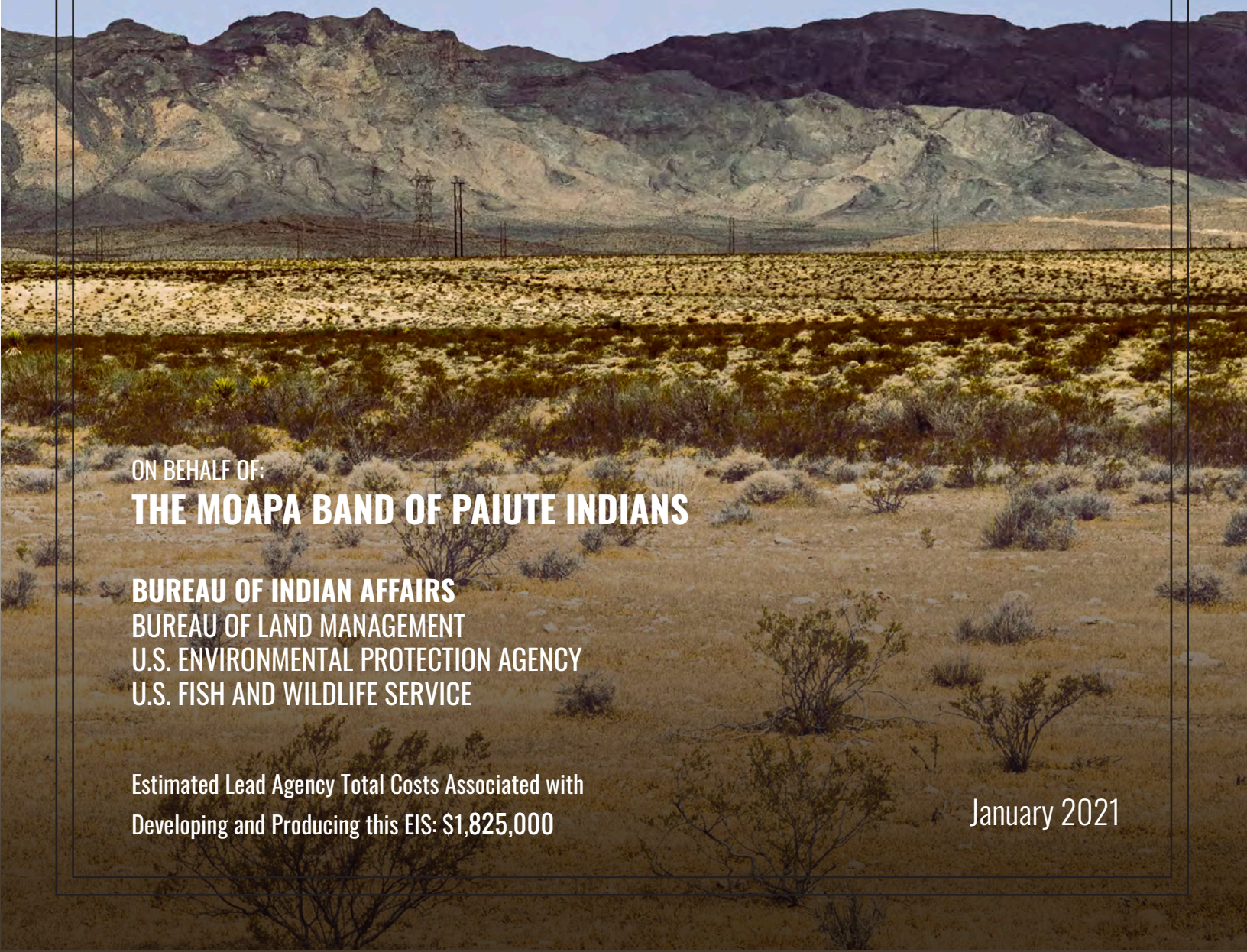
VOLUME 2

DRAFT ENVIRONMENTAL IMPACT STATEMENT

Southern Bighorn Solar Projects



ON BEHALF OF:

THE MOAPA BAND OF PAIUTE INDIANS

BUREAU OF INDIAN AFFAIRS
BUREAU OF LAND MANAGEMENT
U.S. ENVIRONMENTAL PROTECTION AGENCY
U.S. FISH AND WILDLIFE SERVICE

Estimated Lead Agency Total Costs Associated with Developing and Producing this EIS: $1,825,000

January 2021

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VOLUME 2

TABLE OF CONTENTS

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Appendix A

Scoping Report

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SOUTHERN BIGHORN SOLAR PROJECTS

ENVIRONMENTAL IMPACT STATEMENT

SCOPING REPORT

Bureau of Indian Affairs
Western Regional Office
2600 North Central Avenue
Phoenix, AZ 85004

June 2020

TABLE OF CONTENTS

APPENDICES

1.0 INTRODUCTION

300MS 8me LLC and 425LM 8me LLC (Applicants), both subsidiaries of 8minutne Solar Energy, have entered into two agreements with the Moapa Band of Paiute Indians (Moapa Band) to lease two adjacent sections of land for up to 50 years (a 30 year term with an option to extend for additional term of 10 years, construction, and decommissioning) on the Moapa River Indian Reservation (Reservation) for the purposes of constructing, operating and maintaining (O&M), and eventual decommissioning of solar photovoltaic (PV) electricity generation and battery energy storage system facilities (referred to as the solar fields). The two solar projects include the solar field, access roads, and collector lines and are referred to as the Southern Bighorn Solar Project I (SBSP I) and Southern Bighorn Solar Project II (SBSP II). The two projects are collectively referred to as the Project.

The Bureau of Indian Affairs (BIA), as lead agency, in cooperation with the Moapa Band, the Bureau of Land Management (BLM), Environmental Protection Agency (EPA), and the U.S. Fish and Wildlife Service (USFWS) intend to prepare an Environmental Impact Statement (SEIS) that will evaluate the expansion of the Project.

The National Environmental Policy Act (NEPA) scoping process is designed to inform and encourage involvement by all interested parties and to help agencies make better-informed decisions. This report summarizes all comments received during the scoping process for the EIS. The BIA and cooperating agencies will fully analyze the issues raised by these scoping comments to help shape the environmental analysis and alternatives to be considered in the Draft EIS.

The purpose of this report is to summarize issues raised by individuals, organizations, and agencies during the scoping comment period for this Project. This report also describes methods used for soliciting input, as well as how comments received were categorized by resource topic. A copy of each comment received is contained in **Appendix D** of this report.

PROJECT DESCRIPTION

The solar fields for the Project would be constructed on approximately 2,599 acres for SBSP 1 and 935 acres for SBSP 2 (3,534 acres combined) within a study area of approximately 6,355 acres. These lands are all located within the Reservation in an area set aside by the Moapa Band exclusively for the Project. The Project would generate a combined capacity of up to 400 megawatts (MW) of electricity: 300 MW for SBSP 1 and 100 MW for SBSP 2.

Rights-of-way for collector lines and existing access roads would be located on the Reservation, on Reservation lands administered by BLM, and on BLM lands. The overhead collector lines would connect the Project to the substation(s) within the boundaries of the previously approved Eagle Shadow Mountain Solar Project. From there, the electricity generated would connect to the existing transmission lines and be delivered to the regional electrical grid at NV Energy's Reid Gardner Substation.

Construction of SBSP 1 is expected to take approximately 14-16 months, and construction of SBSP 2 is expected to take approximately 8-10 months. SBSP 1 and SBSP 2 may be constructed simultaneously or sequentially. Major onsite facilities include multiple blocks of solar PV panels mounted on fixed tilt or

tracking systems, pad mounted inverters and transformers, collector lines, up to 1,000 MW-hours of battery storage, access roads, and O&M facilities. Water will be needed during construction for dust control and during operations for administrative and sanitary water use and for panel washing. The water supply would be leased from the Moapa Band and drawn from the Moapa Band's existing water rights.

The purposes of the proposed Project are, among other things, to: (1) provide a long-term, diverse, and viable economic revenue base and job opportunities for the Moapa Band; (2) assist Nevada to meet their State renewable energy goals documented in Nevada's reneable portfolio standard (RPS); and (3) allow the Moapa Band, in partnership with the Applicant, to optimize the use of the lease site while maximizing the potential economic benefit to the Tribe.

2.0 SCOPING PROCESS AND SOLICITATION OF COMMENTS

During the scoping period, the BIA informed the public, landowners, Government agencies, tribes, and interested stakeholders about the proposed SBSP 1 and SBSP 2 and solicited their comments.

The BIA announced the project and the initiation of the scoping process, held virtual public scoping meetings, and invited the public to comment and ask questions. The public scoping meetings were publicized in the Federal Register, on the project website, in letters mailed to interested stakeholders, and through public notices published in local newspapers. These outreach and notification activities are described in more detail in the following subsections.

FEDERAL REGISTER

The public scoping period officially began with the publication of the Notice of Intent (NOI) to prepare an EIS, which described the project, announced the virtual public scoping meetings, and outlined the ways to provide comments. The NOI was published in the Federal Register on May 8, 2020 and can be found in **Appendix A**.

PROJECT WEBSITE

A project website was established for access by anyone at any time during the EIS process. It provides project information and an opportunity to submit comments. The website will remain active for the duration of the EIS process and can be accessed at https://southernbighornsolar.com/.

SCOPING NOTIFICATION LETTER

Scoping notification letters were sent by the BIA to Government agencies, elected officials, property owners near the proposed Project, various non-Governmental organizations, and other interested stakeholders. The scoping letter briefly explained the project, identified the Federal review process, announced the virtual public scoping meetings, and described the various ways to provide comments. Included with the scoping notification letter were maps displaying the project location.

A total of 65 scoping letters and maps were mailed on May 8, 2020. A postcard update was sent shortly after on May 11, 2020 to provided corrected meeting call-in information. The scoping letter, maps, postcard update, and the project mailing list can be found in **Appendix B**.

NEWSPAPER ADVERTISEMENTS

Public notices announcing the virtual public scoping meetings were published in two local newspapers. The publications included:

- Las Vegas Review-Journal - on May 11 and 18, 2020
- Moapa Valley Progress - on May 13 and 20, 2020

Copies of the published public notices can be viewed in **Appendix B**.

METHODS FOR SUBMITTING COMMENTS

The BIA encouraged interested parties to submit comments through a variety of methods:

- Individual letters could be hand delivered or mailed via the U.S. Postal Service to Mr. Chip Lewis, Regional Environmental Protection Officer, BIA Western Regional Office, 2600 North Central Avenue, 4th Floor Mailroom, Phoenix, AZ 85004.
- Comments could be submitted using the "Comment Form" on the project website at https://southernbighornsolar.com/SBSPForm.pdf. This form could be hand delivered or mailed as described above. A copy of the comment form is provided in **Appendix C**.
- Comments could be submitted on the "Get Involved" tab on the project website via the comment form at https://southernbighornsolar.com/contact/.
- Comments could also be provided via email or telephone to Mr. Chip Lewis at chip.lewis@bia.gov; telephone: (602) 379-6750.
- Comments could be provided at the virtual public scoping meetings either orally or by commenting in the chat function during the meetings.

See Chapter 3.0 for the details of the virtual public scoping meetings.

3.0 PUBLIC SCOPING MEETINGS

The BIA hosted two public information and scoping meetings. To help protect the public and limit the spread of the COVID-19 virus, virtual public meetings were held through a Zoom virtual meeting which could be accessed from the project website at https://southernbighornsolar.com/public-scoping-meetings/. The PowerPoint presentation was posted to the project website prior to the virtual meetings. Those who could not live stream the presentation were able to access the meeting presentation and could join by telephone. Additionally, the live presentation was recorded and made accessible for viewing throughout the remainder of the scoping period. Anyone with limited or no internet access were given the option to request printed scoping meeting materials, delivered by mail.

The virtual scoping meetings provided a description of the NEPA process, information on the proposed project, and the opportunity to provide public comments. The two virtual public scoping meetings were held at the dates and times listed below.

Meeting Date	Meeting Time	Attendance
Wednesday May 27, 2020	1:30 to 3:00 pm PDT	3*
Thursday May 28, 2020	5:30 to 7:00 pm PDT	1*
Total Attendance	N/A	**4**

**Note: These attendance numbers do not include individuals from BIA, Applicant, and their consultants.*

In addition to the public scoping meetings, a virtual interagency scoping meeting was held on Thursday May 28, 2020, to provide an opportunity for federal, state, and local agencies to comment on and provide input to the scope of issues to be addressed in the draft EIS, and to assist in the identification of significant issues related to the Proposed Action. A summary of this meeting and the meeting materials will be included in the project record.

HANDOUTS

The following handouts were available on the project website (https://southernbighornsolar.com/public-scoping-meetings/) for the virtual public scoping meetings:

- Project scoping letter
- Comment form
- Project information handout
- PowerPoint presentation

These meeting materials can be found in **Appendix C**.

PRESENTATION

At both of the virtual public scoping meetings, at approximately 1:30 pm on Wednesday May 27, and 5:30 pm on Thursday May 28, a formal presentation was provided followed by time for questions and answers and an opportunity to provide verbal comments.

The presentation opened with a welcome and introductions by Mr. Chip Lewis, the Environmental Protection Officer for the BIA, and project manager for the SBSP 1and SBSP 2 EIS. Ms. Laura Watters, Chairperson of the Moapa Band of Paiute Indians attended the May 28 meeting and offered remarks.

Mr. Lewis provided an overview of the NEPA process and presented the proposed Project with an overview of the technical aspects of the Project and a summary of the environmental issues identified to date. Following the presentation, attendees were invited to provide verbal comments or ask questions about the Project.

A court reporter was present at both meetings to record the presentation and the public comments expressed. The scoping meeting presentation is included in **Appendix C** and transcripts of the meetings, including verbal comments and comments entered in the chat box, are provided in **Appendix E**.

4.0 COMMENT EVALUATION

COMMENTS RECEIVED

The scoping period began on May 8, 2020 - the date the NOI was published in the Federal Register. There was one comment received at the two public scoping meetings. There were also 34 comments received through a variety of means (see "Methods for Submitting Comments" for more details). All comments were evaluated and are listed in a comment matrix provided in **Appendix D**. Copies of the original comments are also contained in **Appendix D**, and comments captured during the two public scoping meetings can be found in the meeting transcripts in **Appendix E**.

PROCESSING COMMENTS

Each comment document was read to identify key issues. In some cases, some comment documents contained multiple comments that were organized by issue categories.

SUMMARIZATION

This report summarizes issue categories identified from the scoping comments received. For the purposes of this summary, all comments were given equal weight, regardless of whether they were mentioned once or mentioned several times. This report does not prioritize issue categories or track the number of comments each issue category received. The identified issues and areas of concern will be used to guide the environmental analysis for the EIS.

5.0 ISSUE SUMMARY

This section provides a summary of the key issues identified in the comments provided during scoping for the Project. These issues will be addressed in the EIS analysis.

KEY ISSUES IDENTIFIED DURING SCOPING	
ISSUE CATEGORY	**ISSUE/COMMENT**
Air Quality/Public Health	Include measures to control and minimize fugitive dust and prevent worker exposure to Coccidioides spores, if present.
	Recommend contractors attend a Dust Control Class held by Clark County, and utilize resources from the county Dust Control Handbook.
	Discuss grading and mowing impacts to biological soil crust, old growth desert plants, and caliche and how this contributes to fugitive dust.
Cumulative Impacts	Suggest using cumulative impacts methodology developed by EPA, Federal Highway Administration, and California Department of Transportation.
	Discuss cumulative impacts of other solar projects in the area, particularly if the construction schedules overlap, to key resources including air quality, worker health, impacts to groundwater and surface water, and regional biological diversity.
Socioeconomics	Describe the jobs for tribal members and others in the region that would be created, both in the short term and long term.
Soils	Include measures to minimize soil disturbance, erosion, and sedimentation to the extent possible.
	Identify acreages that will be graded in DEIS and include measures that minimize grading to the greatest extent possible.
Vegetation	Include measures to minimize vegetation clearing and maintaining presence of native plants to the greatest extent possible.
	Develop a Weed Management Plan that includes the latest information regarding the effectiveness of existing control measures in the area.
	Discuss impacts of shading, fencing, and use of pesticides (if relevant) on vegetation.
	Discuss general locations of and impacts to rare plants and how impacts would be minimized.
Visual Resources	Evaluate the impacts the expanded solar field could have on views of the landscape.
Waste, Hazardous or Solid	Ensure battery storage areas are not located in drainages or any areas subject to flooding.
Water Resources	Recommend preparing a master drainage plan for the Project and all other nearby solar projects that includes sediment and channel elevation monitoring and adaptive management strategies.
	Minimize road crossings over washes. Design road crossings to provide adequate flow through during large storm events.
	Include wide buffers around washes to account for flows from nearby solar projects and identify buffers for each nearby solar project.
	Describe in the DEIS how the stormwater and drainage plan integrates plans from other solar projects in the area.
	Describe drainage networks, erosion, and sedimentation in combination with nearby solar projects.
	Include measures that accommodate increased intensity and severity of stormwater flows. Recommend increasing stormwater infrastructure.

KEY ISSUES IDENTIFIED DURING SCOPING	
ISSUE CATEGORY	**ISSUE/COMMENT**
Wildlife	Describe impacts to threatened and endangered species (including the desert tortoise) and other sensitive wildlife species, including long-term effects of fragmentation and restricting gene flow, and cumulative impacts of other solar projects in area.
	Discuss impacts to birds from the "lake effect," where birds may mistake the PV panels for water resulting in unexpected deaths from collision. Include avian mortality monitoring and adaptive management measures.
	Consider measures that minimize impacts to desert tortoise habitat and connectivity, including fencing that allows tortoise to reenter site and monitoring.
	Consider incorporating Nevada statutes and codes to minimize impacts of moving desert tortoise out of harm's way on non-Tribal lands.
	Include measures for avoiding or minimizing impacts to Gila monster should this species be encountered.
	Consider inclusion of seasonal timing restrictions to minimize impacts to breeding migratory birds, where appropriate.

6.0 NEXT STEPS

The BIA will develop the Draft EIS focusing on the identified issues, including the evaluation of a range of reasonable alternatives, assessment of potential impacts, and identification of possible mitigation measures.

Once complete, the BIA will publicly circulate the Draft EIS for review and comment. During this period, the BIA will notify the public of the Draft EIS availability via a Notice of Availability (NOA) published in the Federal Register and public notices in the local papers. There will also be public meetings where those who are interested may comment on the Draft EIS.

Any public or stakeholder comments received on the Draft EIS will be addressed in the Final EIS. The availability of the Final EIS will also be announced via an NOA published in the Federal Register and public notices in the local papers.

The BIA anticipates providing periodic status updates as needed and publishing all project documents on the project website at https://southernbighornsolar.com/.

Scoping Report Appendix A

Notice of Intent

Disease Diagnostics Laboratory in Pullman, Washington, to be screened for a number of pathogens, including *Mycoplasma ovipneumoniae* (*M. ovi*), a bacterium known to be associated with acute pneumonia mortality events. However, *M. ovi* was not detected in any of the samples, and there does not appear to be a clear association of the population decline with respiratory disease or other common diseases. Since January 2019, eight of 19 radio-collared sheep have died; six because of mountain lion predation, one killed legally by a hunter, and one from unknown causes.

Given rapidly declining sheep numbers and 2 years of poor lamb recruitment, the herd is at risk of extirpation from the refuge in the next few years unless appropriate management actions are taken. In response, ODFW suspended sheep hunting on the Refuge following the 2019 hunting season. Because there is considerable uncertainty about what the proximate and ultimate causes of this decline are, development of a management plan and EIS are warranted in order to analyze existing data and identify short- and long-term alternatives and actions needed to restore the bighorn sheep herd to a self-sustaining population level. Possible management actions include continued monitoring, management of the sheep and associated predator populations, and restoration and maintenance of habitat.

Preliminary Issues, Concerns, and Opportunities

Based on the fundamental principles of wildlife management, we have identified the following preliminary issues, concerns, and opportunities regarding the sheep population that we may address in the plan. Additional issues may be identified during the public scoping process.

- *Bighorn sheep population objectives.* What parameters should the Service use to define a self-sustainable population on the refuge? What criteria or triggers should the Service consider when deciding to implement or suspend management actions?
- *Bighorn sheep survival and mortality.* What actions can the Service take to improve sheep survival and lamb recruitment? What are the effects of the various sources of mortality—including disease, predation, and hunting—on the long-term viability of the sheep population? Given risks of disease introductions, is there a role for augmenting the sheep population?
- *Habitat quality and quantity.* What actions can the Service take to maintain and restore sheep habitat? How are western juniper expansion and invasive plant species (invasive annual grasses including cheatgrass) affecting the sheep population? Is there a role for prescribed fire to manage sheep habitats? Is natural water availability a limiting resource?
- *Potential alternatives and environmental analysis.* Potential alternatives include a focus on habitat, a focus on population management, or a combination of approaches. What alternatives for restoring the bighorn sheep population should the Service explore? Which components of the human environment should the Service emphasize in the environmental analysis?

Public Availability of Comments

All comments received from individuals become part of the official public record. We will handle all requests for such comments in accordance with the Freedom of Information Act and the CEQ's NEPA regulations at 40 CFR 1506.6(f). The Service's practice is to make comments, including names and home addresses of respondents, available for public review during regular business hours. Individual respondents may request that we withhold their home address from the record, which we will honor to the extent allowable by law. If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your comments.

Charles Stenvall,

Acting Regional Refuge Chief, Pacific Region, Portland, Oregon.

[FR Doc. 2020–09255 Filed 5–7–20; 8:45 am]

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DEPARTMENT OF THE INTERIOR

Bureau of Indian Affairs

[201A2100DD/AAKC001030/A0A501010.999900 253G]

Notice of Intent To Prepare an Environmental Impact Statement for the Southern Bighorn Solar Project on the Moapa River Indian Reservation, Clark County, Nevada

AGENCY: Bureau of Indian Affairs, Interior.

ACTION: Notice of intent.

SUMMARY: The Bureau of Indian Affairs (BIA), as lead agency, in cooperation with the Moapa Band of Paiute Indians (Moapa Band), the Bureau of Land Management (BLM), and other agencies, intend to prepare an Environmental Impact Statement (EIS) that will evaluate a photovoltaic (PV) solar energy generation and storage projects on the Moapa River Indian Reservation (Reservation) and collector lines and access roads located on the Reservation, Reservation lands administered by BLM, and BLM lands. This notice announces the beginning of the scoping process to solicit public comments and identify potential issues related to the EIS. It also announces that two live streaming events will be held where the project team will introduce the project and be available by internet and by phone to document and discuss potential issues, alternatives, and mitigation to be considered in the EIS.

DATES: Written comments on the scope of the EIS or implementation of the proposal must arrive by 11:59 p.m. on June 8, 2020. The dates and times of the virtual public scoping meetings will be published in the *Las Vegas Review-Journal* and *Moapa Valley Progress* 15 days before the scoping meetings.

ADDRESSES: You may mail, email, or hand carry written comments to Mr. Chip Lewis, BIA Western Regional Office, 2600 North Central Avenue, 4th Floor Mailroom, Phoenix, Arizona 85004; telephone: (602) 379–6750; email: *Chip.Lewis@bia.gov.*

SUPPLEMENTARY INFORMATION: The proposed Federal action, taken under 25 U.S.C. 415, is the BIA's approval of two solar energy ground leases and associated agreements entered into by the Moapa Band with 300MS 8me LLC and 425LM 8me LLC (Applicants), both subsidiaries of 8minute Solar Energy. The agreements provide for construction, operation and maintenance (O&M), and eventual decommissioning of the PV electricity generation and battery storage facilities located entirely on the Reservation, in Clark County Nevada. The PV electricity generation and battery storage facilities would be located on up to 3,600 acres of tribal trust land and would have a combined capacity of up to 400 megawatts alternating current (MWac)—300 MWac for one project/phase, and 100 MWac for a second project/phase. Collector lines and access roads required for interconnection of the solar projects would be located on the Reservation, Reservation lands administered by the BLM, and BLM lands. Together, the proposed solar energy generation and storage facilities, collector lines, and other associated facilities will make up the two projects/phases of the Southern Bighorn Solar Project (SBSP). The proposed SBSP would require the BIA to approve a business lease and for both the BIA and the BLM to approve and authorize

rights-of-way (ROWs) for the electrical collector lines and access roads.

The SBSP would be constructed on up to 3,600 acres located within a 6,308-acre lease option area in Township (T) 16 South (S), Range (R) 64 East (E) that includes all or parts of Sections 12–14, 22–27, and 33–36; T16S R65E Sections 4–9, 16–18, 30, and 31; and T17S R64E Sections 10–12, Mount Diablo Baseline and Meridian, Nevada. Primary access to the Project would be provided by I–15, North Las Vegas Boulevard, and an existing improved access road on Reservation lands, Reservation lands administered by the BLM, and BLM lands. The overhead collector lines would connect the solar projects to the substation(s) within the boundaries of the previously approved Eagle Shadow Mountain Solar Project. From there, the electricity generated would connect to the existing gen-tie line and be delivered to the regional electrical grid at NV Energy's Reid Gardner Substation.

Construction of the 300MWac project/phase is expected to take approximately 14–16 months, and construction of the up to 100MWac project/phase is expected to take approximately 8–10 months. The two projects/phases may be constructed simultaneously or sequentially. The electricity generation and storage facilities are expected to be operated for up to 40 years under the terms of the leases. Major onsite facilities include multiple blocks of solar PV panels mounted on fixed tilt or tracking systems, pad mounted inverters and transformers, collector lines, up to 1,000 MW-hours of battery storage, access roads, and O&M facilities. Water will be needed during construction for dust control and a minimal amount will be needed during operations for administrative and sanitary water use and for panel washing. The water supply required for the Project would be leased from the Moapa Band.

