

Estimated Project Schedule (graphic attachment acceptable)

Field surveys are expected to begin spring 2014, with commencement of construction anticipated late 2014 to early 2015. Facility operations are planned to begin in 2016.

Applicant Signature Date 2/13/14

Enclose initial payment made out to : Nevada Department of Wildlife in the amount of **\$5,000** for powerline projects greater than 50kV and less than 50 miles in length or Geothermal or Fossil Fuel power production projects, and **\$10,000** for powerline projects greater than 50kV and more than 50 miles in length, Solar or Wind power production projects.

Submit payment with application to: Nevada Department of Wildlife
 Habitat Division
 1100 Valley Road
 Reno, NV 89512

1139

ADVANCED RAIL ENERGY STORAGE LLC

19-57/1250
250

2/13/14

Date

Pay to the Order of Nevada Dept of Wildlife
Five thousand 00/100

\$5000.00

Dollars

Security
Details on
Back

Key Private Bank
KeyBank National Association
Seattle, WA 98104
1-877-694-2868

[Redacted Signature]

For

1139

⑆ 125000574⑆

Postmark

MP

EXHIBIT L

ARES REGULATORY ENERGY MANAGEMENT SYSTEM

Pending Permits, Licenses, and Approvals

(Table Notes: N/A – Not Applicable; No environmental costs anticipated; TBD – To Be Determined; Costs are unknown at this time, and can only be estimated upon receipt of additional information/clarification from BLM and/or ARES.)

Activity, Permit, or Fee	Timing Dependent On	Expenses/ Fees (\$)	Timing
Bureau of Land Management (BLM)			
Notice to Proceed with Construction	BLM approval	0	2016
TOTAL		0	
State and Local Permits Needed			
STATE			
Public Utilities Commission of Nevada: Utilities Environmental Protection Act (UEPA) Permit	Application Process (commencing March 25, 2016)	200	2016, Q1
Public Utilities Commission of Nevada: UEPA application to construct a railroad track across public highway (NAC 703.455)	Design of crossing	TBD	2016, Q4
Nevada State Fire Marshal: Hazardous Material Permit or Roving Permit - Required for storage of 5 gallons or more of flammable liquid inside or 10 gallons or more of flammable liquid outside for 30 days or more. Also required for storage of 10 gallons or more of combustible liquid inside or 25 gallons or more of combustible liquid outside for 30 days or more. Roving Permit is needed if storage tanks will be moved to different staging areas on the project site.	Engineering and Contractor input on HazMat storage needs.	150	2016, Q4
Nevada Department of Environmental Protection: Air Quality Permit for Nye County (over 5 acres) (\$500 application fee and a \$1,000 annual maintenance fee)	Coordination with Contractor	500	2017, Q1
Nevada Department of Wildlife: Special Purposes Permit For handling State-protected Wildlife – Administrative fee for permit. Annual report required.	Tortoise Monitor Contractor	100	2017, Q1
Nevada Division of Environmental Protection: National Pollutant Discharge Elimination System General Stormwater Permit for Construction - (\$200 filing fee and \$200 annual fee.- Permit fee is project specific) – Permit Support	Contractor input for construction plan	400	2017, Q1
NYE COUNTY			
Fire Safety Compliance Certification – Fee based on valuation of building(s) being permitted.	Engineering; Agency Coord	TBD	2017, Q1
Flood Damage Prevention Permit	Engineering; Agency Coord	TBD	2017, Q1
Onsite Sewage/Septic Disposal Systems (OSDS) (>3K gallons, state -- <3K gallons, County) – Will depend on size of septic storage in buildings	Engineering; Agency Coord	TBD	2017, Q1

ALL COSTS ARE ESTIMATES AND MAY VARY AS PROJECT EVOLVES

ARES REGULATORY ENERGY MANAGEMENT SYSTEM

<p>Nye County Public Works Road Use Agreements (Nye County Ordinance 1212) and Road Maintenance Agreement to cover costs associated with increased traffic</p>	<p>Engineering; ARES; Agency Coord.</p>	<p>TBD</p>	<p>2017, Q1</p>
<p>Grading/Dust Control Permit (for construction in Nye County) – similar requirements to Clark County (required if >0.5 acres and up to 5 acres. Over 5 acres, NDEP requires an additional permit for areas >5 acres.</p>	<p>Contractor input for construction plan</p>	<p>TBD</p>	<p>2017, Q1</p>
<p>CLARK COUNTY</p>			
<p>Dust Control Permit -- \$132/disturbed acre in Clark County (~80 acres in Clark County). This permit is required for construction activity in Clark County impacting greater than 0.5 acre or 100 linear feet of trench. Also must display sign per 17.5.1.6 DAQM regulations. An application form, project location map, and dust mitigation plan are required for submittal.</p>	<p>Contractor input for construction plan</p>	<p>10,560</p>	<p>2017, Q1</p>
<p>Grading Permit – Soils report must be approved prior to submittal of the grading permit application. 100% complete designs must be submitted.</p>	<p>Engineering (100% Complete)</p>	<p>Variable</p>	<p>2016, Q4</p>
<p>Land Use Permit – Application for this permit will include a disclosure form, fire survey permit form, a copy of the assessor’s map, a copy of the BLM grant, legal description, justification letter, parking analysis (no parking in Clark), site plans, floor plans (no buildings in Clark), elevations, and landscape plans (no landscaping in Clark).</p>	<p>Engineering (Substantial)</p>	<p>950</p>	<p>2016, Q4</p>

ALL COSTS ARE ESTIMATES AND MAY VARY AS PROJECT EVOLVES