The purposes of the proposed Project are, among other things, to: (1) Provide a long-term, diverse, and viable economic revenue base and job opportunities for the Moapa Band; (2) assist Nevada and neighboring states to meet their State renewable energy needs; and (3) allow the Moapa Band, in partnership with the Applicant, to optimize the use of the lease site while maximizing the potential economic benefit to the Tribe.

BIA will prepare the EIS in cooperation with the Moapa Band, BLM, Environmental Protection Agency, and possibly Nevada Department of Wildlife. In addition, the U.S. Fish and Wildlife Service (USFWS) and National Park Service will provide input on the analysis. The resulting EIS will aim to (1) provide agency decision makers, the Moapa Band, and the general public with a comprehensive understanding of the impacts of the proposed Project and alternatives on the Reservation; (2) describe the cumulative impacts of increased development on the Reservation; and (3) identify and propose mitigation measures that would minimize or prevent significant adverse impacts. Consistent with these objectives, the EIS will analyze the proposed Project and appurtenant features, viable alternatives, and the No Action alternative. Other alternatives may be identified in response to issues raised during the scoping process.

The EIS will provide a framework for BIA and BLM to make determinations and to decide whether to take the aforementioned Federal actions. In addition, BIA will use and coordinate the National Environmental Policy Act (NEPA) commenting process to satisfy its obligations under Section 106 of the National Historic Preservation Act (16 U.S.C. 470f) as provided for in 36 CFR 800.2(d)(3). Native American tribal consultations will be conducted in accordance with policy, and tribal concerns will be given due consideration, including impacts on Indian trust assets. Other federal agencies may rely on the EIS to make decisions under their authority and the Moapa Band may also use the EIS to make decisions under their Tribal Environmental Policy Ordinance. USFWS will review the EIS for consistency with the Endangered Species Act, as amended, and other implementing acts, and may rely on the EIS to support its decisions and opinions regarding the Project.

Issues to be addressed in the EIS analysis may include, but would not be limited to, Project impacts on water resources, biological resources, threatened and endangered species, cultural resources, Native American religious concerns, and aesthetics. In addition to those resource topics identified above, Federal, State, and local agencies, along with other stakeholders that may be interested or affected by the BIA's decision on the proposed Project, are invited to participate in the scoping process to identify additional issues to be addressed.

Submission of Public Comments

Please include your name, return address, and the caption ''EIS, Southern Bighorn Solar Project,'' on the first page of any written comments. You may also submit comments verbally during one of the virtual public scoping meeting presentations or provide written comments to the address listed above in the **ADDRESSES** section.

Public scoping meetings will be held to further describe the Project and identify potential issues and alternatives to be considered in the EIS. To help protect the public and limit the spread of the COVID–19 virus, virtual public meetings will be held, where a short presentation will be made and team members present to discuss and answer questions. The PowerPoint presentation will be posted to the project website prior to the virtual meetings. Those who cannot live stream the presentation would be able to access the meeting presentation and could join by telephone. Additionally, the live presentation will be recorded and made accessible for viewing throughout the scoping period. The first public scoping meeting will be held in the afternoon by video and telephone conference and the second public scoping meeting will be held in the evening by video and telephone conference. The dates and times of the public scoping meetings will be included in notices to be published in the, *Las Vegas Review-Journal* and *Moapa Valley Progress* 15 days before the meetings.

Public Comment Availability

Comments, including names and addresses of respondents, will be available for public review at the mailing address shown in the **ADDRESSES** section during regular business hours, 8 a.m. to 4:30 p.m., Monday through Friday, except holidays. Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time.

Authority

This notice is published in accordance with 40 CFR 1501.7 of the Council of Environmental Quality regulations and 43 CFR 46.235 of the Department of the Interior Regulations implementing the procedural requirements of the NEPA (42 U.S.C. 4321 *et seq.*), and in accordance with the exercise of authority delegated to the Principal Deputy Assistant Secretary-Indian Affairs by part 209 of the Department Manual.

Tara Sweeney,

Assistant Secretary—Indian Affairs.

[FR Doc. 2020–09831 Filed 5–7–20; 8:45 am]

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Scoping Report Appendix B

Scoping Notifications and Mailing List

Appendix B – Scoping Notifications and Mailing List

In addition to the NOI, the public was informed about the scoping period and virtual meetings through one or more of the following methods. This appendix contains documentation of:

- Letters sent via U.S. Mail –
    - Scoping Letter
    - Project Maps
    - Scoping Meeting Update Postcard
    - Mailing List (for scoping letter with maps and update postcard)
- Newspaper Legal Notices –
    - Las Vegas Review Journal
    - Moapa Valley Progress
- Notices for Moapa Band of Paiute Indians Monthly Newsletter –
    - Material for Newsletter

Scoping Letter

United States Department of the Interior
BUREAU OF INDIAN AFFAIRS
Western Region
2600 N. Central Avenue, Fourth Floor Mailroom
Phoenix, AZ 85004-3050

DEPARTMENT OF THE INTERIOR

Bureau of Indian Affairs

Notice of Intent to Prepare an Environmental Impact Statement for the Proposed Southern Bighorn Solar Project on the Moapa River Indian Reservation, Clark County, NV

AGENCY: Bureau of Indian Affairs, Interior

ACTION: Notice

SUMMARY: The Bureau of Indian Affairs (BIA), as lead agency in cooperation with the Moapa Band of Paiute Indians (Moapa Band), the Bureau of Land Management (BLM), and other agencies, intend to prepare an Environmental Impact Statement (EIS) that will evaluate photovoltaic (PV) solar energy generation and battery storage projects on the Moapa River Indian Reservation (Reservation) and collector lines and access roads located on the Reservation, Reservation lands managed by BLM, and BLM land.

This notice announces the beginning of the scoping process to solicit public comments and identify potential issues related to the EIS. It also announces that two live-streaming events will be held where the project team will introduce the project and be available by internet and by phone to document and discuss potential issues, alternatives, and mitigation to be considered in the EIS.

DATES: Written comments on the scope of the EIS or implementation of the proposal must arrive by June 8, 2020. The virtual public scoping meetings will be held on Wednesday May 27 at 1:30 to 3:00 p.m. and Thursday May 28 at 5:30 to 7:00 p.m. Pacific Daylight Time (PDT). Instructions will be published in the *Las Vegas Review-Journal* and *Moapa Valley Progress* 15 days before the scoping meetings. See VIRTUAL PUBLIC SCOPING MEETINGS section below for instructions on joinging the meetings.

ADDRESSES: You may mail, email, or hand carry written comments to Mr. Chip Lewis, BIA Western Regional Office, 2600 North Central Avenue, 4th Floor Mailroom, Phoenix, Arizona 85004; telephone: (602) 379–6750; email: *Chip.Lewis@bia.gov*. Written comments may also be submitted on the project website at https://southernbighornsolar.com/.

SUPPLEMENTARY INFORMATION: The Moapa Band has requested that the BIA approve two solar energy ground leases and associated agreements between the Tribe as lessor and 300MS 8me LLC and 425LM 8me LLC, both subsidiaries of 8minute Solar Energy, as lessees to construct, operate and maintain, and eventually decommission two solar generating facilities using photovoltaic technology. The Project is located on the Reservation in Clark County, Nevada approximately 30 miles northeast of Las Vegas. The solar facilities would be located on up to 3,600 acres of tribal trust land and have a combined capacity of up to 400 megawatts (MW) alternating current: 300 MW for one project/phase; and 100 MWac for a second project/phase. Rights-of-way for collector lines and existing access roads would be located on the Reservation, on Reservation lands managed by BLM, and on BLM lands. The overhead collector lines would connect the solar projects to the substation(s) within the boundaries of the previously approved Eagle Shadow Mountain Solar Project. From there, the electricity generated would connect to the existing transmission lines and be delivered to the regional electrical grid at the NV Energy's Reid Gardner Substation.

Construction of the 300MWac project/phase is expected to take approximately 14-16 months, and construction of the 100MWac project/phase is expected to take approximately 8-10 months. The two projects/phases may be constructed simultaneously or sequentially. The electricity generation and battery storage facilities are expected to be operated for up to 40 years under the terms of the leases. Major onsite facilities include multiple blocks of solar PV panels mounted on fixed tilt or tracking systems, pad mounted inverters and transformers, collector lines, up to 1,000 MW-hours of battery storage, access roads, and O&M facilities. Water will be needed during construction for dust control and during operations for administrative and sanitary water use and for panel washing. The water supply would be leased from the Moapa Band.

The purpose of the proposed Project are, among other things, to: (1) provide a long-term, diverse, and viable economic revenue base and job opportunities for the Moapa Band; (2) assist Nevada and neighboring states to meet their State renewable energy needs; and (3) allow the Moapa Band, in partnership with the Applicant, to optimize the use of the lease site while maximizing the potential economic benefit to the Tribe.

BIA will prepare the EIS in cooperation with the Moapa Band, BLM, and the Environmental Protection Agency. In addition, the U.S. Fish and Wildlife Service (USFWS) and National Park Service will provide input on the analysis. The resulting EIS will aim to (1) provide agency decision makers, the Moapa Band, and the general public with a comprehensive understanding of the impacts of the proposed Project and alternatives on the Reservation; (2) describe the cumulative

impacts of increased development on the Reservation; and (3) identify and propose mitigation measures that would minimize or prevent significant adverse impacts. Consistent with these objectives, the EIS will analyze the proposed Project and appurtenant features, viable alternatives, and the No Action alternative. Other alternatives may be identified in response to issues raised during the scoping process.

The EIS will provide a framework for BIA and BLM to make determinations and to decide whether to take the aforementioned Federal actions. In addition, BIA will use and coordinate the National Environmental Policy Act (NEPA) commenting process to satisfy its obligations under Section 106 of the National Historic Preservation Act (16 U.S.C. §470f) as provided for in 36 C.F.R. § 800.2(d)(3). Native American tribal consultations will be conducted in accordance with policy, and tribal concerns will be given due consideration, including impacts on Indian trust assets. Other federal agencies may rely on the EIS to make decisions under their authority and the Moapa Band may also use the EIS to make decisions under their Tribal Environmental Policy Ordinance. USFWS will review the EIS for consistency with the Endangered Species Act (50 C.F.R. Part 17), as amended, and other implementing acts, and may rely on the EIS to support its decisions and opinions regarding the Project.

Issues to be addressed in the EIS analysis may include, but would not be limited to, Project impacts on water resources, biological resources, threatened and endangered species, cultural resources, Native American religious concerns, and aesthetics. In addition to those resource topics identified above, Federal, State, and local agencies, along with other stakeholders that may be interested or affected by the BIA's decision on the proposed Project, are invited to participate in the scoping process to identify additional issues to be addressed.

SUBMISSION OF PUBLIC COMMENTS: Written comments on the scope of the EIS or implementation of the proposal must arrive by June 8, 2020 and may be submitted to the address listed above in the ADDRESSES section. Please include your name, return address, and the caption ''EIS, Southern Bighorn Solar Project,'' on the first page of any comments.

Public scoping meetings will be held to further describe the Project and identify potential issues and alternatives to be considered in the EIS. To help protect the public and limit the spread of the COVID-19 virus, virtual public meetings will be held, where a short presentation will be made and team members will be present to discuss and answer questions. The PowerPoint presentation will be posted to the project website prior to the virtual meetings. Those who cannot live stream the presentation would be able to access the meeting presentation and could join by telephone. Additionally, the live presentation will be recorded and made accessible for viewing throughout the scoping period. For those with limited or no internet access, a request for printed scoping meeting materials may be submitted to the addresses listed above and materials will be sent in the mail.

VIRTUAL PUBLIC SCOPING MEETINGS: Virtual public scoping meetings will be held on Wednesday May 27 at 1:30 to 3:00 p.m. and Thursday May 28 at 5:30 to 7:00 p.m. PDT. The public meetings can be joined online or over the phone.

To join the meeting online: access on the website at https://southernbighornsolar.com/public-scoping-meetings/

To join the meeting by phone: call (415) 762-9988 or (646) 568-7788.

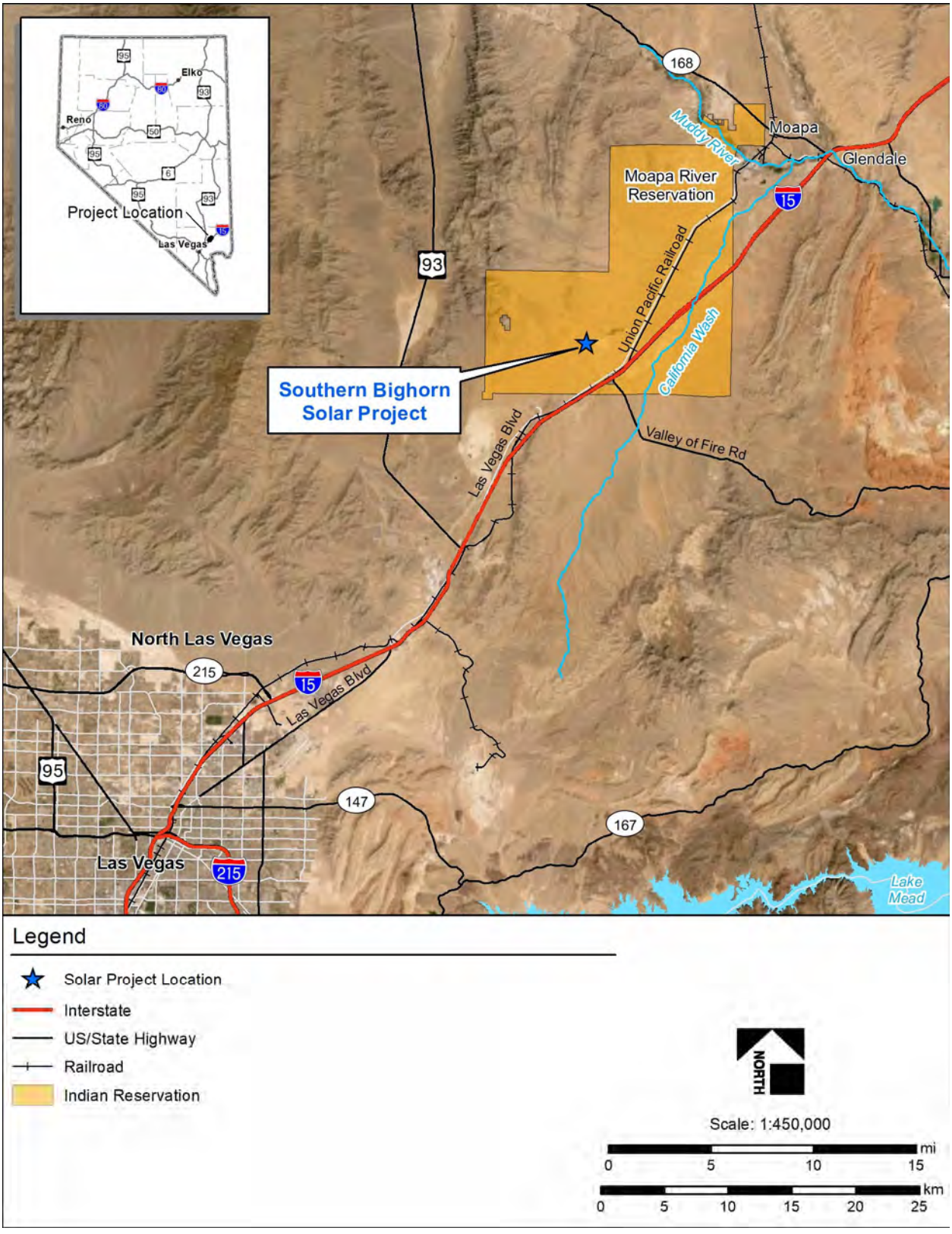
- For Wednesday May 27, use Meeting Identification Number 927 5793 2205
- For Thursday. May 28, use Meeting Identification Number 931 2831 5648

PUBLIC COMMENT AVAILABILITY: Comments, including names and addresses of respondents, will be available for public review at the mailing address shown in the ADDRESSES section during regular business hours, 8 a.m. to 4:30 p.m., Monday through Friday, except holidays. Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time.

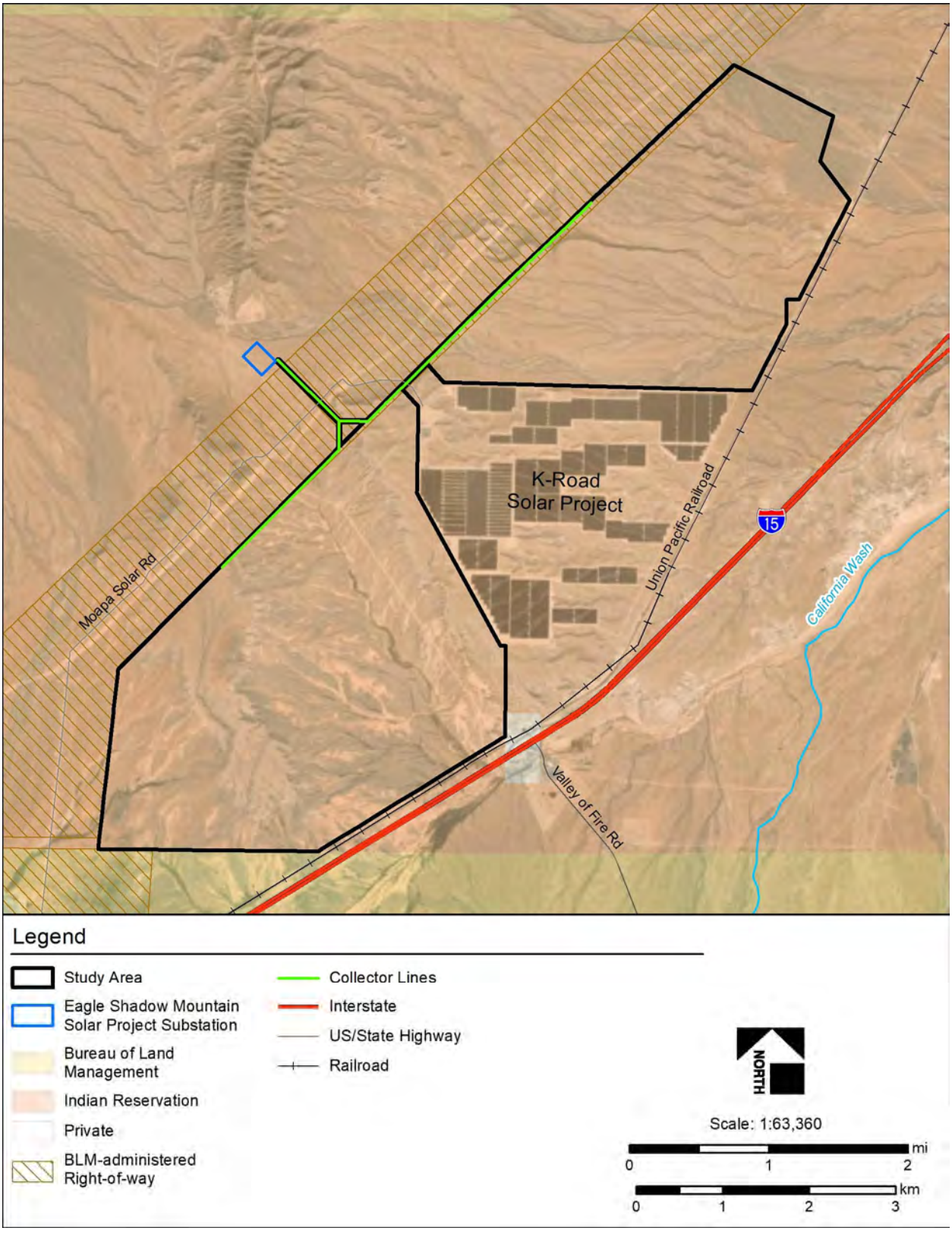
AUTHORITY: This notice is published in accordance with 40 CFR 1501.7 of the Council of Environmental Quality regulations and 43 CFR 46.235 of the Department of the Interior Regulations implementing the procedural requirements of the NEPA (42 U.S.C. 4321 et seq.), and in accordance with the exercise of authority delegated to the Principal Deputy Assistant Secretary-Indian Affairs by part 209 of the Department Manual.

Date: 5/11/2020

Mr. Bryan Bowker
Director, Western Region
Bureau of Indian Affairs



Project Location Map



Project Study Area

Southern Bighorn Solar Project
Notice of Intent to Prepare an Environmental Impact Statement

A letter was mailed to you dated May 8, 2020, regarding the public scoping meetings and associated comment period for the above-referenced project. This postcard identifies an update to the previous letter. **Updated May 11, 2020: Call-in information was updated with the correct Meeting Identification Numbers**

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*** Meeting Identification Numbers have been corrected**

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*** Meeting Identification Numbers have been corrected**

Mailing List

First	Last	Title	Organization/Affiliation	Address 1	Address 2	City	State	Zip
			Center for Biological Diversity	PO Box 710		Tucson	AZ	85702-0710
			Center for Energy Efficiency and Renewable Technologies	1100 11th Street, Suite 311		Sacramento	CA	95814
		Community Development	City of Mesquite	10 E. Mesquite Blvd.		Mesquite	NV	89027
			Clark County Department of Comprehensive Planning	Clark County Government Center	500 South Grand Central Parkway	Las Vegas	NV	89155
			Clark County Regional Flood Control District	600 South Grand Central Parkway	Suite 300	Las Vegas	NV	89106-4511
			Conservation District of Southern Nevada	5820 South Pecos Road A-400		Las Vegas	NV	89120
			Department of Air Quality and Environmental Management	Clark County Desert Conservation Program	500 South Grand Central Parkway	Las Vegas	NV	89155-5201
			Desert Tortoise Council	4654 East Avenue S	#257B	Palmdale	CA	93552
			Environmental Defense Fund	1107 9th Street	Suite 1070	Sacramento	CA	95814
Daniel	Shoemaker		Federal Aviation Administration	Air Traffic Airspace Branch, ASW-520	2601 Meacham Blvd.	Fort Worth	TX	76137-0520
		President	Friends of Gold Butte	12 W. Mesquite Blvd.	Suite 106	Mesquite	NV	89027
			Friends of Nevada Wilderness	PO Box 33155		Las Vegas	NV	89133
			FTV Comm C/O Level 3	1025 Eldorado Way		Broomfield	CO	80023
			Great Basin Resource Watch	P.O. Box 207		Reno	NV	89504
			Great Basin Transmission, LLC	400 Chesterfield Center	Suite 110	St. Louis	MO	63017
			Holly Energy Partners	P.O. Box 1260		Artesia	NM	88211
			Intermountain Power Project	P.O. Box 111		Los Angeles	CA	90051
			Kern River Gas Transmission Company	2755 East Cottonwood Parkway	Suite 300	Salt Lake City	UT	84121
		Real Estate Group	KRoad Moapa Solar, LLC	c/o First Solar Electric, LLC	135 Main St. 6th Floor	San Francisco	CA	94105
			Lahontan Audubon Society	Board of Trustees	P.O. Box 2304	Reno	NV	89505
Charles	Holloway	Manager	Los Angeles Department of Water and Power	Environmental Planning and Assessment	111 N. Hope Street, Room 1044	Los Angeles	CA	90012
			Natural Resource Conservation Service	5820 South Pecos Road	Building A, Suite 400	Las Vegas	NV	89120
			Natural Resources Defense Council	1314 Second Street		Santa Monica	CA	90401
			Nellis Air Force Base	6020 Beale Ave	Suite 135	Nellis AFB	NV	89191
			Nevada Clean Energy Campaign	755 N Roop St #202		Carson City	NV	89701
			Nevada Conservation League	2275 Renaissance Drive	Suite A	Las Vegas	NV	89128
			Nevada Department of Air Quality and Environmental Management	Clark County Government Center	500 South Grand Central Parkway	Las Vegas	NV	89156
			Nevada Department of Conservation and Natural Resources	901 S. Stewart St., suite 1003		Carson City	NV	89701
			Nevada Department of Transportation	1263 South Stewart Street		Carson City	NV	89712
D. Bradford	Hardenbrook	Supervisory Habitat Biologist	Nevada Department of Wildlife	Southern Region	3373 Pepper Lane	Las Vegas	NV	89120
			Nevada Division of Environmental Protection	901 South Stewart Street, Suite 4001		Carson City	NV	89701-5249
			NV Energy	Environmental Department	PO Box 98910	Las Vegas	NV	89151-0001
			NV Energy	Corporate Headquarters	6226 West Sahara Avenue	Las Vegas	NV	89146
			Nevada Environmental Coalition, Inc	10720 Button Willow Drive		Las Vegas	NV	89134
			Nevada Natural Resource Education Council	901 S Stewart St		Carson City	NV	89702-4741
			Nevada State Historic Preservation Office	100 North Stewart Street		Carson City	NV	89701-4285
			Nevada Wilderness Project	Southern Nevada Office	PO Box 33155	Las Vegas	NV	89133
			Nevada Wildlife Federation	PO Box 71238		Reno	NV	89570
		Conservation Committee	Red Rock Audubon Society	PO Box 96691		Las Vegas	NV	89193
Bella	Bakrania, EIT	Senior Engineer	Geosyntec Consultants, Inc.	9480 South Eastern Ave, Suite 217		Las Vegas	NV	89123
			Sierra Club	3828 Meadows Lane		Las Vegas	NV	89107
			Sierra Nevada Alliance	PO Box 7989		South Lake Tahoe	CA	96158
			Sierra Pacific Power Company	P.O. Box 10100		Reno	NV	89520
			Southern Nevada Water Authority	1001 S. Valley View Blvd		Las Vegas	NV	89153
			The Conservation Alliance	PO Box 1275		Bend	OR	97709
			The Nature Conservancy	8329 West Sunset Road	Suite 200	Las Vegas	NV	89113
The Honorable Dina	Titus	Nevada District 1	U S HOUSE OF REPRESENTATIVES	495 South Main Street	3rd Floor	Las Vegas	NV	89101
The Honorable Steven	Horsford	Nevada District 4	U S HOUSE OF REPRESENTATIVES	2250 Las Vegas Blvd. North	Suite 500	Las Vegas	NV	89030
The Honorable Susie	Lee	Nevada District 3	U S HOUSE OF REPRESENTATIVES	8872 S. Eastern Ave.	Suite 210 & 220	Las Vegas	NV	89123
The Honorable Mark	Amodei	Nevada District 2	U S HOUSE OF REPRESENTATIVES	5310 Kietzke Lane	Suite 103	Reno	NV	89511
The Honorable Dina	Titus	Nevada District 1	U S HOUSE OF REPRESENTATIVES	2464 Rayburn House Office Building		Washington	DC	20515
The Honorable Steven	Horsford	Nevada District 4	U S HOUSE OF REPRESENTATIVES	1330 Longworth House Office Building		Washington	DC	20515
The Honorable Susie	Lee	Nevada District 3	U S HOUSE OF REPRESENTATIVES	522 Cannon House Office Building		Washington	DC	20515
The Honorable Mark	Amodei	Nevada District 2	U S HOUSE OF REPRESENTATIVES	104 Cannon House Office Building		Washington	DC	20515
			Union Pacific Railroad Company	1400 Douglas Street		Omaha	NE	68179
The Honorable Catherine Cortez	Masto	Senior Senator	UNITED STATES SENATE	333 Las Vegas Boulevard South	Suite 8016	Las Vegas	NV	89101
The Honorable Jacky	Rosen	Junior Senator	UNITED STATES SENATE	333 Las Vegas Boulevard South	Suite 8203	Las Vegas	NV	89101
The Honorable Catherine Cortez	Masto	Senior Senator	UNITED STATES SENATE	516 Hart Senate Office Building		Washington	DC	20510
The Honorable Jacky	Rosen	Junior Senator	UNITED STATES SENATE	144 Russell Senate Office Building		Washington	DC	20510
			US Army Corps of Engineers	St. George Regulatory Office	321 N Mall Drive, Suite L-101	St. George	UT	84790
			Western Resource Advocates	204 North Minnesota Street	Suite A	Carson City	NV	89703
			Friends of Nevada Wilderness	8180 Placid St.		Las Vegas	NV	89123
Glenn	Shaw	Nevada Director	Old Spanish Trail Association	P.O.Box 68		Blue Diamond	NV	89004

Lynn	Brittner	Executive Director	Old Spanish Trail Association	Email: ostamgr@gmail.com				
Vicki	Felmlee	President	Old Spanish Trail Association	178 Glory View Drive		Grand Junction	CO	81503

Newspaper Notices

AFFIDAVIT OF PUBLICATION

STATE OF NEVADA)
COUNTY OF CLARK) SS:

LOGAN SIMPSON
STE 450
51 W 3RD ST
TEMPE AZ 85281

Account # 184549
Ad Number 0001103688

Leslie McCormick, 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 2 edition(s) of said newspaper issued from 05/11/2020 to 05/18/2020, on the following days:

05 / 11 / 20
05 / 18 / 20

BY _____
LEGAL ADVERTISEMENT REPRESENTATIVE

Subscribed and sworn to before me on this 18th day of May, 2020

Notary _____

LINDA ESPINOZA
Notary Public, State of Nevada
Appointment No. 00-64106-1
My Appt. Expires Jul 17, 2020

Public Meeting Announcement

The U.S. Bureau of Indian Affairs (BIA) and the Moapa Band of Paiute Indians invite you to attend a virtual scoping meeting to identify the range and scope of issues related to the proposed Southern Bighorn Solar Project. The issues identified during the scoping process will be considered and addressed during preparation of an Environmental Impact Statement (EIS).

Please plan to attend one of the following virtual meetings:

Wednesday, May 27, 2020:
1:30 – 3:00 p.m. PDT

Thursday, May 28, 2020:
5:30 – 7:00 p.m. PDT

To join the meeting online:
access on the website at https://southernbighornsolar.com

To join the meeting by phone:
call (415) 762-9988 or (646) 568-7788.

May 27, use Meeting Identification Number
927 5793 2205

May 28, use Meeting Identification Number
931 2831 5648

Both virtual meetings will include a live streaming presentation. BIA and project proponent staff will be available to answer questions.

The presentation will be recorded and available to view online after the meetings.

The proposed Southern Bighorn Solar Project is a photovoltaic solar energy project located on the Moapa River Indian Reservation in Clark County, approximately 30 miles northeast of Las Vegas. The project would have a capacity of up to 400 megawatts. The project would also include collector lines and access roads that would cross Tribal lands, Tribal lands managed by the Bureau of Land Management (BLM), and BLM lands. Additional information is available on the project website listed above.

For more information on how to participate, contact Mr. Chip Lewis, Regional Environmental Protection Officer, at Chip.Lewis@bia.gov or 602.379.6750.

PUB: May 11, 18, 2020
LV Review-Journal

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THE PROGRESS
An independent, locally-owned newspaper serving the communities of northeast Clark County

LAURA ROBISON
PO BOX 430
Overton, NV 89040
Office: (702) 397-6246
Fax: (702) 397-6247
progress2@mvdsl.com

AFFIDAVIT OF PUBLICATION

State of Nevada, Clark County

I, Laura R. Robison, Office Manager of The Progress, a weekly newspaper published in Moapa Valley, Clark County, Nevada, being duly sworn hereby certify that the following advertisement appeared in The Progress:

Public Meeting Announcement
For Southern Bighorn Solar Project
on behalf of Logan Simpson

A copy of the above described advertising is hereon attached.
It was published in The Progress on this date(s):

May 13, 2020 and May 20, 2020

Signed before a Notary Public:

Signature: Laura R Robison Date: 6-10-2020

State of Nevada, County of Clark
This instrument was acknowledged before me Alisha A. Cooper (notary public)
On 10 June 2020 (date) by Laura R. Robison (person signing document)

Alisha A. Cooper
Notary Public Signature

ALISHA A. COOPER
NOTARY PUBLIC
STATE OF NEVADA
My Commission Expires: 07-10-23
Certificate No: 03-83419-1

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City Council

from page 1A

neys which had been retained by the City on this matter, called this into question before the Council.

"This idea that Mr. Sweetin is not an employee is a specious one," Barr said. "The ordinance talks in terms of either an employee or of the city. And the city charter is very clear that the city attorney is ."

Ramaker also insisted that, despite the contract arrangement regarding Sweetin, the City was treating him as a de-facto employee.

"My understanding is that someone who receives payment, who receives PERS, who receives medical from the City would be classed as an employee," Ramaker said. "To me, Mr. Sweetin, even though he's got a contract through somebody else, he is still an employee."

But Wursten raised the point that the question of Sweetin's employment status was not really the main issue before the Council. He cited Nevada Revised Statute 613.040 which prohibits an employer from barring an employee from becoming a can-

"Here is the problem, our Municipal Code does that," Wursten said. "So we are going against state law right there, which we cannot do."

In addition, Wursten appealed to Nevada Revised Statute 281A.520 which makes it unlawful for public to cause a government entity to incur expenses of public funds to oppose a candidate.

Wursten pointed out that Mayor Litman a position at the City Rec Center as a SPIN instructor. As such, he may be in the same position with respect to the Municipal Code as Sweetin, he said.

"So here is a situation where we are opposing one person but not the other who very well could fall under this as well," Wursten said. "So we have to do all or none. Otherwise we could be in violation and actually be ethically liable as a Council."

Barr cautioned that the mayor's status and eligibility for candidacy was not on the agenda for that night's meeting. But if the council saw a potential violation from the mayor, it could certainly put it on a future agenda and have a similar letter drafted to notify him of possible violations as well, he said.

Wondering what the objective of this item was, Wursten doubted that it could just be to spend $10,000 for legal counsel to draft the letter to Sweetin. "I mean, look, we are doing this to Bob, writing a letter," Wursten said. "Then next we are doing it to the mayor, writing a letter. Then we are going to turn around and have lawsuits on both sides of it. If neither candidate is eligible will we hold a special election? I'd just like to know the endgame, here. What are we really trying to accomplish with this?"

"It's clear," Councilman Rapson interjected. "We are trying to get rid of one of the candidates. And I don't want to be any part of targeting a candidate."

Councilwoman Annie Black questioned how Sweetin, as a candidate for mayor, could continue providing unbiased legal services to the city. "I've had a hard time wrapping my mind around this," Black said. "How is the mayor's legal council going to be his political adversary without that being some sort of of interest? This is a clear and glaringly obvious of interest and (Sweetin) needs to resign his position. That is pretty cut and dried."

But Sweetin's attorney Daniel Stewart, who attended the meeting via a phone connection, argued that the item before the board should not be Sweetin's - tions as an employee but rather his - cation as a political candidate.

"If Bob Sweetin is a bad employee, if he gives legal advice, if he violates his duties to the mayor, then he can suffer the consequences as an employee," Stewart said. "But what is being asked tonight is for him to suffer consequences as a candidate."

Councilman George Gault asked for a - nal "So it is our city code that is the problem here?" he asked Sweetin.

"That is correct," Sweetin replied. "It is the city code that governs all of this and that's the only place this problem exists."

"And that is superseded by the Nevada Revised Statute?" Gault asked.

"That is correct," Sweetin said.

"So is this whole thing moot?" Gault asked. "We really have no jurisdiction over either case until we change our ordinance to comply with the statute."

"I would agree with that," Sweetin said. "The council dais is not the place for this conversation. There's a number of ways to challenge a candidate's eligibility for of- Taxpayer dollars and the council dais is not one of them."

Wursten made the motion that the City Council NOT engage outside legal council to put Sweetin on notice of a potential violation of city code. Rapson seconded and asked that the motion include that a change to the Municipal Code be drafted to resolve

Wursten, Rapson and Gault voted in favor of the motion. Ramaker and Black were opposed.

Address	Bd	Bath	Sqft	List Price	Acres	Year	Zip Code
430 Ingram Ave.	2	1	720	55,000	0	SOLD	9040
285 Perkins	2	2	1128	65,000	0	SOLD	9040
389 Park Blvd.	3	2	840	75,000	0	SOLD	9001
484 Michael Way	NEW LISTING		944	82,000	0.26	1996	89001
1983 S Moapa Valley Blvd	3	2	1440	95,000	4.01	2002	89040
4185 Skyline St	2	2	840	150,000	2.07	1971	89021
1440 Scott Ave	3	2	924	150,000	1.28	1995	89040
5113 Dry Farm Rd	3	2	1664	159,000	5.03	1983	89017
741 Cottonwood St	3	2	1742	160,000	1	SOLD	9001
416 McDonald	PENDING		2152	175,000	0.18	1990	89040
1340 Jensen Ave	5	3	2576	179,000	0.39	1985	89021
1344 Jensen Ave	5	3	2576	179,000	0.5	1985	89021
1575 Isola Dr	4	2	1342	224,500	1	SOLD	9025
2985 Doty St.	4	2	2040	225,000	0.29	1986	89021
3975 Mateuse St	PENDING		1458	238,000	2.12	1999	89021
1420 Tami St	4	2	1716	255,000	2	SOLD	9040
1200 W. Cottonwood	3	2	1344	259,000	10	1985	89040
479 Corta Ave	4	2	2015	289,000	0	SOLD	9040
1240 W Cottonwood Ave.	3	1	1152	289,000	8.69	2001	89040
2433 Robison Farm Rd	4	3	1995	365,500	0.78	1995	89021
3630 Sandy St.	4	3	3277	395,000	0	SOLD	9021
8216 Fawn Brook Ct	REDUCED!		3165	465,000	0.16	1998	89149
3757 River Heights Ln	4	4	4068	499,900	0.6	2008	89021
995 Higbee Ranch Ln.	NEW LISTING		4774	575,000	3.1	2011	89001
2175 Mateuse St.	3	3	2527	599,900	4	SOLD	9021

Address	List Price	Acres	Zip
Mormon Mesa 1	SOLD		89040
Mormon Mesa 1	SOLD		89040
Virgin River 2	SOLD		89040
Mormon Mesa 4	SOLD		89040
Off Oliver St	8,000	0.1	89040
Mormon Mesa	9,000	.6	89040
Virgin River 10	SOLD		89040
Virgin River	10,000	10.0	89040
Bryner Ave	19,000	0.88	89040
Virgin River	20,000	20.0	89040
E Gadianton Av 39	SOLD		89025
Wittwer Ave	40,000	1.10	89021
280 Pat Ave.	45,000	2.0	89040
1340 Jensen Av	45,000	0.48	89021
Off Jensen Av	45,000	0.88	89021
Navajo Av	47,000	0.71	89021
N. Moapa Valley Bl	47,500	0.97	89021
Liston Ave. & Ash St.	47,500	2.05	89021
W Turvey Ave	47,500	1.93	89025
Frehner&Yamashita	50,000	1.91	89021
N Yamashita St	50,000	1.91	89021
Skyline St	50,000	1.00	89021
1910 Pinwheel St	58,000	0.51	89021
Mormon Mesa	59,000	80.0	89040
Cram & Yamashita	60,000	1.91	89021

Address	List Price	Acres	Zip
Gubler Ave	60,000 NEW LISTING		89021
Lou St	68,500	2.07	89021
St. Joseph St.	75,000 REDUCED!		89021
1352 Red Sage Ln	75,000	0.59	89021
West Jensen Ave	80,000	1.78	89040
Off Wells Ave	85,000 PENDING		89021
Skyline St	89,950 REDUCED!		89021
Napal Vista Cir	90,000	2.06	89021
Liston Ave	95,000	2.00	89021
S Moapa Valley Bl	95,000 SOLD		89040
Moapa Valley Bl	95,000	2.69	89040
Paul Ave & Tami St	99,000	2.06	89021
Skyline St	100,000	4.68	89021
Curohee St/Damon	120,000	9.29	89025
N Curohee St	120,000	9	89025
Damon Ave/Hiko St	120,000	9.43	89025
Hiko St	120,000	9.13	89025
Willow Ave	150,000	10	89040
Willow Ave & Deer	150,000	10	89040
Diane Ave	150,000	10	89040
Diane Ave & Deer	150,000	10	89040
289 S. MV Blvd	175,000	0.47	89040
Moapa Valley Blvd	89,000	13.71	89040
Cooper St	285,000	7.26	89040
123 S Moapa Valley	290,000	0.37	89040

Public Meeting Announcement

The U.S. Bureau of Indian Affairs (BIA) and the Moapa Band of Paiute Indians invite you to attend a virtual scoping meeting to identify the range and scope of issues related to the proposed Southern Bighorn Solar Project. The issues identified during the scoping process will be considered and addressed during preparation of an Environmental Impact Statement (EIS).

Please plan to attend one of the following virtual meetings:

Wednesday, May 27, 2020: 1:30 – 3:00 p.m. PDT

Thursday, May 28, 2020: 5:30 – 7:00 p.m. PDT

To join the meeting online: access on the website at https://southernbighornsolar.com

To join the meeting by phone: call (415) 762-9988 or (646) 568-7788.

May 27, use Meeting Identification Number 927 5793 2205
May 28, use Meeting Identification Number 931 2831 5648

Both virtual meetings will include a live streaming presentation. BIA and project proponent staff will be available to answer questions. The presentation will be recorded and available to view online after the meetings.

The proposed Southern Bighorn Solar Project is a photovoltaic solar energy project located on the Moapa River Indian Reservation in Clark County, approximately 30 miles northeast of Las Vegas. The project would have a capacity of up to 400 megawatts. The project would also include collector lines and access roads that would cross Tribal lands, Tribal lands managed by the Bureau of Land Management (BLM), and BLM lands. Additional information is available on the project website listed above.

For more information on how to participate, contact *Mr. Chip Lewis, Regional Environmental Protection Officer, at Chip.Lewis@bia.gov or 602.379.6750.*

Graduating seniors receive award from Aravada Springs

By IAIN MCMURRAY

Moapa Valley Progress

Trey Houston

Ryan McMurray

Two high school seniors have been honored by Aravada Springs Ranch for their achievements through many years of active participation in both 4-H and FFA.

Moapa Valley High School's Ryan McMurray and Virgin Valley High School's Trey Houston were each presented with the Senior Showman Aravada Springs Belt Buckle 2020, a custom made buckle developed and sponsored by Aravada Springs. The buckles were presented by Aravada Springs representative Denise Houston in recognition of the boys' many years of community service, leadership, and participation in both organizations. The black and gold buckle proudly displays both the 4-H and the FFA insignias.

Houston explained that the two recipients of the award were chosen based on many different determining factors including dedication to 4-H and FFA, time spent in leadership positions, valuable skills gained from 4-H and FFA, community service, and how well they represent those organizations in the world of today.

All qualifying seniors were invited to submit a detailed resume describing their experiences in 4-H and FFA, including competitions they took part in, how long they have been a part of 4-H and FFA, and service opportunities that they have had in their many years in the organizations. Houston and McMurray were selected from the resumes submitted.

The award was originally intended to be presented as part of the Clark County Junior Livestock Association Awards during the Clark County Fair. Houston explained that it's purpose is to honor seniors who have been active in both 4-H and FFA and have stuck with it through the years and used what they'd learned to help others.

"Both of these young men entail what 4-H and FFA represent in our world today," Houston said. "Aravada Springs was proud to present them with the award. Although the Clark County Fair and the CCJLA show were both cancelled this year we proudly presented them with a belt buckle created just for them."

McMurray is a member of Moapa Valley FFA and the Kidz-n-Ewe 4-H club and has been showing animals at the CCJLA for the past 10 years. He began his show career at the age of 5, participating in 4-H Cloverbuds. He then advanced to showing lambs, goats, and eventually steers. Ryan said this involvement has taught him hard work, dedication and reward.

Ryan has served in numerous leadership positions in both organizations including 4-H club president, 4-H teen leader, and 4-H camp counselor, FFA Southern Zone Vice-President, FFA Southern Zone Treasurer, FFA reporter, and is currently serving as the Moapa Valley FFA Chapter President. He has donated countless hours in community service, participated in Livestock Judging at state and national levels. He holds many awards including: FFA State degree, State Soils Judging High Individual, National Livestock Judging Silver Medalist, and FFA Chapter and Greenhand degrees.

Trey Houston is a member of Virgin Valley FFA and the Cowboys-n-Angels 4-H club. He has also been active in both programs for many years, participating yearly in the CCJLA show showing lambs, goats, and steers over the past 9 years.

He has been very active in both his club and his FFA chapter, attending and participating in FFA zone events, competing at FFA state in Veterinary Medicine, attending FFA nationals, and serving as the Virgin Valley FFA Chapter Sentinel.

Trey has been active in 4-H as well, serving in many leadership positions including 4-H president, 4-H Youth Ambassador, 4-H camp counselor. He is a 4-H Youth Instructor for Archery.

Trey has participated and placed in Livestock Judging, Skill a Thon and Quiz Bowl Competitions. He has donated hours of service to his community.

Trey said his favorite service project was going Christmas caroling to shut-ins and taking them gifts.

"FFA and 4-H have been a big part of my life," Trey said. "I'm thankful to be recognized for all my hard work in both programs. Thanks to Aravada Springs, I will wear my buckle proudly."

Aravada Springs is a camping and adventure facility located in Bunkerville. More information on Aravada Springs can be found at aravada.com.

Public Meeting Announcement

The U.S. Bureau of Indian Affairs (BIA) and the Moapa Band of Paiute Indians invite you to attend a virtual scoping meeting to identify the range and scope of issues related to the proposed Southern Bighorn Solar Project. The issues identified during the scoping process will be considered and addressed during preparation of an Environmental Impact Statement (EIS).

Please plan to attend one of the following virtual meetings:

Wednesday, May 27, 2020: 1:30 – 3:00 p.m. PDT

Thursday, May 28, 2020: 5:30 – 7:00 p.m. PDT

To join the meeting online: access on the website at https://southernbighornsolar.com

To join the meeting by phone: call (415) 762-9988 or (646) 568-7788.

May 27, use Meeting Identification Number 927 5793 2205
May 28, use Meeting Identification Number 931 2831 5648

Both virtual meetings will include a live streaming presentation. BIA and project proponent staff will be available to answer questions. The presentation will be recorded and available to view online after the meetings.

The proposed Southern Bighorn Solar Project is a photovoltaic solar energy project located on the Moapa River Indian Reservation in Clark County, approximately 30 miles northeast of Las Vegas. The project would have a capacity of up to 400 megawatts. The project would also include collector lines and access roads that would cross Tribal lands, Tribal lands managed by the Bureau of Land Management (BLM), and BLM lands. Additional information is available on the project website listed above.

For more information on how to participate, contact *Mr. Chip Lewis, Regional Environmental Protection Officer, at Chip.Lewis@bia.gov or 602.379.6750.*

Material for Moapa Band of Paiute Indians
Monthly Newsletter

Public Meeting Announcement

The U.S. Bureau of Indian Affairs (BIA) and the Moapa Band of Paiute Indians invite you to attend a virtual scoping meeting to identify the range and scope of issues related to the proposed Southern Bighorn Solar Project. The issues identified during the scoping process will be considered and addressed during preparation of an Environmental Impact Statement (EIS).

Please plan to attend one of the following virtual meetings:

Wednesday, May 27, 2020: 1:30 – 3:00 p.m. PDT

Thursday, May 28, 2020: 5:30 – 7:00 p.m. PDT

To join the meeting online: access on the website at https://southernbighornsolar.com

To join the meeting by phone: call (415) 762-9988 or (646) 568-7788

- **Wednesday May 27** between 1:30 to 3:00 p.m. PDT
  Meeting Identification Number* 927 5793 2205
- **Thursday. May 28** between 5:30 to 7:00 p.m. PDT
  Meeting Identification Number* 931 2831 5648

Both virtual meetings will include a live-streaming presentation. BIA and project proponent staff will be available to answer questions.
The presentation will be recorded and available to view online after the meetings. Meeting material can also be requested from the Moapa Business Council at council.asst@moapabandofpaiutes.org or 702.343.5882.

The proposed Southern Bighorn Solar Project is a photovoltaic solar energy project located on the Moapa River Indian Reservation in Clark County, approximately 30 miles northeast of Las Vegas. The project would have a capacity of up to 400 megawatts. The project would also include collector lines and access roads that would cross Tribal lands, Tribal lands managed by the Bureau of Land Management (BLM), and BLM lands. Additional information is available on the project website listed above.

For more information on how to participate, contact *Mr. Chip Lewis, Regional Environmental Protection Officer*, at *Chip.Lewis@bia.gov* or *602.379.6750.*

Scoping Report Appendix C

Meeting Materials

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Appendix C – Meeting Materials

Appendix C contains materials that were made available on the project website (www.southerbighornsolar.com) throughout the scoping period, as well as the presentation that was given at both virtual meetings:

- Scoping Letter with Maps
- Meeting Handout
- Meeting Presentation
- Comment Form

The following members of the public attended the virtual scoping meetings:

- Wednesday, May 27th (1:30-3:00 P.M. PDT)
    - Bella Bakrania
    - Nick Yamashita (Moapa Valley Progress)
    - Barb Neary (Geosyntec)
- Thursday, May 28th (5:30 – 7:00 P.M. PDT)
    - Nick Yamashita (Moapa Valley Progress)

Scoping Letter

United States Department of the Interior
BUREAU OF INDIAN AFFAIRS
Western Region
2600 N. Central Avenue, Fourth Floor Mailroom
Phoenix, AZ 85004-3050

DEPARTMENT OF THE INTERIOR

Bureau of Indian Affairs

Notice of Intent to Prepare an Environmental Impact Statement for the Proposed Southern Bighorn Solar Project on the Moapa River Indian Reservation, Clark County, NV

AGENCY: Bureau of Indian Affairs, Interior

ACTION: Notice

SUMMARY: The Bureau of Indian Affairs (BIA), as lead agency in cooperation with the Moapa Band of Paiute Indians (Moapa Band), the Bureau of Land Management (BLM), and other agencies, intend to prepare an Environmental Impact Statement (EIS) that will evaluate photovoltaic (PV) solar energy generation and battery storage projects on the Moapa River Indian Reservation (Reservation) and collector lines and access roads located on the Reservation, Reservation lands managed by BLM, and BLM land.

This notice announces the beginning of the scoping process to solicit public comments and identify potential issues related to the EIS. It also announces that two live-streaming events will be held where the project team will introduce the project and be available by internet and by phone to document and discuss potential issues, alternatives, and mitigation to be considered in the EIS.

DATES: Written comments on the scope of the EIS or implementation of the proposal must arrive by June 8, 2020. The virtual public scoping meetings will be held on Wednesday May 27 at 1:30 to 3:00 p.m. and Thursday May 28 at 5:30 to 7:00 p.m. Pacific Daylight Time (PDT). Instructions will be published in the *Las Vegas Review-Journal* and *Moapa Valley Progress* 15 days before the scoping meetings. See VIRTUAL PUBLIC SCOPING MEETINGS section below for instructions on joinging the meetings.

ADDRESSES: You may mail, email, or hand carry written comments to Mr. Chip Lewis, BIA Western Regional Office, 2600 North Central Avenue, 4th Floor Mailroom, Phoenix, Arizona 85004; telephone: (602) 379–6750; email: *Chip.Lewis@bia.gov*. Written comments may also be submitted on the project website at https://southernbighornsolar.com/.

SUPPLEMENTARY INFORMATION: The Moapa Band has requested that the BIA approve two solar energy ground leases and associated agreements between the Tribe as lessor and 300MS 8me LLC and 425LM 8me LLC, both subsidiaries of 8minute Solar Energy, as lessees to construct, operate and maintain, and eventually decommission two solar generating facilities using photovoltaic technology. The Project is located on the Reservation in Clark County, Nevada approximately 30 miles northeast of Las Vegas. The solar facilities would be located on up to 3,600 acres of tribal trust land and have a combined capacity of up to 400 megawatts (MW) alternating current: 300 MW for one project/phase; and 100 MWac for a second project/phase. Rights-of-way for collector lines and existing access roads would be located on the Reservation, on Reservation lands managed by BLM, and on BLM lands. The overhead collector lines would connect the solar projects to the substation(s) within the boundaries of the previously approved Eagle Shadow Mountain Solar Project. From there, the electricity generated would connect to the existing transmission lines and be delivered to the regional electrical grid at the NV Energy's Reid Gardner Substation.

Construction of the 300MWac project/phase is expected to take approximately 14-16 months, and construction of the 100MWac project/phase is expected to take approximately 8-10 months. The two projects/phases may be constructed simultaneously or sequentially. The electricity generation and battery storage facilities are expected to be operated for up to 40 years under the terms of the leases. Major onsite facilities include multiple blocks of solar PV panels mounted on fixed tilt or tracking systems, pad mounted inverters and transformers, collector lines, up to 1,000 MW-hours of battery storage, access roads, and O&M facilities. Water will be needed during construction for dust control and during operations for administrative and sanitary water use and for panel washing. The water supply would be leased from the Moapa Band.

The purpose of the proposed Project are, among other things, to: (1) provide a long-term, diverse, and viable economic revenue base and job opportunities for the Moapa Band; (2) assist Nevada and neighboring states to meet their State renewable energy needs; and (3) allow the Moapa Band, in partnership with the Applicant, to optimize the use of the lease site while maximizing the potential economic benefit to the Tribe.

BIA will prepare the EIS in cooperation with the Moapa Band, BLM, and the Environmental Protection Agency. In addition, the U.S. Fish and Wildlife Service (USFWS) and National Park Service will provide input on the analysis. The resulting EIS will aim to (1) provide agency decision makers, the Moapa Band, and the general public with a comprehensive understanding of the impacts of the proposed Project and alternatives on the Reservation; (2) describe the cumulative

impacts of increased development on the Reservation; and (3) identify and propose mitigation measures that would minimize or prevent significant adverse impacts. Consistent with these objectives, the EIS will analyze the proposed Project and appurtenant features, viable alternatives, and the No Action alternative. Other alternatives may be identified in response to issues raised during the scoping process.

The EIS will provide a framework for BIA and BLM to make determinations and to decide whether to take the aforementioned Federal actions. In addition, BIA will use and coordinate the National Environmental Policy Act (NEPA) commenting process to satisfy its obligations under Section 106 of the National Historic Preservation Act (16 U.S.C. §470f) as provided for in 36 C.F.R. § 800.2(d)(3). Native American tribal consultations will be conducted in accordance with policy, and tribal concerns will be given due consideration, including impacts on Indian trust assets. Other federal agencies may rely on the EIS to make decisions under their authority and the Moapa Band may also use the EIS to make decisions under their Tribal Environmental Policy Ordinance. USFWS will review the EIS for consistency with the Endangered Species Act (50 C.F.R. Part 17), as amended, and other implementing acts, and may rely on the EIS to support its decisions and opinions regarding the Project.

Issues to be addressed in the EIS analysis may include, but would not be limited to, Project impacts on water resources, biological resources, threatened and endangered species, cultural resources, Native American religious concerns, and aesthetics. In addition to those resource topics identified above, Federal, State, and local agencies, along with other stakeholders that may be interested or affected by the BIA's decision on the proposed Project, are invited to participate in the scoping process to identify additional issues to be addressed.

SUBMISSION OF PUBLIC COMMENTS: Written comments on the scope of the EIS or implementation of the proposal must arrive by June 8, 2020 and may be submitted to the address listed above in the ADDRESSES section. Please include your name, return address, and the caption ''EIS, Southern Bighorn Solar Project,'' on the first page of any comments.

Public scoping meetings will be held to further describe the Project and identify potential issues and alternatives to be considered in the EIS. To help protect the public and limit the spread of the COVID-19 virus, virtual public meetings will be held, where a short presentation will be made and team members will be present to discuss and answer questions. The PowerPoint presentation will be posted to the project website prior to the virtual meetings. Those who cannot live stream the presentation would be able to access the meeting presentation and could join by telephone. Additionally, the live presentation will be recorded and made accessible for viewing throughout the scoping period. For those with limited or no internet access, a request for printed scoping meeting materials may be submitted to the addresses listed above and materials will be sent in the mail.

VIRTUAL PUBLIC SCOPING MEETINGS: Virtual public scoping meetings will be held on Wednesday May 27 at 1:30 to 3:00 p.m. and Thursday May 28 at 5:30 to 7:00 p.m. PDT. The public meetings can be joined online or over the phone.

To join the meeting online: access on the website at https://southernbighornsolar.com/public-scoping-meetings/

To join the meeting by phone: call (415) 762-9988 or (646) 568-7788.

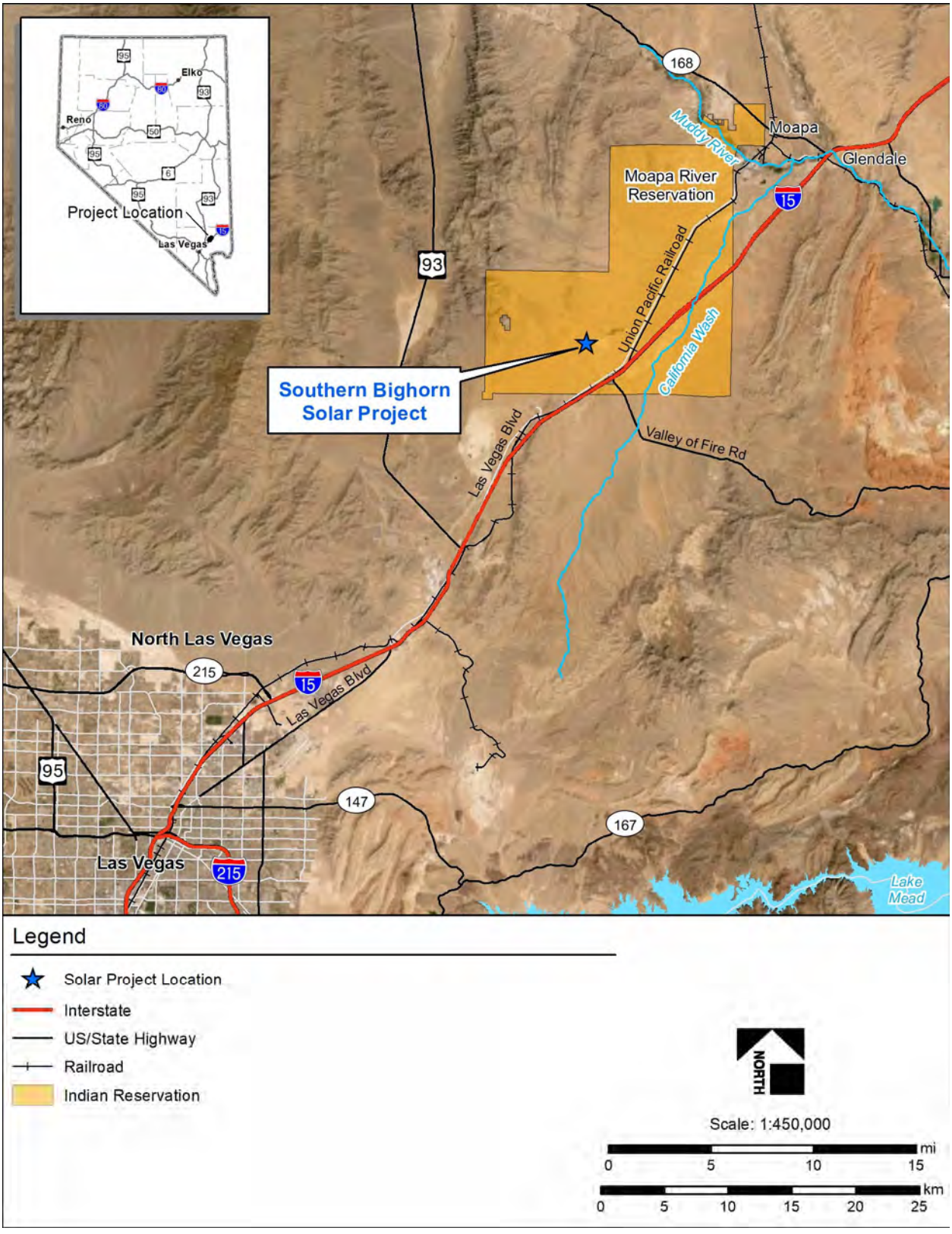
- For Wednesday May 27, use Meeting Identification Number 927 5793 2205
- For Thursday. May 28, use Meeting Identification Number 931 2831 5648

PUBLIC COMMENT AVAILABILITY: Comments, including names and addresses of respondents, will be available for public review at the mailing address shown in the ADDRESSES section during regular business hours, 8 a.m. to 4:30 p.m., Monday through Friday, except holidays. Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time.

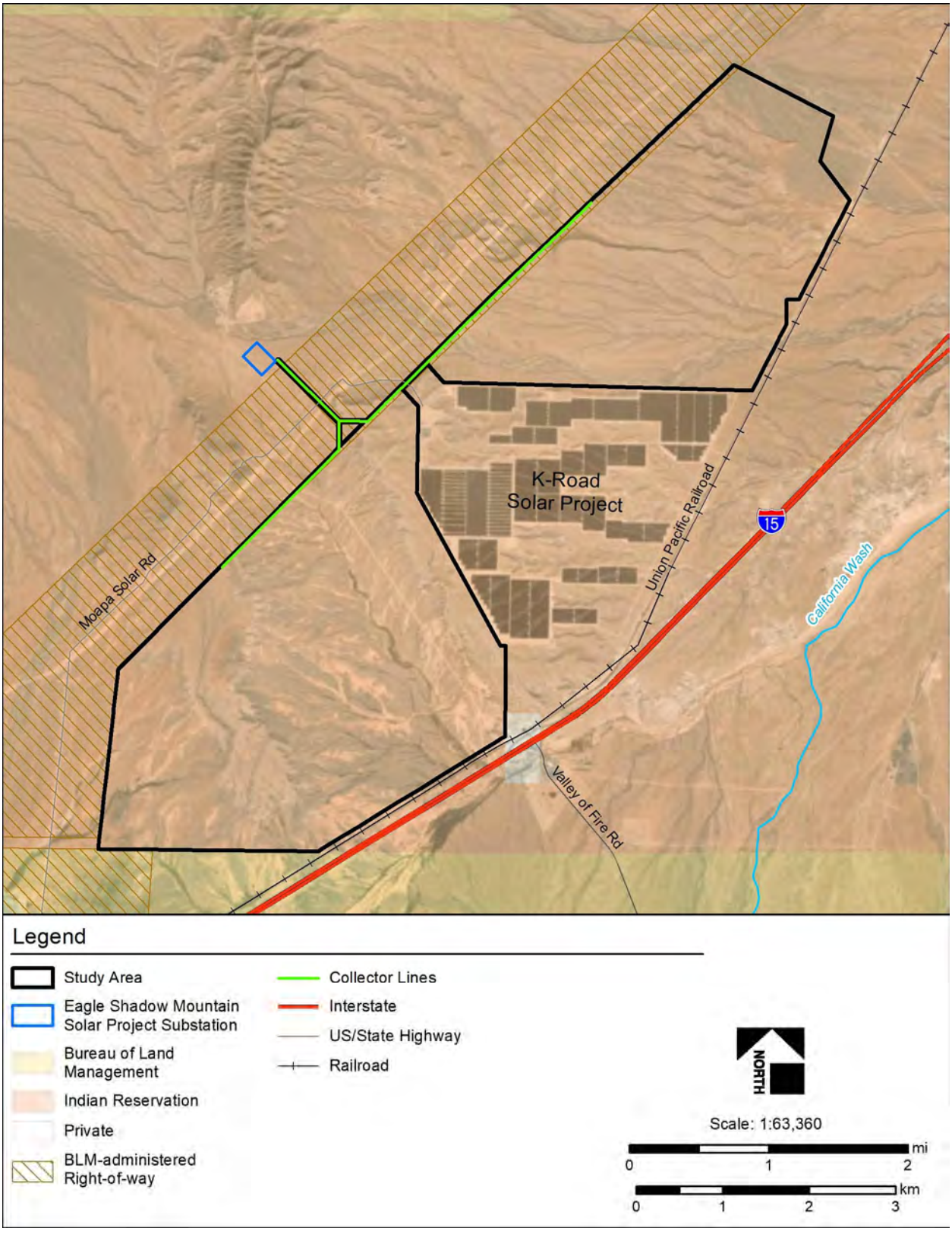
AUTHORITY: This notice is published in accordance with 40 CFR 1501.7 of the Council of Environmental Quality regulations and 43 CFR 46.235 of the Department of the Interior Regulations implementing the procedural requirements of the NEPA (42 U.S.C. 4321 et seq.), and in accordance with the exercise of authority delegated to the Principal Deputy Assistant Secretary-Indian Affairs by part 209 of the Department Manual.

Date: 5/11/2020

Mr. Bryan Bowker
Director, Western Region
Bureau of Indian Affairs



Project Location Map



Project Study Area

Meeting Handout

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VIRTUAL PUBLIC SCOPING MEETING

Southern Bighorn Solar Project Environmental Impact Statement

May 27 and May 28, 2020

Project Summary

The Bureau of Indian Affairs (BIA), as lead agency in cooperation with the Moapa Band of Paiute Indians (Moapa Band), the Bureau of Land Management (BLM), and other agencies, intend to prepare an Environmental Impact Statement (EIS) that will evaluate photovoltaic (PV) solar energy generation and battery storage projects on the Moapa River Indian Reservation (Reservation) and collector lines and access roads located on the Reservation, Reservation lands managed by the BLM, and BLM lands.

The proposed federal action is the BIA's approval of two solar energy ground leases and associated agreements entered into by the Moapa Band with 300MS 8me LLC and 425LM 8me LLC (Applicants), both subsidiaries of 8minute Solar Energy, for the construction, operation and maintenance, and eventual decommissioning of the PV solar energy generation and battery storage facilities. The generation and battery storage facilities would be located on up to 3,600 acres of tribal trust land and have a combined capacity of up to 400 megawatts (MW) alternating current: 300 MW for one project/phase and 100 MW for a second project/phase. The facilities are expected to be operated for up to 40 years under the terms of the leases.

Major onsite facilities include: multiple arrays of solar PV panels mounted on fixed tilt or tracking systems, pad mounted inverters and transformers, collector lines, up to 1,000 MW-hours of battery storage, access roads, and operations and maintenance facilities. Water would be used during construction and operations for administrative and sanitary water use and panel washing. The water supply required would be leased from the Moapa Band.

Project Purposes

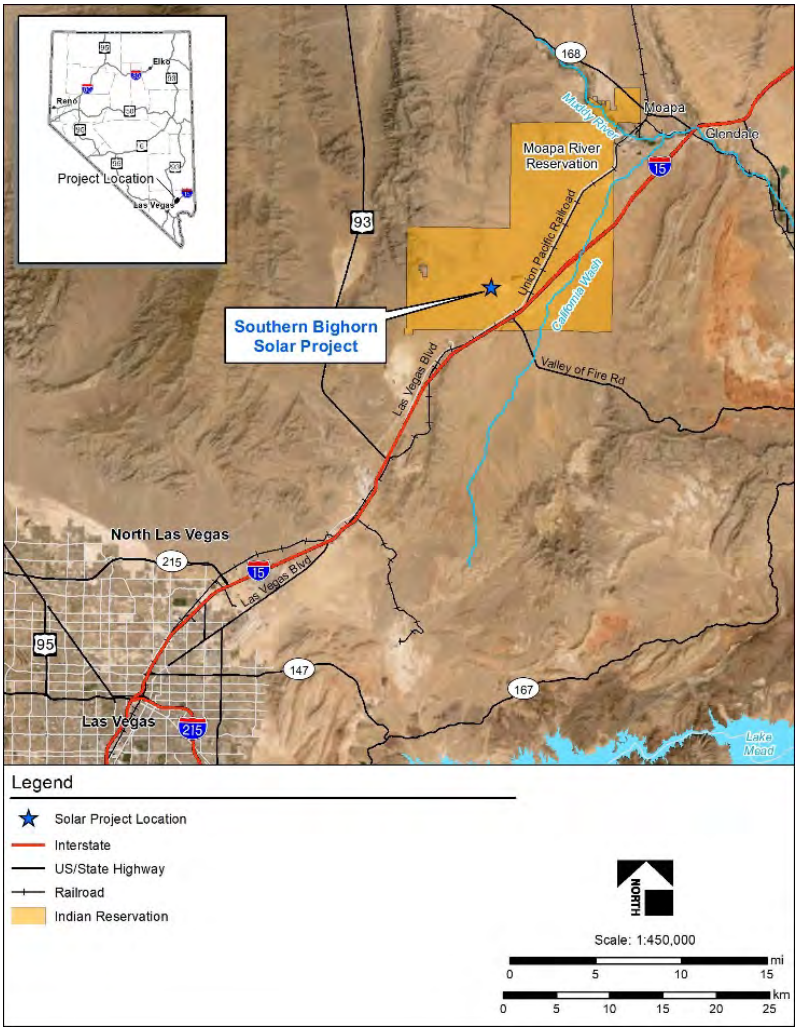
- Provide a long-term, diverse, and viable economic revenue base and job opportunities for the Moapa Band
- Assist Nevada and neighboring states to meet their State renewable energy needs
- Allow the Moapa Band, in partnership with the Applicants, to optimize the use of the lease site while maximizing the potential economic benefit to the Moapa Band

Join the Virtual Public Scoping Meetings

Dates: Wednesday May 27 at 1:30 to 3:00 p.m. PDT
Thursday May 28 at 5:30 to 7:00 p.m. PDT

Join Online:
https://southernbighornsolar.com/public-scoping-meetings/

Join by Phone: Call in at at (415) 762-9988 or (646) 568-7788
For May 27, use Meeting ID 927 5793 2205
For May 28, use Meeting ID 931 2831 5648



Project website: https://southernbighornsolar.com/

VIRTUAL PUBLIC SCOPING MEETING

Southern Bighorn Solar Project Environmental Impact Statement

Decisions to be Made

As part of the NEPA process, the BIA will evaluate the Proposed Action and alternatives to the Proposed Action. The EIS will provide the information and environmental analysis necessary to inform the BIA's authorized officer and the public about the potential environmental consequences of the Project. The BIA's Record of Decision (ROD) will either:

- Approve the Proposed Action and grant the lease and rights-of-way (ROW),
- Approve the Proposed Action with modification and grant the lease and ROW, or
- Deny the lease and ROW application.

Federal, state, and local permits and approvals would be required prior to construction and operation of the Project.

Send Comments to:

Mail:
Mr. Chip Lewis
Regional Environmental Protection Officer
BIA Western Regional Office
2600 North Central Avenue
4th Floor Mailroom
Phoenix, Arizona 85004

Email:
Chip Lewis at chip.lewis@bia.gov

Website:
https://southernbighornsolar.com/

Project Schedule

Tasks	Target Dates
Notice of Intent Published	May 2020
Public Scoping	May/June 2020
Draft EIS	October 2020
45-day Public Comment	October/November 2020
Final EIS	December2020/January 2021
30-Day Waiting Period	February 2021
BIA and BLM Sign Decision	March 2021
Lease and ROW Approval	June 2021

Scoping Input Needed

We are seeking your input and comments regarding the proposed Southern Bighorn Solar Project through a public scoping period ending on **June 8, 2020**. Written comments will be accepted during this scoping period.

Written comments can be provided via mail, email, recorded through the virtual public meetings, or submitted on the project website at: https://southernbighornsolar.com/. Please include your name, return address and the caption "Scoping Comments, Southern Bighorn Solar Project," on the first page of your written comments.

Comments should be made as specific as possible and provide information on potential issues or concerns that the EIS should address. The information you provide may help develop/inform alternatives that will address issues identified for this action. Alternatives, along with analyses and effects, will be documented in the EIS. Comments that are not specific to the Proposed Action and Project Area will be deemed outside the scope of the analysis and will not be considered.

Project website: https://southernbighornsolar.com/

Meeting Presentation

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Southern Bighorn Solar Projects Environmental Impact Statement

Public Scoping Meetings

May 27 and May 28, 2020

Housekeeping Items

- **Please mute your computer and telephone**
- **If you can see this but cannot hear us, please call in at (415) 762-9988** or **(646) 568-7788**
  - **Wednesday Meeting ID: 927-5793-2205#**
  - **Thursday Meeting ID: 931-2831-5648#**
- **Comments and questions will be addressed at the end of the presentation**
- **Please use the chat box and raise your hand features**

Moapa Band of Paiutes Tribal Council

Laura Parry – Chairwoman

Gregory Anderson Sr. – Vice Chairman

Ashly Osborne – Council Secretary

Kami Miller – Council Member

Shane Tom – Council Member

Randall Simmons – Council Member

Southern Bighorn Projects

Who

- Moapa Band of Paiute Indians
- 300MS 8me LLC and 425LM 8me LLC, both subsidiaries of 8minute Solar Energy

What

- BIA's approval of two solar energy ground leases and associated agreements
- Bureau of Land Management's (BLM) approval and issuance of ROWs for access roads and collector lines

Land Jurisdiction

- Moapa River Indian Reservation
- Reservation Land managed by BLM
- BLM Lands

Proposed Action

What is proposed

- Construction, operation and maintenance, and eventual decommissioning of solar photovoltaic electricity generation in two projects:
  - Project one – up to 300 MW
  - Project two – up to 100 MW
- On up to 3,600 acres within a 6,038-acre study area the Reservation
- Installation of Battery Energy Storage System
- Construction of access roads and collector lines to tie the facility into the regional electrical grid via a substation at the previously approved Eagle Shadow Mountain Solar Project

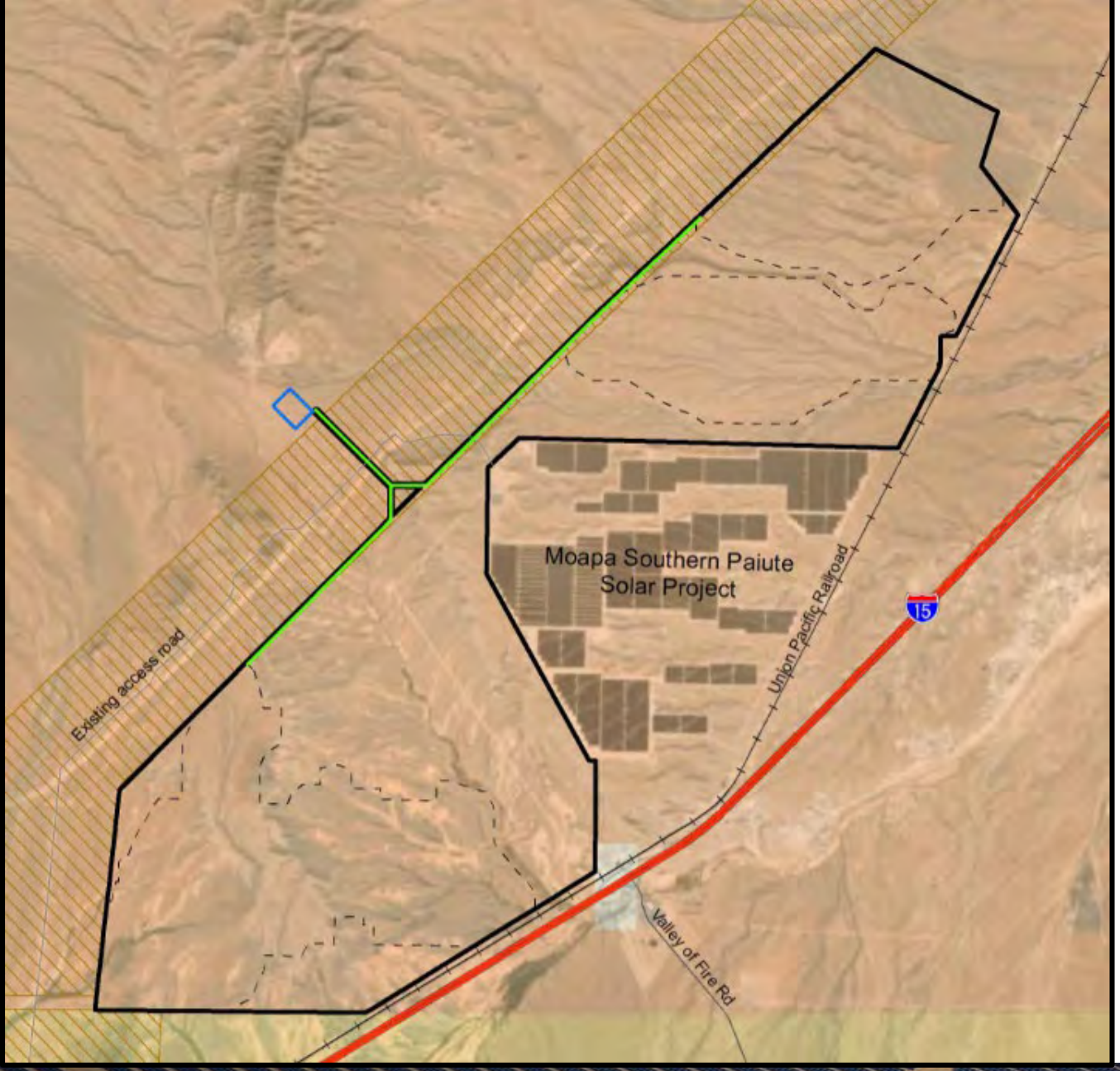
Project Location

Clark County, Nevada

Approximately 30 miles northeast of Las Vegas

Township, Range	Section(s)
T16S, R64E	12-14, 22-27, and 33-36
T16S, R65E	4-9, 16-18, 30, and 31
T17S, R64E	10-12

Project Area Map



Legend

- Study Area
- Lease Boundary
- Eagle Shadow Mountain Solar Project Substation
- Bureau of Land Management
- Indian Reservation
- Private
- BLM-administered Right-of-way
- Collector Lines
- Interstate
- US/State Highway
- Railroad

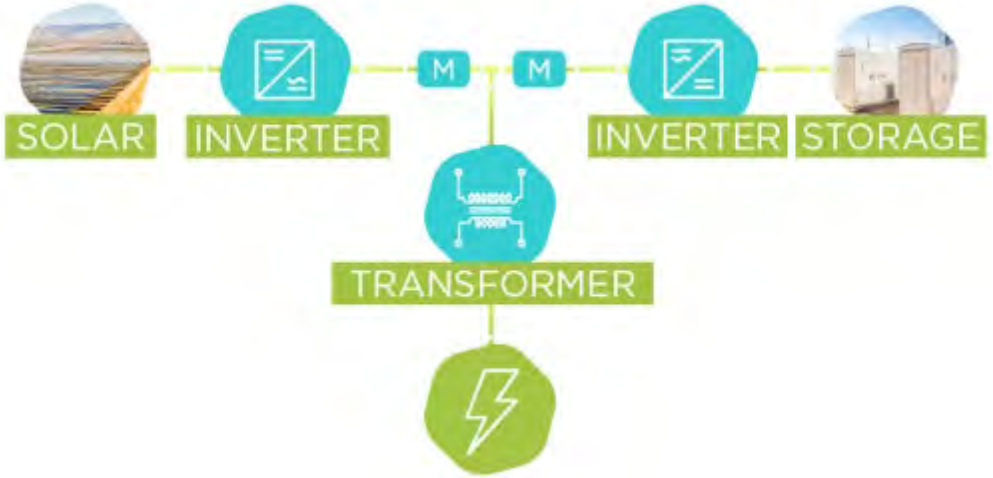
Project Purposes

- Provide a long-term and viable economic revenue base and job opportunities for the Moapa Band
- Assist Nevada to meet its renewable energy goals
- Allow the Moapa Band, in partnership with the Applicants, to optimize the use of the lease site while maximizing the potential economic benefit to the Moapa Band

PV Solar Field Components

- Solar panels mounted on fixed tilt or single axis tracking systems
- Inverters (converts DC to AC)
- Transformers (converts AC from one voltage to another)
- Battery Energy Storage System, up to 1,000 MWh
- Electrical collection lines
- Operation & Maintenance Building
- Fencing around the solar arrays

PV Solar Field Components



ROW and Leases to be Considered in EIS

- Ground leases
  - Moapa Band and 300MS 8me LLC and
  - Moapa Band and 425LM 8me LLC

(both subsidiaries of 8minute Solar Energy)

- Rights-of-way (ROW) for access roads and overhead collector lines on Reservation land and Reservation lands managed by BLM
- ROW for existing access road on BLM land

Environmental Impact Statement

- BIA to evaluate the Proposed Action and alternatives to meet the requirements of the National Environmental Policy Act (NEPA)
- EIS will provide environmental analysis to inform the BIA and public about potential environmental consequences of the Projects
- BIA Record of Decision will:
  - Approve the project,
  - Approve the project with modification, or
  - Deny the project

Involved Agencies

Lead Federal Agency

- U.S. Department of the Interior, Bureau of Indian Affairs

Cooperating Agencies

- Moapa Band of Paiute Indians
- Bureau of Land Management
- Environmental Protection Agency
- U.S. Fish and Wildlife Service

EIS Schedule

May 2020	• BIA Notice of Intent
May & June 2020	• Public Scoping (we are here in the process)
October 2020	• Draft EIS published for comment
October & November 2020	• 45-day comment period
December 2020 & January 2021	• Final EIS
February 2021	• 30 day waiting period
March 2021	• BIA signs Record of Decision
June 2021	• Lease and ROW Approval

Potential Resources to be Analyzed

- Biological Resources
  - Desert Tortoise
  - Threatened and endangered species
  - Avian Species
- Cultural Resources
- Native American Religious Concerns
- Visual Resources
- Water Resources
- Socioeconomics

Mojave desert tortoise
Source: Desert Tortoise Recovery Office, USFWS

How to Participate

- **Verbal comment:** submit at the end of this presentation
- **Written comments:** submit through the chat feature during the presentation
- **Project Website:** https://southernbighornsolar.com/
- **Email to:** chip.lewis@bia.gov
- **Mail to:** Mr. Chip Lewis, Regional Environmental Protection Officer
  BIA Western Regional Office
  2600 North Central Avenue
  4th Floor Mailroom
  Phoenix, Arizona 85004

Comments & Questions

Contact:

Chip Lewis
Regional Environmental Protection Officer
BIA Western Regional Office
2600 North Central Avenue
4th Floor Mailroom
Phoenix, Arizona 85004
chip.lewis@bia.gov

Website:

https://southernbighornsolar.com/

Meet the Project Team

Chip Lewis, BIA
Environmental Protection Officer

Garry Cantley, BIA
Regional Archaeologist

Jim Williams, BIA
Southern Paiute Agency Superintendent

Tamera Dawes, BIA
Realty Specialist

Christina Varela, BIA
Realty Specialist

Patricia McCabe
NEPA Documentation

LOGANSIMPSON

Mary Barger
BIA Assistance Cultural Resource

LOGANSIMPSON

Pat Golden
Biologist

HERITAGE ENVIRONMENTAL CONSULTANTS, LLC

AJ Thompson
Cultural Resources

KNIGHT LEAVITT ASSOCIATES
RESEARCH SERVICES

Luke Shillington
Vice President Land Entitlement

8MINUTE SOLAR ENERGY

Jason Moretz
Vice President Development

8MINUTE SOLAR ENERGY

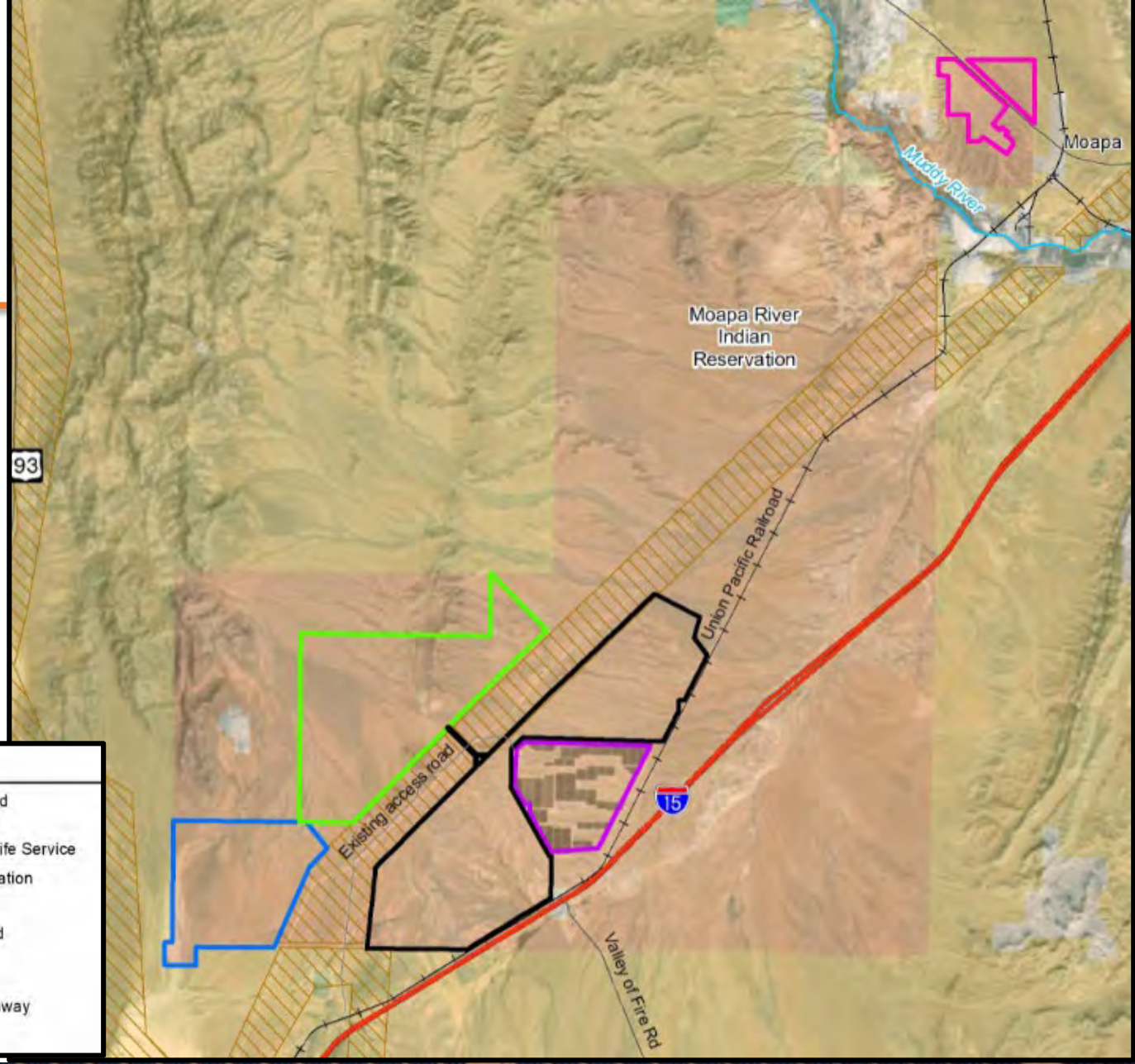
Thank you

Thank you for your time and participation today!

If you have joined late and missed the presentation we are still on live and available to address questions or take comments. Please use the *chat box* or *raise your hand* feature and we will unmute to discuss.

Additionally, a recording of this meeting will be posted on the project Website address below.

https://southernbighornsolar.com/


Moapa
Muddy River
Moapa River
Indian
Reservation
93
Union Pacific Railroad
Existing access road
15
Valley of Fire Rd
Legend
Southern Bighorn Solar Project Study Area
Alya Solar Project
Arrow Canyon Solar Project
Moapa Southern Paiute Solar Project
Eagle Shadow Mountain Solar Project
Bureau of Land Management
Fish and Wildlife Service
Indian Reservation
Private
BLM-managed Right-of-way
Interstate
US/State Highway
Railroad

Public Comment Form

PUBLIC COMMENT FORM

Bureau of Indian Affairs

SOUTHERN BIGHORN SOLAR PROJECT
ENVIRONMENTAL IMPACT STATEMENT
https://southernbighornsolar.com/
Scoping Comments

NAME: _____

ADDRESS: _____

_____

_____

( ) I have no comments, please keep me informed.

( ) Please remove me from your mailing list for this Project.

( ) I have the following comments about the Southern Bighorn Solar Project EIS:

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Return to: Mr. Chip Lewis, Regional Environmental Protection Officer, BIA Western Regional Office, 2600 North Central Avenue, 4th Floor Mailroom, Phoenix, AZ 85004 Email: chip.lewis@bia.gov

(Or fold, seal, and add a stamp to the back of the sheet)

……...……...

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place
stamp
here

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Mr. Chip Lewis
Regional Environmental Protection Officer
BIA Western Regional Office
2600 North Central Avenue
4th Floor Mailroom
Phoenix, AZ 85004

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Scoping Report Appendix D

Scoping Comments Received

Scoping Comment Matrix

Comment ID	Resource Category	Comment
NDOW-1	Vegetation	In view of solar energy development on Moapa River Paiute Reservation, the nearby proposed Gemini Solar Project site, other energy projects along the I-15 corridor and the potential for additional solar projects and infrastructure between Las Vegas and Mesquite, the SBSP does have potential for conserving contiguous, relatively undisturbed habitat at the landscape level. In this vein, we respectfully request as a regional conservation mitigation consideration in leaving as much ground surface and vegetation intact as possible, as similarly proposed for the Gemini Solar Project and discussed for the Eagle Shadow Solar Project.
NDOW-2	Threatened and Endangered Species	In the event moving desert tortoises out of harm's way becomes an impact minimization measure for portions of the SBSP on non-tribal lands, observance of Nevada Revised Statute 503.597 and Nevada Administrative Codes 503.093 and 503.0935 underscore need for acquiring NDOW authorization. Such authorization would not take the place of permits or authorizations required by other levels of government for conducting such activities.
NDOW-3	Wildlife	We will appreciate inclusion of measures for avoiding or minimizing impacts should the Gila monster be encountered (current protocols attached). Please contact NDOW reptile biologist Jason Jones by email at jljones@ndow.org for additional information regarding authorization requirements. Application and example information is also online at: http://www.ndow.org/Forms_and_Resources/Special_Permits/.
NDOW-4	Migratory Birds	And where appropriate, seasonal considerations for avoiding impacts to breeding migratory birds on non-tribal lands is anticipated.
Basin and Range Watch - 1	Vegetation Wildlife	The project has a power purchase agreement with NV Energy so obviously there is intent to build it. but a 3,600 acre project will impact 5 square miles of Mojave Desert Habitat. This is undeveloped habitat and a project of this have will have huge impacts and will result in a great loss of biological diversity. This project will kill a large quantity of living organisms. This is a net loss and mitigation will not make up for it. The amount of large scale solar built in the area should make you consider rejecting this proposal.
Basin and Range Watch - 2	Air Quality Public Health and Safety	Fugitive dust will result in the grading or mowing of 5 square miles of habitat. The loss of biological soil crust, old growth desert plants and caliche all contribute to fugitive dust. This can lead to Valley Fever which will even be worse during the Covid-19 crisis.
Basin and Range Watch - 3	Climate change	The loss of so much soil crust and so many living organisms will contribute to climate change by removing 5 square miles of carbon sequestering living organisms.
Basin and Range Watch - 4	Migratory Birds	Solar Panels will create a lake effect and several solar projects including the Desert Sunlight Solar Project in California have resulted in multiple bird fatalities. The project will be near the Muddy River and Colorado River and will kill birds.
Basin and Range Watch - 5	Vegetation	The project will remove habitat for rare and native plants like Nye milkvetch and Threecornor milkvetch.
Basin and Range Watch - 6	Wildlife	The project will remove habitat for and kill kit foxes, American badgers, kangaroo rats, desert iguanas, horned lizards,and hundreds of other Mojave Desert species.
Basin and Range Watch - 7	Threatened and Endangered Species	Mowing vegetation has not been a proven mitigation to insure the survival of the desert tortoises. The BLM and Moapa Reservation have already approved close to 20 square miles of solar projects which are pushing the Threatened desert tortoise closer to extinction. The desert tortoise has seen close to a 50 percent decline on much of its range since 2010. Gemini Solar os expected to remove 1,200 tortoises. This one probably will impact about 500 including juveniles and hatchlings.
Basin and Range Watch - 8	Visual Resources	The project will create a large, unsightly visual impact which will be visible from dozens of miles away.
Basin and Range Watch - 9	Cumulative Impacts	The cumulative impact from all the solar projects have reduced the biological diversity of the region.
Basin and Range Watch - 10	Socieoconomics	Solar Projects create about 200 construction jobs for just over a year and eventually only result in about 5 to 10 full time jobs. Is the loss of all the biodiversity worth that?
Basin and Range Watch - 11	Recreation	The projects are always fenced off and all access is cut off.
EPA-1	Air Quality Cumulative Impacts Public Health and Safety Water Resources	Because there are multiple solar projects being planned adjacent or in proximity on the Reservation, construction schedules could partially overlap, especially with Southern Bighorn Solar Project (SBSP) Phase 1 to the south of the K-Road project and Arrow Canyon1. The DEIS should discuss these combined impacts to resources; for example, air quality and worker health impacts, and impacts to groundwater if the same wells will be used during construction.

Comment ID	Resource Category	Comment
EPA-2	Water Resources	The SBSP site is located downstream from the ESM Solar project and will receive stormwater flows that originate from that site. Therefore, development of the drainage plans for SBSP will need to integrate those developed for ESM. We recommend a description in the DEIS of how the drainage plans will be integrated.
EPA-3	Soils Water Resources Wetland/Riparian Zones	The project site to the north (SBSP Phase 2) appears to encompass two clearly defined branched drainage networks, flows from which will presumably be directed to the more prominent drainage that originates from the ESM site. These drainages all flow to the California Wash which flows to the Muddy River. A portion of the drainages from the SBSP Phase 1 site also includes drainages to the California Wash. As construction of ESM begins and more flows are diverted to the prominent drainages the potential for more significant impacts increases and these drainages may see additional erosion and sedimentation impacts. We have consistently recommended larger drainages be given wide buffers so the channels may adjust to the new hydraulic conditions without the need for major human-made structures. Since the SBSP site will receive ESM flows that will have been concentrated prior to entering the SBSP site, these higher volume flows will require a larger buffer than what was allocated for avoidance on the ESM project site. The DEIS should identify the widths of buffers for each project to demonstrate the planning for SBSP is accommodating the upstream concentrated flows from ESM.
EPA-4	Water Resources	We recommend monitoring occur and affects and responses be documented. BIA and the Tribe may want to prepare a master drainage plan for the area encompassing ESM, SBSP, the existing K-Road site, and the portion of the Arrow Canyon site that flows to the California Wash and include sediment and channel elevation monitoring stations to assist in the adaptive management of erosion and sedimentation. Adaptive management plans should be coordinated with those of the other projects and once all projects are constructed, we recommend monitoring for all the projects together.
EPA-5	Soils Water Resources	In addition, the drainage plans should consider the impacts of changing precipitation patterns on the project. There may be design considerations needed to accommodate future stormwater flows resulting from increased intensity and severity of storms. We recommend upsizing stormwater infrastructure.
EPA-6	Air Quality Waste, Hazardous or Solid Water Resources	Ensure battery storage areas are not located in drainages or any areas subject to flooding. Because the project is on Tribal land where County requirements do not apply, we recommend against citing to local codes unless the project description identifies that the project will be designed and will voluntarily conform with local codes, such as the County floodplain requirements or dust control, for example.
EPA-7	Soils Traffic/Transportation Water Resources	We recommend minimizing the number of road crossings over washes in order to minimize erosion, migration of channels, and scour. All road crossings should be designed to provide adequate flowthrough during large storm events.
EPA-8	Air Quality Topography/Geology Water Resources Public Health and Safety Vegetation Invasive Plants and Noxious Weeds	Grading alters soil stability and contributes to erosion. We understand that mowing of vegetation will be employed and grading will be minimized. Detail the grading strategy in the project description in the DEIS with an estimate of the acreages that will be graded. We recommend that grading be minimized to the greatest extent possible, since this will benefit several resources including water quality, air quality, worker health, vegetation, and will minimize the spread of invasive species.
EPA-9	Air Quality	The Moapa River Indian Reservation is located outside the ozone nonattainment area for Clark County. The project area is also in attainment for particulate matter 10 microns in diameter or smaller (PM10); however, fugitive dust is still a pollutant of concern that would be generated during construction and dust control Best Management Practices should be utilized. While Clark County does not have jurisdiction on tribal land, the BIA and Tribe could consider requiring contractors to attend a Dust Control Class, held twice monthly, by the Clark County Department of Air Quality, and utilizing the resources in their Dust Control Handbook. (http://www.clarkcountynv.gov/airquality/compliance/Documents/DustControl/DustControlForms/DUST_CONTROL_HANDBOOK.pdf#search=dust%20control%20handbook)

Comment ID	Resource Category	Comment
EPA-10	Air Quality Public Health and Safety	Dust control is important since the project site is located in an area that the Centers for Disease Control has determined is suspected endemic for Coccidioides immitis, a fungus causing Valley Fever in humans (http://www.cdc.gov/fungal/diseases/coccidioidomycosis/causes.html). Ground disturbing activities could result in dispersal of Coccidioides spores. Measures should be identified to prevent or reduce the risk of exposure to workers, including training for workers and supervisors on the potential presence of Valley Fever spores, methods to minimize exposure, and how to recognize symptoms. Mitigation measures could include limiting workers' exposure to outdoor dust in disease-endemic areas by (1) providing air-conditioned cabs for vehicles that generate dust and making sure workers keep windows and vents closed, (2) suspending work during heavy winds, and (3) directing them to remove dusty clothing after fieldwork and store in closed plastic bags until washed. When exposure to dust is unavoidable, provide approved respiratory protection to filter particles.
EPA-11	Cumulative Impacts	To the extent possible, identify the tentative construction schedule and indicate if it will overlap with construction of ESM and/or Arrow Canyon Solar projects, which are located very near this project site, as well as the Gemini Solar Project off-reservation to the east of Highway 15. A thorough cumulative effects analysis capturing these impacts would be appropriate.
EPA-12	Vegetation	Discuss general locations of rare plants and describe how potential impacts will be minimized. Consider impacts from increase of shade on vegetation and species in the desert environment and impacts from fences. Indicate if any pesticides and herbicides would be used for vegetation treatment. We recommend maintaining the presence of native plants under PV panels, to the greatest extent possible.
EPA-13	Invasive Plants and Noxious Weeds	Ensure the Weed Management Plan includes the latest information regarding the effectiveness of existing control measures in the vicinity, including those utilized at the K-Road Solar project and in the utility corridor.
EPA-14	Cumulative Impacts Threatened and Endangered Species	Present the direct and cumulative impacts that this project, along with other solar projects proposed in the Mojave Desert, is expected to have on the threatened Mojave Desert tortoise. Discuss the potential long-term effects from fragmenting or isolating desert tortoise conservation areas and restricting gene flow. We understand the proposed design would utilize fencing that will allow tortoise to reenter the site upon completion. Ensure this is described in the project description. Include monitoring, reporting and adaptive management efforts to ensure species and habitat conservation effectiveness.
EPA-15	Migratory Birds	Discuss impacts to birds from the "lake effect", where birds may mistake the PV panels for water resulting in unexpected deaths from collisions with the solar panels. State whether this phenomenon has occurred at the operational K-Road facility and describe measures to minimize potential impacts. We recommend that the Bird and Bat Conservation Strategies include avian mortality monitoring and adaptive management measures. Because the project will straddle the existing K-Road site on two sides and lie just east of ESM, the lake effect could be compounded. Indicate in the DEIS whether any birds deaths from this phenomenon have occurred at the operational K-Road site.
EPA-16	Cumulative Impacts	As mentioned above, the cumulative impacts analysis for this project should be more robust if construction schedules will overlap since the other solar projects are in proximity.
EPA-17	Cumulative Impacts	Describe the methodology used to assess cumulative impacts. We recommend the BIA consider the methodology developed jointly by EPA, the Federal Highway Administration, and the California Department of Transportation. While this methodology was developed for transportation projects in California, the principles and steps in this guidance offer a systematic way to analyze cumulative impacts for any project (See: https://dot.ca.gov/programs/environmental-analysis/standard-environmental-reference-ser/cumulative-impact-analysis-approach#eight)
JP-1	Wastes, Hazardous or Solid Vegetation Migratory Birds	Subject: put solar on roofs and pollued land - not on godo habitable land destroying habitable land for solar does not make sense. michezl moores film shows how alot of solar projects are falling apart in the nevada desert. they end up just being loads of pollution on the land. this project hasno reason for being. it will destroy 3600 acres wioth these post for solar. the solars fry birds in the sky. wwe canjust stay with the production we have. this move is no better. its just new but no better. this comment is for the public record. we dont want to cover every inch of land with mankinds projfiteersing.

Comment ID	Resource Category	Comment
Moapa Band-1		I wanted to thank BIA and 8minute team. This has been a three-year project. The tribe has been and continues to promote clean energy to replace coal, and this is one more step in working with our partners in promoting clean energy. Several councils have worked on this project also, and many more will continue the work to be a clean energy tribe and neighbor.

Original Comments

Scott Carey

From: NevadaClearinghouse
To: Brad Hardenbrook
Subject: RE: Nevada State Clearinghouse Notice E2020-240 (E2020-240 EIS BIA Southern Bighorn Solar Project-Clark County)

From: NevadaClearinghouse@lands.nv.gov <NevadaClearinghouse@lands.nv.gov>
Sent: Thursday, May 14, 2020 5:02 PM
Subject: Nevada State Clearinghouse Notice E2020-240 (E2020-240 EIS BIA Southern Bighorn Solar Project-Clark County)

NEVADA STATE CLEARINGHOUSE
Department of Conservation and Natural Resources, Division of State Lands
901 S. Stewart St., Ste. 5003, Carson City, Nevada 89701-5246
(775) 684-2723 Fax (775) 684-2721

TRANSMISSION DATE: 05/14/2020

U.S. Bureau of Indian Affairs

Nevada State Clearinghouse Notice E2020-240

Project: E2020-240 EIS BIA Southern Bighorn Solar Project-Clark County

The Bureau of Indian Affairs (BIA), in cooperation with the Moapa Band of Paiute Indians (Moapa Band) proposes to approve two solar energy ground leases with 300MS 8me LLC and 425LM 8me LLC, both subsidiaries of 8minute Solar Energy, which provide for construction, operation and maintenance, and eventual decommissioning of the photovoltaic (PV) solar energy generation and battery storage facilities located entirely on the Moapa River Indian Reservation (Reservation) (See map). An Environmental Impact Statement (EIS) will be prepared to evaluate the PV solar energy generation and battery storage projects. For more information and to view project documents please visit https://southernbighornsolar.com/. Comments due to the Clearinghouse on June 5, 2020.

Follow the link below to find information concerning the above-mentioned project for your review and comment.

E2020-240 - http://clearinghouse.nv.gov/public/Notice/2020/E2020-240.pdf

- **Please evaluate this project's effects on your agency's plans and programs and any other issues that you are aware of that might be pertinent to applicable laws and regulations.**
- **Please reply directly from this e-mail and attach your comments.**
- **Please submit your comments no later than Friday June 5th, 2020.**

Clearinghouse project archive

Questions? Scott Carey, Program Manager, (775) 684-2723 or nevadaclearinghouse@state.nv.us

____No comment on this project ____Proposal supported as written

AGENCY COMMENTS:

The Nevada Department of Wildlife (NDOW) understands the proposed Southern Bighorn Solar Project (SBSP) is nearly completely within the Moapa River Paiute Reservation and adjacent to the existing Moapa Solar Energy Center. In considering the scope of NEPA analysis based from our recent correspondence with the Bureau of Indian Affairs, the environmental analysis approach will be very similar to that for the Moapa Solar Energy Center, as well as the proposed Eagle Shadow Mountain Solar and Arrow Canyon Solar projects. NDOW recently attended an inter-agency informational forum and learned more of facility footprint configuration, construction access, and tie-in with the existing transmission corridor.

In view of solar energy development on Moapa River Paiute Reservation, the nearby proposed Gemini Solar Project site, other energy projects along the I-15 corridor and the potential for additional solar projects and infrastructure between Las Vegas and Mesquite, the SBSP does have potential for conserving contiguous, relatively undisturbed habitat at the landscape level. In this vein, we respectfully request as a regional conservation mitigation consideration in leaving as much ground surface and vegetation intact as possible, as similarly proposed for the Gemini Solar Project and discussed for the Eagle Shadow Solar Project.

In the event moving desert tortoises out of harm's way becomes an impact minimization measure for portions of the SBSP on non-tribal lands, observance of Nevada Revised Statute 503.597 and Nevada Administrative Codes 503.093 and 503.0935 underscore need for acquiring NDOW authorization. Such authorization would not take the place of permits or authorizations required by other levels of government for conducting such activities.

We will appreciate inclusion of measures for avoiding or minimizing impacts should the Gila monster be encountered (current protocols attached). Please contact NDOW reptile biologist Jason Jones by email at jljones@ndow.org for additional information regarding authorization requirements. Application and example information is also online at: http://www.ndow.org/Forms_and_Resources/Special_Permits/. And where appropriate, seasonal considerations for avoiding impacts to breeding migratory birds on non-tribal lands is anticipated.

Thank you for this input opportunity. We look forward to reviewing the draft EIS when it becomes available.

Sincerely,

Signature: D. Bradford Hardenbrook
Supervisory Habitat Biologist
NDOW – Southern Region
bhrdnbrk@ndow.org

Date: June 5, 2020

NEVADA DEPARTMENT OF WILDLIFE
SOUTHERN REGION

3373 Pepper Lane, Las Vegas, Nevada 89120
Phone: 702-668-3839 or 702-486-5127; Fax: 702-486-5133

5 February 2020

GILA MONSTER STATUS, IDENTIFICATION AND REPORTING PROTOCOL FOR OBSERVATIONS

Status

- The **Gila monster (*Heloderma suspectum*) is** secretive, difficult to detect, and seemingly rare relative to other species. These attributes led the **State of Nevada** decades ago to classify the species as **Protected** (Nevada Administrative Code 503.080). Their populations are also vulnerable to poaching, the cumulative effects of habitat loss, fragmentation and degradation, and climate changes (Wildlife Action Plan Team 2012).

- Therefore, a person shall not hunt or take any protected wildlife, or possess any part thereof, without first obtaining the appropriate license, permit or written authorization from the Nevada Department of Wildlife (Nevada Administrative Codes 503.090 and 503.093).

- The USDI Bureau of Land Management has recognized this lizard as a sensitive species since 1978 and is to manage public lands in a manner to avoid the necessity of higher federal protections (BLM Manual 6840 – Special Status Species).

- In Clark County's Multiple Species Habitat Conservation Plan (MSHCP), the Gila monster is an *Evaluation Species*, meaning inadequate information exists to determine if mitigation from MSHCP implementation would demonstrably cover conservation actions necessary to ensure its persistence without additional protective intervention as provided under the federal Endangered Species Act.

- While the Gila monster is the only venomous lizard endemic to the United States, its behavioral disposition is somewhat docile and avoids confrontation. But it will readily defend itself if threatened. Most bites are considered *illegitimate*, not caused by Gila monster aggression, but resulting from human harassment or careless handling. Gila monsters are not dangerous unless molested or inappropriately handled and should never be harmed or killed.

- The Nevada Department of Wildlife (NDOW) has ongoing management studies for greatly improving our understanding specific to Nevada's banded Gila monster populations; hence, **additional sightings and descriptions for this species distribution, habitat, and biological information is of utmost interest**.

- In assistance to gathering additional information about Nevada's Gila monsters, **NDOW will be notified whenever a Gila monster is encountered or observed**, and under what circumstances (see Reporting Protocol below).

Identification

The banded Gila monster (*H. s. cinctum*) is the only wild subspecies occurring in Nevada, and is restricted to Clark, Lincoln, and Nye counties. Found mainly below 5,000 feet elevation, its geographic range approximates that of the desert tortoise (*Gopherus agassizii*) in Nevada. Gila monster habitat requirements center on complex rocky landscapes of upland desert scrub overlapping desert wash, spring, and riparian habitats, often characteristic of alluvial fans (bajadas) and adjacent rocky fields. Gila monster habitat overlaps that of both the desert tortoise and chuckwalla (*Sauromalus ater*).

Gila monsters are recognizable by a striking black and orange-pink coloration and bumpy, or beaded, skin. In keeping with its name, the banded Gila monster (shown left) retains a black chain-link, banded pattern into adulthood. Sometimes other non-venomous lizards are mistaken for the Gila monster. Of these, the western banded gecko (*Coleonyx variegatus*) and the chuckwalla are the most frequent. All three share similar habitats.

To untrained eyes, the color pattern and finely granular skin of the western banded gecko (right) may have the looks of a baby or juvenile Gila monster. But gecko heads are more pointed at the snout and the relatively large eyes have *vertical* pupils befitting their nighttime habits. Gila monsters may be both nocturnal and diurnal; the smallish eyes have *round* pupils. Snouts are bluntly rounded. Newly hatched Gila monsters vary in length at 5-7 inches with a vivid orange and black, banded pattern. Western banded geckos are generally smaller than 4 inches with cream to yellow background colors and brown to purple banded patterns.

Chuckwalla adults (left) and juveniles have a body shape somewhat suggestive of the Gila monster, but they lack the coarsely beaded skin and showy black and orange-pink body pattern. While juvenile chuckwallas can have orange and black banded tails, this colorful banding fades as chuckwallas mature. From nose to tail tip, adult chuckwallas may reach 17 inches long, rivaling that of the Gila monster. Chuckwallas are herbivorous. When alarmed, they are fast movers seeking cracks and crevices into which they can wedge themselves by inflating their bodies with air. Chuckwallas are diurnal and rock dwellers.

Reporting Protocol

Field workers (e.g. construction foremen, bio-monitors) must at least know how to: (1) identify a Gila monster by distinguishing it from other lizards like the chuckwalla and western banded gecko (see **Identification** above); (2) Report any Gila monster observation to the NDOW; (3) Be aware of the consequences of a Gila monster bite resulting from carelessness or unnecessary harassment; and, (4) Be advised of protective measures provided under state law and federal management policies.

1) Live Gila monsters found in harm's way in the construction site will be captured and then detained by the project biologist or equivalent personnel in a cool (≤85°F), shaded environment (air-conditioned vehicle or trailer is okay) until a NDOW biologist can arrive for biological documentation prior to its release Although a Gila monster is venomous and can inflict a serious bite, its relatively slow gate allows for it to be easily coaxed or carefully lifted into an open bucket or box using a long handled instrument like a snake hook, tongs, or shovel (*Note: it is not the intent to request unreasonable action to facilitate captures; additional coordination with NDOW will clarify logistical points*). For safe detainment, an unused or sterile 5-gallon plastic bucket with a secure, vented lid; an 18"x18"x4" plastic sweater box having a secure, vented lid; or, a tape-sealed cardboard box of similar dimension may be used. And, written information identifying the mapped capture location, Global Positioning System (GPS) coordinates in Universal Transverse Mercator (UTM) using North American Datum (NAD) 83 Zone 11 along with date, time, and circumstances (e.g. biological survey, construction monitoring) and habitat description (e.g. vegetation, slope, aspect, substrate) will also be provided to NDOW.

2) Injuries to Gila monsters may occur during excavation, blasting, road grading, or other construction activities. In the event a Gila monster is injured, it should be transferred to a veterinarian proficient in reptile medicine for evaluation of appropriate treatment. Therapy or euthanasia expenses will not be covered by NDOW. However, NDOW will be immediately notified of any injury to a Gila monster and which veterinarian is providing care for the animal. If an animal is killed or found dead, the carcass will be immediately frozen and transferred to NDOW with a complete written description of the discovery and circumstances, date, time, habitat, and mapped location (GPS coordinates in UTM using NAD 83 Z 11).

3) Should NDOW's assistance be delayed, biological or equivalent acting personnel on site should detain the Gila monster out of harms way until NDOW personnel can respond. **The Gila monster should be detained until NDOW biologists have responded**. Should NDOW not be immediately available to respond for photo-documentation, a digital camera (≥5 mega-pixels) will be used to take good quality images of the Gila monster *in situ* at the location of live encounter or dead salvage. The pictures will be provided to NDOW at the address above or the email address below along with specific location information including GPS coordinates in UTM using NAD 83 Z 11, date, time and habitat description. Pictures will show the following information: (1) Encounter location (landscape with Gila monster in clear view); (2) a clear overhead shot of the entire body with a ruler next to it for scale (Gila monster should fill camera's field of view and be in sharp focus); and, (3) a clear, overhead close-up of the head (head should fill camera's field of view and in sharp focus).

Please Remember: Gila monsters are considered sensitive species and sharing of observation information to sources outside of NDOW or other permitting agencies may result in adverse conservation or administrative consequences.

Contact NDOW Biologist Jason L. Jones at 702.668.3938 (office), 208-240-0194 (cell; leave message or text), 702.486.5127 (front desk) or by e-mail at jljones@ndow.org for additional information regarding these protocols.

Nick Brasier

From: Lewis, Charles <Charles.Lewis@bia.gov>
Sent: Monday, June 8, 2020 10:57 AM
To: Patricia McCabe
Cc: Southern Big Horn Solar Project
Subject: Fwd: [EXTERNAL] Southern Bighorn Solar Project on the Moapa River Indian Reservation, Clark County, Nevada

Chip Lewis
Regional Environmental Protection Officer
602-240-8448

From: K. Emmerich <atomicquailranch@gmail.com>
Sent: Monday, June 8, 2020 10:52:56 AM
To: Lewis, Charles <Charles.Lewis@bia.gov>
Subject: [EXTERNAL] Southern Bighorn Solar Project on the Moapa River Indian Reservation, Clark County, Nevada

Greetings,

To: Chip Lewis

re: Comments on scoping for the Southern Bighorn Solar Project on the Moapa River Indian Reservation, Clark County, Nevada

These comments are for the scoping for the Southern Bighorn Solar Project. We are sending you these comments because you have requested it.

Basin and Range Watch is a 501(c)(3) non-profit working to conserve the deserts of Nevada and California and to educate the public about the diversity of life, culture, and history of the ecosystems and wild lands of the desert. Federal and many state agencies are seeking to open up millions of acres of unspoiled habitat and public land in our region to energy development. Our goal is to identify the problems of energy sprawl and find solutions that will preserve our natural ecosystems, open spaces, and quality of life for local communities. We support energy efficiency, better rooftop solar policy, and distributed generation/storage alternatives, as well as local, state and national planning for wise energy and land use following the principles of conservation biology.

The project has a power purchase agreement with NV Energy so obviously there is intent to build it. but a 3,600 acre project will impact 5 square miles of Mojave Desert Habitat. This is undeveloped habitat and a project of this have will have huge impacts and will result in a great loss of biological diversity. This project will kill a large quantity of living organisms. This is a net loss and mitigation will not make up for it. The amount of large scale solar built in the area should make you consider rejecting this proposal.

The following subjects should be reviewed in the Draft Environmental Impact Statement:

1. Fugitive dust will result in the grading or mowing of 5 square miles of habitat. The loss of biological soil crust, old growth desert plants and caliche all contribute to fugitive dust. This can lead to Valley Fever which will even be worse during the Covid-19 crisis.

2. The loss of so much soil crust and so many living organisms will contribute to climate change by removing 5 square miles of carbon sequestering living organisms.

3. Solar Panels will create a lake effect and several solar projects including the Desert Sunlight Solar Project in California have resulted in multiple bird fatalities. The project will be near the Muddy River and Colorado River and will kill birds.

4. The project will remove habitat for rare and native plants like Nye milkvetch and Threecornor milkvetch.

5. The project will remove habitat for and kill kit foxes, American badgers, kangaroo rats, desert iguanas, horned lizards,and hundreds of other Mojave Desert species.

6. Mowing vegetation has not been a proven mitigation to insure the survival of the desert tortoises. The BLM and Moapa Reservation have already approved close to 20 square miles of solar projects which are pushing the Threatened desert tortoise closer to extinction. The desert tortoise has seen close to a 50 percent decline on much of its range since 2010. Gemini Solar os expected to remove 1,200 tortoises. This one probably will impact about 500 including juveniles and hatchlings.

7. The project will create a large, unsightly visual impact which will be visible from dozens of miles away.

8. The cumulative impact from all the solar projects have reduced the biological diversity of the region.

9. Solar Projects create about 200 construction jobs for just over a year and eventually only result in about 5 to 10 full time jobs. Is the loss of all the biodiversity worth that?

10:. The projects are always fenced off and all access is cut off.

Thank you,
Kevin Emmerich
Basin and Range Watch
P.O. Box 70
Beatty, NV 89002

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

June 8, 2020

Mr. Chip Lewis
BIA Western Regional Office
2600 North Central Avenue
4th Floor Mailroom
Phoenix, Arizona 85004

Subject: Scoping comments for the proposed Southern Bighorn Solar Project on the Moapa River Indian Reservation, Clark County, Nevada

Dear Mr. Lewis:

The U.S. Environmental Protection Agency has reviewed the Federal Register Notice published on May 8, 2020 requesting comments on the Bureau of Indian Affairs' decision to prepare an Environmental Impact Statement for the subject project. Our comments are provided pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508) and our NEPA review authority under Section 309 of the Clean Air Act. EPA is a NEPA cooperating agency on the project.

The proposed project would be located on up to 3,600 acres of tribal trust land and would have a combined capacity of up to 400 megawatts alternating current (MWac); 300 MWac for one project/phase and 100 MWac for a second project/phase. Collector lines and access roads required for interconnection of the solar projects would be located on the Reservation, Reservation lands administered by the BLM, and BLM lands. The project site is located both north and southwest of the existing Moapa Solar Energy Project formerly known as K-Road. Two other proposed solar projects – Arrow Canyon and Eagle Shadow Mountain (ESM), lie just west of the utility corridor less than a mile away.

The Notice of Intent indicates that resources that may be evaluated include: water resources, biological resources, threatened and endangered species, cultural resources, Native American religious concerns, and aesthetics. We agree these resources are appropriate for evaluation. We have the following additional recommendations:

Concurrent construction impacts

Because there are multiple solar projects being planned adjacent or in proximity on the Reservation, construction schedules could partially overlap, especially with Southern Bighorn Solar Project (SBSP) Phase 1 to the south of the K-Road project and Arrow Canyon[1]. The DEIS should discuss these combined impacts to resources; for example, air quality and worker health impacts, and impacts to groundwater if the same wells will be used during construction.

[1] Telephone conversation Chip Lewis, BIA, June 3, 2020

Integrating drainage plans with other projects

The SBSP site is located downstream from the ESM Solar project and will receive stormwater flows that originate from that site. Therefore, development of the drainage plans for SBSP will need to integrate those developed for ESM. We recommend a description in the DEIS of how the drainage plans will be integrated.

The project site to the north (SBSP Phase 2) appears to encompass two clearly defined branched drainage networks, flows from which will presumably be directed to the more prominent drainage that originates from the ESM site. These drainages all flow to the California Wash which flows to the Muddy River. A portion of the drainages from the SBSP Phase 1 site also includes drainages to the California Wash. As construction of ESM begins and more flows are diverted to the prominent drainages the potential for more significant impacts increases and these drainages may see additional erosion and sedimentation impacts. We have consistently recommended larger drainages be given wide buffers so the channels may adjust to the new hydraulic conditions without the need for major human-made structures. Since the SBSP site will receive ESM flows that will have been concentrated prior to entering the SBSP site, these higher volume flows will require a larger buffer than what was allocated for avoidance on the ESM project site. The DEIS should identify the widths of buffers for each project to demonstrate the planning for SBSP is accommodating the upstream concentrated flows from ESM.

We recommend monitoring occur and affects and responses be documented. BIA and the Tribe may want to prepare a master drainage plan for the area encompassing ESM, SBSP, the existing K-Road site, and the portion of the Arrow Canyon site that flows to the California Wash and include sediment and channel elevation monitoring stations to assist in the adaptive management of erosion and sedimentation. Adaptive management plans should be coordinated with those of the other projects and once all projects are constructed, we recommend monitoring for all the projects together.

In addition, the drainage plans should consider the impacts of changing precipitation patterns on the project. There may be design considerations needed to accommodate future stormwater flows resulting from increased intensity and severity of storms. We recommend upsizing stormwater infrastructure.

Ensure battery storage areas are not located in drainages or any areas subject to flooding. Because the project is on Tribal land where County requirements do not apply, we recommend against citing to local codes unless the project description identifies that the project will be designed and will voluntarily conform with local codes, such as the County floodplain requirements or dust control, for example.

We recommend minimizing the number of road crossings over washes in order to minimize erosion, migration of channels, and scour. All road crossings should be designed to provide adequate flow-through during large storm events.

Topography/Geology

Grading alters soil stability and contributes to erosion. We understand that mowing of vegetation will be employed and grading will be minimized[2]. Detail the grading strategy in the project description in the DEIS with an estimate of the acreages that will be graded. We recommend that grading be minimized to the greatest extent possible, since this will benefit several resources including water quality, air quality, worker health, vegetation, and will minimize the spread of invasive species.

[2] Email conversation, Chip Lewis, BIA, June 3, 2020

Air quality/public health

The Moapa River Indian Reservation is located outside the ozone nonattainment area for Clark County. The project area is also in attainment for particulate matter 10 microns in diameter or smaller (PM_{10}); however, fugitive dust is still a pollutant of concern that would be generated during construction and dust control Best Management Practices should be utilized. While Clark County does not have jurisdiction on tribal land, the BIA and Tribe could consider requiring contractors to attend a Dust Control Class, held twice monthly, by the Clark County Department of Air Quality, and utilizing the resources in their Dust Control Handbook.[3]

Dust control is important since the project site is located in an area that the Centers for Disease Control has determined is suspected endemic for *Coccidioides immitis*, a fungus causing Valley Fever in humans[4]. Ground disturbing activities could result in dispersal of *Coccidioides* spores. Measures should be identified to prevent or reduce the risk of exposure to workers, including training for workers and supervisors on the potential presence of Valley Fever spores, methods to minimize exposure, and how to recognize symptoms. Mitigation measures could include limiting workers' exposure to outdoor dust in disease-endemic areas by (1) providing air-conditioned cabs for vehicles that generate dust and making sure workers keep windows and vents closed, (2) suspending work during heavy winds, and (3) directing them to remove dusty clothing after fieldwork and store in closed plastic bags until washed. When exposure to dust is unavoidable, provide approved respiratory protection to filter particles.

To the extent possible, identify the tentative construction schedule and indicate if it will overlap with construction of ESM and/or Arrow Canyon Solar projects, which are located very near this project site, as well as the Gemini Solar Project off-reservation to the east of Highway 15. A thorough cumulative effects analysis capturing these impacts would be appropriate.

Biological Resources

Vegetation Management - Discuss general locations of rare plants and describe how potential impacts will be minimized. Consider impacts from increase of shade on vegetation and species in the desert environment and impacts from fences. Indicate if any pesticides and herbicides would be used for vegetation treatment. We recommend maintaining the presence of native plants under PV panels, to the greatest extent possible.

Invasive Plants and Noxious Weeds - Ensure the Weed Management Plan includes the latest information regarding the effectiveness of existing control measures in the vicinity, including those utilized at the K-Road Solar project and in the utility corridor.

Desert Tortoise - Present the direct and cumulative impacts that this project, along with other solar projects proposed in the Mojave Desert, is expected to have on the threatened Mojave Desert tortoise. Discuss the potential long-term effects from fragmenting or isolating desert tortoise conservation areas and restricting gene flow. We understand the proposed design would utilize fencing that will allow tortoise to reenter the site upon completion. Ensure this is described in the project description. Include monitoring, reporting and adaptive management efforts to ensure species and habitat conservation effectiveness.

Impacts to Birds – Discuss impacts to birds from the "lake effect", where birds may mistake the PV panels for water resulting in unexpected deaths from collisions with the solar panels. State whether this

[3] http://www.clarkcountynv.gov/airquality/compliance/Documents/DustControl/DustControlForms/DUST_CONTROL_HANDBOOK.pdf#search=dust%20control%20handbook

[4] See: http://www.cdc.gov/fungal/diseases/coccidioidomycosis/causes.html

phenomenon has occurred at the operational K-Road facility and describe measures to minimize potential impacts. We recommend that the Bird and Bat Conservation Strategies include avian mortality monitoring and adaptive management measures. Because the project will straddle the existing K-Road site on two sides and lie just east of ESM, the lake effect could be compounded. Indicate in the DEIS whether any birds deaths from this phenomenon have occurred at the operational K-Road site.

Cumulative impacts

As mentioned above, the cumulative impacts analysis for this project should be more robust if construction schedules will overlap since the other solar projects are in proximity.

Describe the methodology used to assess cumulative impacts. We recommend the BIA consider the methodology developed jointly by EPA, the Federal Highway Administration, and the California Department of Transportation. While this methodology was developed for transportation projects in California, the principles and steps in this guidance offer a systematic way to analyze cumulative impacts for any project.[5]

We appreciate the opportunity to provide comments on the preparation of the DEIS. If you have any questions, please contact me at (415) 947-4178 or vitulano.karen@epa.gov.

Sincerely,

Karen Vitulano
Environmental Review Branch

cc: Laura Watters, Chairwoman, Moapa Band of Paiute Indians

[5] See: https://dot.ca.gov/programs/environmental-analysis/standard-environmental-reference-ser/cumulative-impact-analysis-approach#eight

Nick Brasier

From: Lewis, Charles <Charles.Lewis@bia.gov>
Sent: Friday, May 8, 2020 2:06 PM
To: Patricia McCabe
Cc: Southern Big Horn Solar Project
Subject: Fwd: [EXTERNAL] Fwd: put solar on roofs and pollued land - not on godo habitable land

Chip Lewis
Regional Environmental Protection Officer
602-240-8448

From: jean public <jeanpublic1@gmail.com>
Sent: Friday, May 8, 2020 10:05:50 AM
To: Lewis, Charles <Charles.Lewis@bia.gov>; Sweeney, Tara M <Tara_Sweeney@ios.doi.gov>; foe@foe.org <foe@foe.org>; info@earthjustice.org <info@earthjustice.org>; information@sierraclub.org <information@sierraclub.org>
Subject: [EXTERNAL] Fwd: put solar on roofs and pollued land - not on godo habitable land

public comment on federal register

destroying habitable land for solar does not make sense. michezl moores film shows how alot of solar projects are falling apart in the nevada desert. they end up just being loads of pollution on the land. this project hasno reason for being. it will destroy 3600 acres wioth these post for solar. the solars fry birds in the sky. wwe canjust stay with the production we have. this move is no better. its just new but no better. this comment is for the public record. we dont want to cover every inch of land with mankinds projfiteersing. please receipt. jean publiee jean public1@gmail.com

Subject: put solar on roofs and pollued land - not on godo habitable land

[Federal Register Volume 85, Number 90 (Friday, May 8, 2020)]
[Notices]
[Pages 27431-27432]
From the Federal Register Online via the Government Publishing Office [www.gpo.gov]
[FR Doc No: 2020-09831]

DEPARTMENT OF THE INTERIOR

Bureau of Indian Affairs

[201A2100DD/AAKC001030/A0A501010.999900 253G]

Notice of Intent To Prepare an Environmental Impact Statement for the Southern Bighorn Solar Project on the Moapa River Indian Reservation, Clark County, Nevada

AGENCY: Bureau of Indian Affairs, Interior.

ACTION: Notice of intent.

SUMMARY: The Bureau of Indian Affairs (BIA), as lead agency, in cooperation with the Moapa Band of Paiute Indians (Moapa Band), the Bureau of Land Management (BLM), and other agencies, intend to prepare an Environmental Impact Statement (EIS) that will evaluate a photovoltaic (PV) solar energy generation and storage projects on the Moapa River Indian Reservation (Reservation) and collector lines and access roads located on the Reservation, Reservation lands administered by BLM, and BLM lands. This notice announces the beginning of the scoping process to solicit public comments and identify potential issues related to the EIS. It also announces that two live streaming events will be held where the project team will introduce the project and be available by internet and by phone to document and discuss potential issues, alternatives, and mitigation to be considered in the EIS.

DATES: Written comments on the scope of the EIS or implementation of the proposal must arrive by 11:59 p.m. on June 8, 2020. The dates and times of the virtual public scoping meetings will be published in the Las Vegas Review-Journal and Moapa Valley Progress 15 days before the scoping meetings.

ADDRESSES: You may mail, email, or hand carry written comments to Mr. Chip Lewis, BIA Western Regional Office, 2600 North Central Avenue, 4th Floor Mailroom, Phoenix, Arizona 85004; telephone: (602) 379-6750; email: Chip.Lewis@bia.gov.

SUPPLEMENTARY INFORMATION: The proposed Federal action, taken under 25 U.S.C. 415, is the BIA's approval of two solar energy ground leases and associated agreements entered into by the Moapa Band with 300MS 8me LLC and 425LM 8me LLC (Applicants), both subsidiaries of 8minute Solar Energy. The agreements provide for construction, operation and maintenance (O&M), and eventual decommissioning of the PV electricity generation and battery storage facilities located entirely on the Reservation, in Clark County Nevada. The PV electricity generation and battery storage facilities would be located on up to 3,600 acres of tribal trust land and would have a combined capacity of up to 400 megawatts alternating current (MWac)--300 MWac for one project/phase, and 100 MWac for a second project/phase. Collector lines and access roads required for interconnection of the solar projects would be located on the Reservation, Reservation lands administered by the BLM, and BLM lands. Together, the proposed solar energy generation and storage facilities, collector lines, and other associated facilities will make up the two projects/phases of the Southern Bighorn Solar Project (SBSP). The proposed SBSP would require the BIA to approve a business lease and for both the BIA and the BLM to approve and authorize

[[Page 27432]]

rights-of-way (ROWs) for the electrical collector lines and access roads.

The SBSP would be constructed on up to 3,600 acres located within a 6,308-acre lease option area in Township (T) 16 South (S), Range (R) 64 East (E) that includes all or parts of Sections 12-14, 22-27, and 33-36; T16S R65E Sections 4-9, 16-18, 30, and 31; and T17S R64E Sections

10-12, Mount Diablo Baseline and Meridian, Nevada. Primary access to the Project would be provided by I-15, North Las Vegas Boulevard, and an existing improved access road on Reservation lands, Reservation lands administered by the BLM, and BLM lands. The overhead collector lines would connect the solar projects to the substation(s) within the boundaries of the previously approved Eagle Shadow Mountain Solar Project. From there, the electricity generated would connect to the existing gen-tie line and be delivered to the regional electrical grid at NV Energy's Reid Gardner Substation.

Construction of the 300MWac project/phase is expected to take approximately 14-16 months, and construction of the up to 100MWac project/phase is expected to take approximately 8-10 months. The two projects/phases may be constructed simultaneously or sequentially. The electricity generation and storage facilities are expected to be operated for up to 40 years under the terms of the leases. Major onsite facilities include multiple blocks of solar PV panels mounted on fixed tilt or tracking systems, pad mounted inverters and transformers, collector lines, up to 1,000 MW-hours of battery storage, access roads, and O&M facilities. Water will be needed during construction for dust control and a minimal amount will be needed during operations for administrative and sanitary water use and for panel washing. The water supply required for the Project would be leased from the Moapa Band.

The purposes of the proposed Project are, among other things, to: (1) Provide a long-term, diverse, and viable economic revenue base and job opportunities for the Moapa Band; (2) assist Nevada and neighboring states to meet their State renewable energy needs; and (3) allow the Moapa Band, in partnership with the Applicant, to optimize the use of the lease site while maximizing the potential economic benefit to the Tribe.

BIA will prepare the EIS in cooperation with the Moapa Band, BLM, Environmental Protection Agency, and possibly Nevada Department of Wildlife. In addition, the U.S. Fish and Wildlife Service (USFWS) and National Park Service will provide input on the analysis. The resulting EIS will aim to (1) provide agency decision makers, the Moapa Band, and the general public with a comprehensive understanding of the impacts of the proposed Project and alternatives on the Reservation; (2) describe the cumulative impacts of increased development on the Reservation; and (3) identify and propose mitigation measures that would minimize or prevent significant adverse impacts. Consistent with these objectives, the EIS will analyze the proposed Project and appurtenant features, viable alternatives, and the No Action alternative. Other alternatives may be identified in response to issues raised during the scoping process.

The EIS will provide a framework for BIA and BLM to make determinations and to decide whether to take the aforementioned Federal actions. In addition, BIA will use and coordinate the National Environmental Policy Act (NEPA) commenting process to satisfy its obligations under Section 106 of the National Historic Preservation Act (16 U.S.C. 470f) as provided for in 36 CFR 800.2(d)(3). Native American tribal consultations will be conducted in accordance with policy, and tribal concerns will be given due consideration, including impacts on Indian trust assets. Other federal agencies may rely on the EIS to make decisions under their authority and the Moapa Band may also use the EIS to make decisions under their Tribal Environmental Policy Ordinance. USFWS will review the EIS for consistency with the Endangered Species Act, as amended, and other implementing acts, and may rely on the EIS to support its decisions and opinions regarding the Project.

Issues to be addressed in the EIS analysis may include, but would not be limited to, Project impacts on water resources, biological resources, threatened and endangered species, cultural resources, Native American religious concerns, and aesthetics. In addition to those resource topics identified above, Federal, State, and local

agencies, along with other stakeholders that may be interested or affected by the BIA's decision on the proposed Project, are invited to participate in the scoping process to identify additional issues to be addressed.

Submission of Public Comments

Please include your name, return address, and the caption ``EIS, Southern Bighorn Solar Project,'' on the first page of any written comments. You may also submit comments verbally during one of the virtual public scoping meeting presentations or provide written comments to the address listed above in the ADDRESSES section.

Public scoping meetings will be held to further describe the Project and identify potential issues and alternatives to be considered in the EIS. To help protect the public and limit the spread of the COVID-19 virus, virtual public meetings will be held, where a short presentation will be made and team members present to discuss and answer questions. The PowerPoint presentation will be posted to the project website prior to the virtual meetings. Those who cannot live stream the presentation would be able to access the meeting presentation and could join by telephone. Additionally, the live presentation will be recorded and made accessible for viewing throughout the scoping period. The first public scoping meeting will be held in the afternoon by video and telephone conference and the second public scoping meeting will be held in the evening by video and telephone conference. The dates and times of the public scoping meetings will be included in notices to be published in the, Las Vegas Review-Journal and Moapa Valley Progress 15 days before the meetings.

Public Comment Availability

Comments, including names and addresses of respondents, will be available for public review at the mailing address shown in the ADDRESSES section during regular business hours, 8 a.m. to 4:30 p.m., Monday through Friday, except holidays. Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment--including your personal identifying information--may be made publicly available at any time.

Authority

This notice is published in accordance with 40 CFR 1501.7 of the Council of Environmental Quality regulations and 43 CFR 46.235 of the Department of the Interior Regulations implementing the procedural requirements of the NEPA (42 U.S.C. 4321 et seq.), and in accordance with the exercise of authority delegated to the Principal Deputy Assistant Secretary-Indian Affairs by part 209 of the Department Manual.

Tara Sweeney,
Assistant Secretary--Indian Affairs.
[FR Doc. 2020-09831 Filed 5-7-20; 8:45 am]
BILLING CODE 4337-15-P

Scoping Report Appendix E

Public Scoping Meeting Transcripts

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Southern Bighorn Solar Projects Environmental Impact Statement

Transcript of

Scoping Meeting

Volume I

May 27, 2020

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* * * * * *

SOUTHERN BIGHORN SOLAR PROJECTS ENVIRONMENTAL IMPACT STATEMENT PUBLIC SCOPING MEETING

* * * * * *

Held on Wednesday, May 27, 2020,
at 1:30 p.m.
via remote videoconference

Reported by: Kimberly A. Farkas, RPR, CCR #741
Job No. 40630

Wednesday, May 27, 2020
1:30 p.m.
* * * * * *

PATRICIA McCABE: I want to thank everybody for their patience. Once again, welcome to the Southern Bighorn Solar Project Environmental Impact Assessment first of the public scoping meetings. I'm going to turn the presentation over to Chip Lewis, regional environmental protection officer of the Bureau of Indian Affairs.

MR. LEWIS: Thank you, Tricia.

Thanks, everyone, for attending this meeting. This is the first ever virtual public scoping meeting for the Bureau of Indian Affairs. It's for the Southern Bighorn Solar Project. We have representatives from the project environmental team in attendance, as well as the project proponent and the Moapa Band of Paiutes. Next slide.

This type of meeting is relatively new to everyone so we want to go over the meeting protocol and provide some expectations for how we will proceed. First we will go through a presentation, which provides information on the proposed project. At the end of the presentation, we'll provide an opportunity to ask questions and/or provide comments on the project. We

request that all attendees mute their computers and/or phones until after the presentation just so potential background noise would not make it difficult for people to hear.

The next bullet on the slide with the call-in numbers is in case attendees have issues with their microphones or speakers. Like I mentioned, we will be saving all comments until the end of the presentation. You can type a comment into the chat box at any time during the presentation so you don't have to try to remember your comment until the end. You can also use the "raise hand" function. But, again, we will hold these until the end of the presentation.

If you have only joined us by phone today, hopefully, you were able to get a copy of the presentation. It is available on the project website, SouthernBighornSolar.com. As I go through the presentation, I will note the slide number for you to follow along.

We do have a court reporter attending the meeting today who will be documenting the entire presentation, as well as the questions and comments received. This is required so that we have documentation of the administrative record for this project.

And, lastly, in case you know people who want to attend but were unable to do so, a recording of the presentation will be posted on the project website for viewing at any time after the meeting.

Slide 3. I would like to acknowledge and thank some members of the Moapa Band of Paiutes Business Council who are attending this meeting today with us. I understand that Chairwoman Parry and Vice Chairman Anderson, will not be joining us due to a recent loss of a Moapa Band elder. We would like to take a brief moment of silence to offer condolences for the recent loss, as well as any recent losses felt throughout all communities from the COVID-19 virus.

(Moment of silence observed.)

MR. LEWIS: Thank you. Slide 4.

The Moapa Band of Paiute Indians have entered into two agreements with subsidiaries of 8minute Solar Energy to construct the Southern Bighorn Project. The BIA is tasked with the approval of the solar energy ground leases. In addition, the Bureau of Land Management is tasked with the review, approval, and issuance of rights-of-way for collector lines and existing access roads.

Regarding the land jurisdiction, the solar fields, some access roads, and part of the collector

lines will be on the Moapa River Indian Reservation. Some access roads and overhead collector lines will be located on reservation lands managed by the BLM. That land is a dedicated utility corridor. And some existing access roads to be used would be located on BLM land.

Slide 5. The proposed action is the review and approval of the lease that would result in the construction, operation, and maintenance and eventual decommissioning of the solar photovoltaic electricity generation and battery storage facility. This consists of two projects that would have a combined capacity of up to 400 megawatts of energy.

The projects will be constructed on up to 3,600 acres of land on the Moapa Reservation within a 6,000-acre study area. The proposed action would also include the installation of a battery energy storage system and the construction of access roads and overhead collector lines to tie the project into the regional electrical grid at a previously approved substation.

Slide 6. Here's a map that depicts the general location of the project. The Southern Bighorn Project is located on the Moapa Reservation in Clark County, Nevada, approximately 30 miles northeast of

6

Las Vegas.

Slide 7. This map shows the approximate 6,000-acre study area and the proposed collector lines connecting with an already approved substation. You can see the study areas on both sides of the existing Moapa Southern Paiute Solar Project. This figure also shows the preliminary boundary of the three separate solar arrays for the project, which also represents the 3,600-acre lease boundary. The larger study area allows the lease boundary a little freedom to move around so the projects can avoid environmentally sensitive areas or topographic features that might preclude construction.

Slide 8. The project serves three main purposes. Provide a long-term, viable economic revenue base and job opportunities for the Moapa Band and its members; assist Nevada to meet its renewable energy requirements; and allow the Moapa Band, in partnership with the applicants, to optimize the use of the lease area in a way that maximizes the potential economic benefits to the Band.

Slide 9. The solar field consists of the following components: Solar panels that are mounted on fixed tilt or single axis tracking systems; solar inverters that convert the direct current output DC

7

solar panel into alternating current; a battery energy storage system of up to 1,000-megawatt hours would be used to increase energy yield and efficiency, and improve system performance; electrical collection lines that would take the converted energy from the solar field and connect with the electrical grid; an operation and maintenance building; and fencing around the solar arrays.

Slide 10. Here is an example of the solar field and the battery storage system. You can see the underside of the solar panel will have a mechanism that allows them to be tilted towards the sun and thus maximize solar efficiency.

Slide 11. The project would require the approval of two ground leases between the Moapa Band and the applicants, issuance of rights-of-ways for the access roads and collector lines on reservation land managed by the BLM, and the issuance of rights-of-way for access roads on BLM land.

Slide 12. For this project, the BIA, in coordination with the cooperating agencies, will prepare an environmental impact statement to meet requirements under the National Environmental Policy Act. The EIS will provide an environmental analysis of the proposed action and any relevant alternatives which

8

will inform the BIA and the public about any potential environmental consequences of the projects.

Following the preparation and public review of the EIS, the BIA will generate a record of decision, which will either approve the project as proposed, approve the project with modifications, or deny the project.

Slide 13. During the preparation and review of the EIS, multiple agencies will be involved. The BIA will act as the lead agency for the preparation of EIS, and other agencies will be cooperating parties assisting in the EIS effort. This includes the Moapa Band, BLM, EPA, and the U.S. Fish and Wildlife Service.

Slide 14. This is a schedule, a proposed schedule anyway, for the major milestones associated with completion of the EIS. The notice of intent was published in the Federal Register on May 8, 2020. This started the public scoping process, which is where we are currently. Public scoping will end on June 8th, 2020. Any comments received during public scoping will be reviewed and used to help inform the analysis and development of potential alternatives in the EIS. Our goal is to have a draft EIS available for public review in October, 2020. And it will be available for a 45-day public comment period. During the public review

9

of the draft EIS, public meetings will be held to solicit comments. We don't know if those will be virtual or in person at this time.

The final EIS is scheduled to be published in December 2020 with a 30-day waiting period to follow. BIA will then prepare and publish a record of the decision.

Slide 15. We anticipate that the resources shown on this slide will require detailed analysis in EIS. These include biological resources, particularly threatened endangered species such as the Mojave Desert tortoise, cultural resources, Native American religious concerns, visual resources, water resources and socioeconomics.

Slide 16. You can provide comments on the project in several ways. You can provide a verbal comment at the end of this presentation. You can also submit comments via the chat box function. Comments can be submitted on the project website. The website includes a PDF of this presentation and will have a recording of this meeting for those on the phone or if you are unable to write down the contact information. The project website will be updated as the project continues and will include copies of the draft EIS, final EIS, and other pertinent project documents.

10

Lastly, you can send comments directly to me by mail or email at the address as shown. Please include your name, return address, and the caption "EIS Southern Bighorn Solar Project" on the first page of any written comments.

Slide 17. Now I would like to open up this meeting to questions and verbal comments. We will mute and unmute individuals as we go so there is not too much background noise. We tried a practice run-through and found it was difficult to hear anyone if there was too much going on in the background or if multiple people spoke at one time.

We will start with comments that came in during the presentation in the chat box. We'll read the comment, unmute the commenter. After that, we will go to the people who used the raise their hand. For those of you that have joined by phone only, we will go one by one and ask each of you individually if you have any comments or questions.

Just a reminder, this technology is new to us all so please bear with us and your fellow attendees, as we want to hear from everyone who has comments or questions. And let's go ahead and go down the list.

So it looks like we have no chat box questions or people who used the raise the hand

11

function. So we're going to go ahead and open it up to everyone right now. If you have a question, go ahead and speak up. If it looks like after you start knocking each other out, we will go ahead and mute everyone and go down the line and ask the individual phone callers one by one.

NICK YAMASHITA: So I'm with Moapa Valley Progress. Just a few questions regarding this project. One, it says here be bringing in specialists to determine the natural resources potential threat. We're wondering if that's with the EPA, those specialists, or with the BIA, or if you'll be bringing in specialists yourselves and paying outside specialists?

MR. LEWIS: Well, actually, Nick, it's all of the above. There will be specialists from the Bureau of Indian Affairs. We also have our cooperating agencies, like Bureau of Land Management and Environmental Protection Agency. They will be providing staff as cooperators. The Bureau of Indian Affairs has also hired Logan Simpson Design to help us with preparing the EIS. And that includes subcontractors like you can see on the screen there, Pat Golden, our forest biologist, and some other specialists especially related to cultural resources

12

that will be both doing the surveys and studies in the field and helping to prepare the EIS document itself.

NICK YAMASHITA: All right. Thank you.

MR. LEWIS: You're welcome. We just unmuted everybody. Does anybody have any questions? We're going to stay live for a little while. Anybody has a comment or has a question, feel free to both type them in the chat or go ahead and talk to us and have your verbal comment documented.

BARBARA NEARY: Hi. This is Barbara Neary with Geosyntec. I guess I have two questions. I was unable to hear most of the presentation until about slide 11, but that was my own technical difficulties.

I was just curious, of the sensitive resources that were listed, have any of those studies begun yet? I may not have captured that from the scheduled slide. Has field work for studies already begun?

MR. LEWIS: Yes. It happens to be just wrapping up. The spring desert tortoise survey season has been ongoing so tortoise surveys have been undertaken. I believe also at the same time vegetation was being documented. I believe cultural resource surveys have already been completed, and that report is in preparation. And the other parts of the EIS,

13

socioeconomics and some of those types of things, will be getting underway at the conclusion of the scoping period.

BARBARA NEARY: Thank you. My second question is has 8minute already selected then construction contractors or will that not happen until after the EIS process is completed?

MR. LEWIS: That's correct. It's very early on in the process and planning and with the environmental analysis. I can go ahead and turn it over to Mr. Luke Shillington with 8minute, and he can more properly answer your question.

BARBARA NEARY: Thank you.

LUKE SHILLINGTON: Thank you, Chip. Yes, we have not selected any contractor for this project yet. That won't occur until after the EIS has been completed.

BARBARA NEARY: Great. Thank you for confirming. That's all I have.

MR. LEWIS: Thank you very much.

And I do appreciate the folks that have asked questions did go ahead and identify themselves and who they represent. I neglected to request that that be done. So if you do have a question, please tell us your name and who you are representing so that it can

be recorded in our administrative record.

I want to thank everyone for participating today. I want to remind you we are having another public meeting tomorrow night at 5:30 p.m., both Arizona and Nevada time. You can join us then. We also, as advertised, are going to leave this meeting live until 3:00 p.m. That's what we advertised in the newspaper, I believe.

So we will stay live. We'll probably mute it unless we see other folks join on the call. And we will go ahead and solicit questions from the new attendees. So if you have anything to think of in the meantime, feel free, or if you want to join us tomorrow evening. Otherwise, thank you very much for attending.

(No further comments were offered.)

(Whereupon, the meeting was concluded at 3:00 p.m.)

* * * * *

CERTIFICATE OF REPORTER

STATE OF NEVADA)
) ss:
COUNTY OF CLARK)

I, Kimberly A. Farkas, a Certified Court Reporter licensed by the State of Nevada, do hereby certify: That I reported the meeting of the Southern Bighorn Solar Project, May 27, 2020, at 1:30 p.m. via remote videoconference.

That I thereafter transcribed my said stenographic notes into written form, and that the typewritten transcript is a complete, true and accurate transcription of my said stenographic notes.

I further certify that I am not a relative, employee or independent contractor of counsel or of any of the parties involved in the proceeding; nor a person financially interested in the proceeding.

IN WITNESS WHEREOF, I have set my hand in my office in the County of Clark, State of Nevada, this 10th day of June, 2020.

Kimberly A. Farkas, CCR NO. 741

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Southern Bighorn Solar Projects Environmental Impact Statement

Transcript of

Scoping Meeting

Volume I

May 28, 2020

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SOUTHERN BIGHORN SOLAR PROJECTS
ENVIRONMENTAL IMPACT STATEMENT
PUBLIC SCOPING MEETING

* * * * * *

Held on Thursday, May 28, 2020,
at 5:30 p.m.
via remote videoconference

Reported by: Kimberly A. Farkas, RPR, CCR #741
Job No. 40631

Thursday, May 28, 2020
5:30 p.m.
* * * * * *

PATRICIA McCABE: Good evening, everybody. I just want to thank you for joining the Southern Bighorn Solar Projects Environmental Impact Statement public scoping meeting number 2. And I'm going to turn the presentation over to Mr. Chip Lewis, Bureau of Indian Affairs, Western Region, Environmental Protection Officer.

MR. LEWIS: Thank you, Tricia, and thanks to everyone who has tuned in to our now second ever virtual public scoping meeting. So, hopefully, it will go okay and it will serve its purpose and we'll see how we do tonight.

This is the public scoping meeting for the Southern Bighorn Solar Projects. We have representatives from the project environmental team in attendance, as well as the project proponent and the Moapa Band of Paiutes.

This type of meeting is relatively new to everyone so we want to go over the meeting protocol and provide some expectations for how we will proceed. First we will go through the presentation, which provides information on the proposed project. At the

end of the presentation, we will provide an opportunity to ask questions and/or provide comments on the project.

We request that all attendees mute their computers and/or phones until after the presentation just so potential background noises do not make it difficult for people to hear.

The next bullet that you can see on the slide that has the call-in numbers is there in case attendees have issues with their microphones or speakers.

Like I just mentioned, we will be saving all of the comments until the end of the presentation. You can type a comment into the chat box at any time during the presentation so you don't have to try to remember your comment until the end. You can also use the "raise hand" function. And, again, though, we will hold those until the end.

If you've only joined us by phone today, hopefully, you were able to get a copy of the presentation. It is available on our project website, SouthernBighornSolar.com. As I go through the presentation, I will note the slide number for you to follow along in case that is the method you're using.

We have a court reporter attending the meeting today who will be documenting the entire

presentation, as well as the questions and comments received. If you do speak up at the end during the question and comment period, please state your name and who you are representing.

And, lastly, in case you know people who wanted to attend the meeting but were unable to do so, a recording of the presentation will be posted on the project website for viewing at any time after the meeting.

I would like to acknowledge and thank the members of the Moapa Band of Paiutes Business Council for attending this meeting today with us. I understand that Chairwoman Parry and Vice Chairman Anderson will not be joining us due to the recent loss of a Moapa Band elder. We would like to take a brief moment of silence offer our condolences, as well as any recent losses felt throughout all communities from the COVID-19 virus.

(Moment of silence observed.)

MR. LEWIS: Thank you. The Moapa Band of Paiute Indians have entered into agreements with two subsidiaries of 8minute Solar Energy to construct the Southern Bighorn Project. The BIA's end passed with the approval of two solar energy ground leases and associated agreements. In addition, the Bureau of Land

Management is tasked with the review, approval, and issuance of rights-of-way for collector lines and existing access roads.

Regarding that land jurisdiction, the solar fields, some of the access roads and collector lines would be on the Moapa River Indian Reservation. Some access roads and overhead collector lines will be located on the Reservation land that is managed by the BLM. That land is a designated utility corridor. And last, some existing access roads to be used will be located on BLM land.

Slide 5. Proposed action is review and approval of leases that would result in the construction, operation, and maintenance, eventual decommissioning of solar photovoltaic electricity generation and battery storage facility. This consists of two projects having a combined capacity of up to 400 megawatts of energy. The project will be constructed on up to 3,600 acres of land on the Reservation within a 6,000-acre study area. Proposed action would also include the installation of a battery energy storage system and the construction of access roads and overhead collector lines to tie the projects into the regional electrical grid at the previously approved Eagle Shadow Mountain Solar Project.

6

Slide 6. Here's a map that depicts the general location of the project. It is located on the Reservation in Clark County, Nevada, approximately 30 miles northeast of Las Vegas.

Slide 7. This map shows the approximate 6,000-acre study area and the proposed collector lines connecting with an already approved substation. You can see the study areas on both sides of the existing Moapa Southern Paiute Solar Project. This figure also shows the preliminary outline of the three separate solar arrays for the project. The larger study area allows the lease boundary a little freedom to move around so the project can avoid environmentally sensitive areas that might preclude construction.

Slide 8. The project serves three main purposes, to provide a long-term and viable economic revenue base and job opportunities for the Moapa Band and its members, to assist Nevada in meeting its renewable energy requirements, and to allow the Moapa Band, in partnership with the applicants, to optimize the use of the lease area in a way that maximizes the potential economic benefit to the Band.

Slide 9. The solar field would include the following components: Solar panels that are mounted on fixed tilt or single axis tracking systems; solar

7

inverters that convert the direct current output of the DC solar panels into alternating current; a battery energy storage system about 1,000-megawatt hours that would be used to increase energy yield and efficiency and improve system performance; electrical grid collection lines that take the converted energy from the solar field and connect it with the electrical grid; an operation and maintenance building; and finally, fencing around the solar arrays.

Slide 10. Here is an example of the solar field and battery storage system. You can see the underside of the solar panel will have a mechanism that allows them to be tilted towards the sun for maximized efficiency.

Slide 11. The project requires the approval of two ground leases between the Moapa Band and the applicant, issuance of rights-of-ways for the access roads and overhead collector lines on Reservation lands managed by the BLM, and the issuance of right-of-way for access roads on the BLM land.

Slide 12. For this project, the BIA, in coordination with the cooperating agencies, will prepare an environmental impact statement to meet requirements under the National Environmental Policy Act. The EIS will provide an environmental analysis of

8

the proposed action and any relevant alternatives which will inform the BIA and the public about any potential environmental consequences of the project.

Following the preparation of public review of EIS, the BIA will generate a record decision which will either approve the project as proposed, approve the project with modification, or deny the project.

Slide 13. During the preparation and review of EIS, multiple agencies will be involved. The BIA will act as a lead agency for the preparation of EIS, and other agencies will be cooperating parties assisting in EIS effort. This includes the Moapa Band, BLM, EPA, and the U.S. Fish and Wildlife Service.

Slide 14. This is our proposed schedule for major milestones associated with completion of EIS. The notice of intent was published in the Federal Register on May 8, 2020. This started the public scoping process, which is where we are currently. Public scoping will end on June 8th, 2020. Any comments received during the public scoping will be reviewed and used to help inform the analysis and the development of potential alternatives in the EIS.

Our goal is to have the draft EIS available for public review in October 2020 for a 45-day public comment period. During the public review of the draft

9

EIS, public meetings will be held to solicit comment on the document.

The final EIS is scheduled to be published in December 2020 with a 30-day waiting period following. BIA will then prepare and publish the record of decision.

Slide 15. We anticipate that the resources shown on this slide will require detailed analysis in EIS. It includes biological resources, principally threatened endangered species such as the Mojave Desert tortoise, also cultural resources, Native American religious concerns, visual resources, water resources, and socioeconomics.

Slide 16. You can provide comments on the project in several ways. You can provide a verbal comment at the end of this presentation. You can also submit a written comment via the chat box function. Comments can be submitted on the project website. The website includes a PDF of this presentation and will have a recording of this meeting for those on the phone or if you were unable to write down the contact information.

The project website will be updated as the project continues with copies of the draft EIS, final EIS, and other project documents. Lastly, you can send

comments directly to me by mail or email at the address shown. Please include your name, return address, and a caption EIS Southern Bighorn Solar Project on the first page of any written comments.

Slide 17. Now I would like to open up this meeting to questions and verbal comments. We will mute and unmute individuals as we go so there is not too much background noise. We did a practice run-through and found it was difficult to hear anyone if there was too much going on in the background or if multiple people spoke at one time.

We will start with the comments that came in during the presentation in the chat box. We will read the comment and unmute the commenter. After that, we will go to the people who used the "raise your hand" icon. Once we go through that list, for those of you that have joined by phone, we will go one by one and ask each of you individually if you have any comments or questions. Just a reminder, this technology is new to us all so please bear with us and your fellow attendees, as we want to hear from everyone that has comments or questions. Thank you.

All right. Thanks, everyone. I also want to go ahead and mention that Chairwoman Parry has joined us as well as Terry Bohl. That's wonderful. We're

happy you joined us, Chairwoman. If you have any remarks you would like to make or address this environmental team or any public joining us tonight, I would sure like you to do so at this time.

LAURA PARRY: Hello, everyone. This is Laura Parry, Chairman of the Moapa Band of Paiutes. We're excited to be a partner in this project and for future economic development. Solar is a good environmental resource and a power source for people who really need it. And I like the name, Southern Bighorn. I love it. Thank you.

MR. LEWIS: All right. Okay. It looks like we have nobody in the chat box and no one has raised their hand function. I think we can go ahead and open it up to anybody who would like to make a comment or have a question at this time. We'll go ahead and unmute.

PATRICIA McCABE: Just for the attendees, we have unmuted everybody so you should have capability to mute and unmute yourself. If you don't have that capability, if you could write a little note in the chat box and I will make sure we can unmute you.

MR. LEWIS: Okay. So it looks like we still have no questions or comments in the chat box and no one using the "raise the hand" function. We did have

it unmuted so folks can ask questions. We will stand by for as long as it takes, as long as we advertised to do so. You can go to the project website and get the presentation shortly after this meeting. We will also have it uploaded onto the website as well. But we're happy to stand by, entertain any questions if you think of any or if there's any further information you need, we'll be standing by live for as long as it takes. Thank you.

(Discussion held off the record.)

MR. LEWIS: All right, Terry, I can see that you did use the chat box and tell us that the sound was not working. So if you have anything in particular you want to say we can relate to the group, we can do that or if you had a question, you can certainly put in a question.

Thank you, Terry, we appreciate it. We appreciate all that you've done and with the council. Hopefully, everything will move on smooth and we'll be on target and get the project done as scheduled.

TERRY BOHL: I wanted to thank BIA and 8minute team. This has been a three-year project.

JASON MORETZ: Thank you, Terry. We appreciate your help in bringing these projects to fruition, and have enjoyed working with you and the

Moapa Band of Paiutes.

MR. SHILLINGTON: I second that. Sincere thanks to Terry and the Moapa Band of Paiutes. Thanks also to the BIA for all of your hard work advancing the NEPA process.

TERRY BOHL: The tribe has been and continues to promote clean energy to replace coal, and this is one more step in working with our partners in promoting clean energy. Several councils have worked on this project also, and many more will continue the work to be a clean energy tribe and neighbor.

(No further comments were offered.)

(Whereupon, the meeting was concluded at 7:00 p.m.)

* * * * *

CERTIFICATE OF REPORTER

STATE OF NEVADA)
) ss:
COUNTY OF CLARK)

I, Kimberly A. Farkas, a Certified Court Reporter licensed by the State of Nevada, do hereby certify: That I reported the meeting of the Southern Bighorn Solar Project, May 28, 2020, at 5:30 p.m.

That I thereafter transcribed my said stenographic notes into written form, and that the typewritten transcript is a complete, true and accurate transcription of my said stenographic notes.

I further certify that I am not a relative, employee or independent contractor of counsel or of any of the parties involved in the proceeding; nor a person financially interested in the proceeding.

IN WITNESS WHEREOF, I have set my hand in my office in the County of Clark, State of Nevada, this 10th day of June, 2020.

Kimberly A. Farkas, CCR NO. 741

Appendix B

Project Design Features and Best Management Practices

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Southern Bighorn Solar Projects

PROJECT DESIGN FEATURES AND BEST MANAGEMENT PRACTICES

Table B-1. Agency-required Best Management Practices

Agency-required Best Management Practices
BIOLOGICAL RESOURCES
The measures below to reduce effects on the desert tortoise during construction, operation, and maintenance have been included in the Biological Opinion (BO) for the SBSPs and would be required to be implemented (MEASURES WILL BE REVISED AS THE BO IS PROCESSED):
1. **Construction area flagging**. Work areas will be flagged prior to beginning construction activities, and disturbance will be confined to the work areas. A biological monitor will escort all survey crews onsite prior to construction. All survey crew vehicles will remain on existing roads and stay within the flagged areas to the maximum extent practicable. In cases where construction vehicles are required to go off existing roads, a biological monitor (on foot) will precede the vehicles. **2.** **Desert tortoise fencing**. Temporary tortoise-proof fencing will be installed around the boundary of the solar facilities. Biological monitors under supervision of an authorized biologist (approved by the U.S. Fish and Wildlife Service [USFWS]) will be present during fence installation to relocate all tortoises in harm's way to outside the work area. Additional clearance surveys and activities will be conducted after completion of the tortoise fence to ensure that no tortoises remain inside the fenced construction boundaries. Fence specifications will be consistent with those approved by the USFWS (2009). Tortoise guards will be placed at all road access points where tortoise-proof fencing is interrupted to exclude desert tortoises from the Project footprints. Gates or tortoise exclusion guards will be installed with minimal ground clearance and shall deter ingress by desert tortoises. The temporary tortoise-proof fencing will be removed once the Projects are commissioned, allowing tortoises to re-occupy the site during operations. During the tortoise active seasons, all new fences will be checked twice a day for the first two weeks after construction or the first two weeks after tortoises become active if fence construction occurs in the winter, including once each day immediately before temperatures reach lethal thresholds. After the first two weeks, all tortoise exclusion fencing will be inspected monthly during construction, quarterly for the life of the Projects or until the exclusion fencing is removed, and immediately following all major rainfall events. Any damage to the fence will be repaired within two days of observing the damage. **3.** **Field Contact Representative.** The BIA and Applicant will designate a Field Contact Representative (FCR) who will be responsible for overseeing compliance of the Terms and Conditions of the biological opinion. The FCR will be onsite during all active construction activities that could result in "take" of a desert tortoise. The FCR will have the authority to briefly halt activities that are in violation of the desert tortoise protective measures until the situation is remedied. **4.** **Authorized desert tortoise biologist.** All authorized desert tortoise biologists (and monitors) are agents of BIA and USFWS and will report directly to BIA, USFWS, BLM, and the Applicants concurrently regarding all compliance issues and take of desert tortoises; this includes all draft and final reports of non-compliance or take. Authorized desert tortoise biologists, monitors, and the FCR will be responsible for ensuring compliance with all conservation measures for the Projects as described in the biological opinion. Prior to starting construction, authorized biologist(s) will submit documentation of authorization from USFWS and approval from NDOW. Potential authorized desert tortoise biologists will submit their statement of qualifications to USFWS.

Agency-required Best Management Practices
An authorized desert tortoise biologist will record each observation of a desert tortoise handled in the tortoise monitoring reports. This information will be provided directly to BIA, USFWS, and BLM. Potential authorized desert tortoise biologists must submit their statement of qualifications to the USFWS Southern Nevada Fish and Wildlife Office in Las Vegas for approval, allowing a minimum of 30 days for USFWS response. The statement form is available in Chapter 3 of the Desert Tortoise Field Manual on the internet at: *https://www.fws.gov/nevada/desert_tortoise/dt/dt_manuals_forms.html* Authorized desert tortoise biologist requests in southern Nevada should be e-mailed to: ADTB_request@fws.gov
5. Biological monitoring. Under supervision of an authorized biologist, biological monitors will be present at all active construction locations (not including inside the solar fields after they have been fenced with desert tortoise fencing and clearance surveys have been completed). Desert tortoise monitors will provide oversight to ensure proper implementation of protective measures, record and report desert tortoises and tortoise sign observations in accordance with approved protocol, and report incidents of noncompliance in accordance with the biological opinion and other relevant permits. The biological monitor(s) will survey the construction area to ensure that no tortoises are in harm's way. If a tortoise is observed entering the construction zone, work in the immediate vicinity will cease until the tortoise moves out of the area. Tortoises found aboveground during construction activities will be moved offsite by an authorized biologist following the protocols described in the Desert Tortoise Translocation Plan.
6. Desert tortoise clearance surveys and translocation. After installation of tortoise fencing around the perimeter of the solar facilities and prior to surface-disturbing activities, biological monitors and the authorized desert tortoise biologists who supervise them will conduct a clearance survey to locate and remove all desert tortoises from harm's way including those areas to be disturbed, using techniques that provide full coverage of construction zones (USFWS 2009). No surface-disturbing activities shall begin until two consecutive surveys find no live tortoises. In sectors or zones where a live tortoise is found, surveys will be repeated until the two-pass standard is met. An authorized biologist will excavate burrows potentially containing desert tortoises located in the area to be disturbed with the goal of locating and removing all desert tortoises and desert tortoise eggs. Typical tortoise burrows have a characteristic shape with a flat bottom and arched top similar to a capital letter 'D' with the flat side down. Clearance will include evaluation of caliche caves and dens, as tortoises are known to shelter there. Caliche is a naturally occurring hardened cemented soil composed of calcium carbonate, gravel, sand, and silt. The practice of excavating every obvious tortoise burrow will not be done as it has shown to be ineffective and inefficient in locating tortoises; instead, all obvious tortoise burrows will be scoped for presence and possible extraction. 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 USFWS-approved guidance (USFWS 2019). If any active tortoise nests are encountered, the USFWS 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 will remain in place to allow for tortoise use during operations. Outside construction work areas, all potential desert tortoise burrows and pallets within 50 feet of the edge of the construction work area will be flagged. If a desert tortoise occupies a burrow during the less-active season, the tortoise may be temporarily penned or will be translocated following USFWS approval, contingent upon weather conditions and health assessment results. No stakes or flagging will be placed on the berm or in the opening of a desert tortoise burrow. Desert tortoise burrows will not be marked in a manner that facilitates poaching. Avoidance flagging will be designed to be easily distinguished from access route or other flagging, and will be designed in consultation with experienced construction personnel and authorized biologists. This flagging will be removed following construction completion. An authorized desert tortoise biologist or biological monitor will inspect areas to be backfilled immediately prior to backfilling. Burrows with the potential to be occupied by tortoises within the construction area will be searched for presence. In some cases, a fiber optic scope will be used to determine presence or absence within a deep burrow.

Agency-required Best Management Practices

A translocation plan following the 2020 guidance will be approved by USFWS prior to the start of construction (USFWS 2020). The plan identifies potentially suitable recipient locations, control site options, post-translocation densities, procedures for pre-disturbance clearance surveys and tortoise handling, as well as disease testing and post-translocation monitoring and reporting requirements. Tortoises found within 500 meters of the project boundary (fenceline) will be relocated outside of the nearest fence to a location that contains suitable habitat; tortoises found within the interior of the Project sites (>500 meters from a boundary fence) would be moved to temporary pens for the duration of construction and may be returned to the solar facility interior (as close to the original capture location as possible) as soon as construction activities are complete, unless alternative relocation procedures are identified through consultation with the USFWS.

BIA and the Applicant will have an authorized biologist relocate tortoises following the UFSWS-approved protocol (USFWS 2020) and according to the approved translocation plan. If USFWS releases a revised protocol for handling desert tortoises before initiation of Project activities, the revised protocol will be implemented. The relocation/translocation effort will adhere to the following procedures as well as those stipulated in the BO Terms and Conditions:

Tortoises found within the Project area will be relocated outside of the ROW and lease areas to an area of suitable habitat as directed by USFWS. Translocation will follow installation of exclusionary tortoise fence, as determined in coordination with the agencies. Translocation events will occur to specific locations outlined in the approved Project-specific translocation review packages (TRPs) and disposition plans, based on construction and translocation timing considerations for each tortoise. The Projects will employ two strategies for translocating tortoises, depending on the initial capture location of each animal:

a. Short-distance Translocations: Tortoises found within 500 meters of the solar site fencelines or within the collector line construction area will be relocated to areas immediately outside of the Projects' temporary exclusion fencing or outside of harm's way in the vicinity of the collector line ROWs. Following the completion of construction, the exclusion fencing will be removed, the permanent site fencing will be permeable to desert tortoises (except within the high-voltage substation areas), and the existing vegetation on the Project sites is expected to be left relatively intact during construction and operation of the Projects. Therefore, the short-distance translocation strategy is designed to allow tortoises to freely re-occupy the sites following construction.

b. Interior Solar Field Translocation: Tortoises found in the interior of the solar site fenceline (>500 meters from the exclusion fence) would be moved to a temporary holding pen, located near the Projects and held during construction. Because vegetation would be crushed and/or trimmed where feasible during construction, these tortoises may be returned to the interior of the completed project as close to their original capture site as possible. Penned tortoises may be translocated to a different area on a case-by-case basis as determined in consultation with USFWS.

- An authorized biologist will perform health assessments and draw blood samples for each tortoise relocated. Blood testing will determine whether any desert tortoise suffers from upper respiratory tract disease (URTD).
- Tortoises will be temporarily tagged with combination global positioning system (GPS)/radio-transmitter tags, so that the tortoise can be retrieved and handled as directed by the USFWS if the results of blood work indicate that a tortoise is infected with URTD.
- When determining a release location for an individual tortoise, release site preference will be to find a like-for-like shelter resource. Every attempt will be made to find similar cover sites and habitat to that at the location of each individual found on the Project sites, otherwise all translocatees shall be released at the most appropriate and available unoccupied shelter sites (e.g., soil burrows, caliche caves, rock caves, etc.) or under the shade of a shrub. Because of the impermanent nature of soil burrows and cave availability, prior to submitting the final Disposition Plans and determining exact areas of release, potential release sites will be re-investigated for existing burrows and caliche or rock caves that can be used for shelter sites. Known active and inactive tortoise burrows discovered during the surveys will be re-investigated for this purpose. If

insufficient shelter sites exist in an area to be used for translocation, the Applicants shall coordinate with the agencies to determine the most appropriate course of action, such as reviewing an alternate release site, modifying/improving existing burrows and partial burrows, or artificially creating burrows per USFWS protocols prior to translocation. The number of artificial burrows per translocated tortoise will be included in the TRPs/Disposition Plans, as feasible, and may include more than one burrow per tortoise to increase translocation success (i.e., tortoises remaining within their release locations). The disposition of relocated tortoises will be evaluated and reported on following the reporting requirements of the biological opinion.

- If a tortoise voids its bladder while being handled, it will be given the opportunity to rehydrate before release. Tortoises will be offered fluids by soaking in a shallow bath or an authorized desert tortoise biologist will administer nasal-oral fluid or injectable epicoelomic fluids. Any tortoise hydration support beyond offering water or shallow soaking will only be provided by an authorized biologist who has received advanced training in health assessments and been specifically approved by USFWS for these procedures.

7. **Integrated Weed Management Plan**. Prior to construction, an Integrated Weed Management Plan will be developed that includes measures designed to reduce the propagation and spread of designated noxious weeds, undesirable plants, and invasive plant species, or as determined by the cooperating or reviewing agencies (BIA, BLM, NDOW, etc.). Measures in the plan will include but are not limited to the following:
    - Areas with current weeds will be mapped. Topsoil with the presence of weeds will not be salvaged and reused elsewhere in the Projects. The topsoil from such areas will be disposed of properly.
    - Inspect heavy equipment for weed seeds before they enter the Project area. Require that such equipment be cleaned first to remove weed seeds before being allowed entry. Clean equipment that has been used in weed infested areas before moving it to another area.
    - Any straw or hay wattles used for erosion control must be certified weed free.
8. **Worker Environmental Awareness Program (WEAP).** A WEAP will be presented to all personnel onsite during construction. This program will contain information concerning the biology and distribution of the desert tortoise, desert tortoise activity patterns, and its legal status and occurrence in the proposed Project area. The program will also discuss the definition of "take" and its associated penalties, measures designed to minimize the effects of construction activities, the means by which employees limit impacts, and reporting requirements to be implemented when tortoises are encountered. Personnel will be instructed to check under vehicles before moving them as tortoises often seek shelter under parked vehicles. Personnel will also be instructed on the required procedures if a desert tortoise is encountered within the proposed Project area. WEAP training will be mandatory, as such, workers will be required to sign in and wear a sticker on their hardhat to signify that they have received the training and agree to comply.
9. **Access roads.** Construction access will be limited to the Project area and established access roads. Vehicle travel off established internal site access roads will be minimized as practicable.
10. **Speed limits and signage.** Until the desert tortoise fence has been constructed, a speed limit of 15 miles per hour (mph) will be maintained during the periods of highest tortoise activity (March 1 through November 1) and a limit of 25 mph during periods of lower tortoise activity. This will reduce dust and allow for observation of tortoises in the road. Speed limit and caution signs will be installed along access roads and service roads. After the tortoise-proof fence is installed and the tortoise clearance surveys are complete, speed limits within the fenced and cleared areas will be established by the construction contractor based on surface conditions and safety considerations and remain with limits established by the USFWS in the biological opinion.
11. **Trash and litter control.** Trash and food items will be disposed properly in predator proof containers with resealing lids. Trash will be emptied and removed from the Project sites on a periodic basis as they become full. Trash removal reduces the attractiveness of the area to opportunistic predators such as ravens, coyotes, and foxes. Measures to reduce the subsidy of ravens and other avian predators/scavengers are discussed in greater detail in the Raven Control Plan (**Appendix I** of the DEIS).

Agency-required Best Management Practices

12. **Raptor control.** The applicant will inspect structures annually for nesting ravens and other predatory birds and report observations of nests to USFWS and BIA. Transmission line support structures and other facility structures will be designed to discourage their use by raptors for perching or nesting (e.g., by use of anti-perching devices) in accordance with the most current Avian Power Line Interaction Committee (APLIC) guidelines (APLIC 2006, 2012). In addition to increasing desert tortoise protection, following these guidelines during overhead collector line construction will reduce the possibility of avian electrocution and other hazards.
13. **Overnight hazards.** No overnight hazards to desert tortoises (e.g., auger holes, trenches, pits, or other steep-sided depressions) will be left unfenced or uncovered; such hazards will be eliminated each day prior to the work crew and monitoring biologists leaving the site. All excavations will be inspected for trapped desert tortoises at the beginning, middle, and end of the workday, at a minimum, but will also be continuously monitored by a biological monitor or authorized biologist. Should a tortoise become entrapped, the authorized biologist will remove it immediately.
14. **Blasting.** If blasting is required in desert tortoise habitat, detonation will only occur after the area has been surveyed and cleared by an authorized desert tortoise biologist no more than 24 hours prior. A 200-foot radius buffer area around the blasting site will be surveyed and all desert tortoises above ground within this 200-foot buffer of the blasting site will be moved 500 feet from the blasting site, placed in unoccupied burrows, and temporarily penned to prevent tortoises that have been temporarily relocated from returning to the site. Tortoises located outside of the immediate blast zone and that are within burrows will be left in their burrows. All burrows, regardless of occupied status, will be stuffed with newspapers, flagged, and location recorded using a global positioning system (GPS) unit. Immediately after blasting, newspaper and flagging will be removed. If a burrow or cover site has collapsed that could be occupied, it will be excavated to ensure that no tortoises have been buried and are in danger of suffocation. Tortoises removed from the blast zone will be returned to their burrow if it is intact or placed in a similar unoccupied or constructed burrow.
15. **Penning.** Tortoises may be held in quarantine (e.g., if temperatures do not allow for translocation or if tortoises do not pass the health assessment) for a maximum of 12 months. Previously constructed and approved enclosure pens are present adjacent to the Project sites and will be used if any quarantine is necessary. Quarantine is not the preferred option for tortoises to be translocated and will only be used as necessary in coordination with USFWS. This penning is not the same as the temporary penning described in the blasting measure.
16. **Stormwater Pollution Prevention Plan.** The Applicants will oversee the establishment and functionality of sediment control devices as outlined in the stormwater pollution prevention plans.
17. **Tortoise Encounters During Construction.** If a tortoise is injured as a direct or indirect result of Project construction activities, it shall be immediately transported to a veterinarian or wildlife rehabilitation facility and reported within 24 hours or the next workday to USFWS. Any Project construction-related activity that may endanger a desert tortoise shall cease in the immediate vicinity of a desert tortoise if encountered on the Project sites. Project construction activities may resume after an authorized biologist removes the desert tortoise from danger or after the desert tortoise has moved to a safe area.
18. **Gila Monster Reporting**. The Gila monster (*Heloderma suspectum*) is a difficult to detect and relatively rare species that may occur within the Project area. Nevada Department of Wildlife (NDOW) requests that they be notified whenever a Gila monster is encountered or observed to support ongoing Gila monster management studies. Refer to **Appendix L** for more information on this species habitat, distribution, and identification and details on how to report observed or encountered Gila monster to NDOW. This information and protocols will be included in the Worker Environmental Awareness Plan and associated training.

OPERATIONS AND MAINTENANCE MINIMIZATION MEASURES

The following minimization measures will be implemented during O&M of the Proposed Actions to reduce effects on the desert tortoise and other species:

Agency-required Best Management Practices

1. **WEAP Training.** WEAP training will be required for all O&M staff for the duration of the Projects. In addition to an overview of minimization measures, the training will include specific BMPs designed to reduce effects to the desert tortoise. All Project personnel will check under vehicles or equipment before moving them. If Project personnel encounter a desert tortoise, they will avoid the tortoise. The desert tortoise will be allowed to move a safe distance away prior to moving the vehicle.
2. **Biological Monitoring.** A biological monitor(s) will be present during ground-disturbing and/or off-road O&M activities outside of the fenced solar facilities to ensure that no tortoises are in harm's way. Tortoises found aboveground during O&M activities will be avoided or moved by an authorized biologist if necessary. A biological monitor will flag the boundaries of areas where activities will need to be restricted to protect tortoises and their habitat. Restricted areas will be monitored to ensure their protection during maintenance.
3. **Speed Limits.** Speed limits within the Project area, along transmission line routes, and access roads will be restricted to less than 25 mph during O&M. Speed limits in the solar facilities will be restricted to 15 mph during O&M.
4. **Trash and Litter Control and other Predator Deterrents.** Trash and food items will be disposed properly in predator proof containers with resealing lids. Trash will be emptied and removed from the Project sites on a periodic basis as they become full. Trash removal reduces the attractiveness of the area to opportunistic predators such as ravens, coyotes, and foxes. To reduce attractants for birds, open containers that may collect rainwater will be removed or stored in a secure or covered location.
5. **Gila Monster Reporting**. The Gila monster (*Heloderma suspectum*) is a difficult to detect and relatively rare species that may occur within the Project area. Nevada Department of Wildlife (NDOW) requests that they be notified whenever a Gila monster is encountered or observed to support ongoing Gila monster management studies. Information about Gila monster habitat, distribution, and identification will be included in the Worker Environmental Awareness Plan and associated training.

DECOMMISSIONING MINIMIZATION MEASURES

The same minimization measures used for construction will be used for decommissioning.

COMPENSATORY MITIGATION

The applicant will pay the following required compensatory mitigation:

1. **Habitat Compensation.** Prior to surface disturbance activities within desert tortoise habitat, the Project proponents will set aside a one-time remuneration fee (per acre of proposed disturbance) to be used to fulfill the monitoring obligations in the BO. The remuneration fees will be set aside as directed by USFWS in the BO. The compensation for habitat loss under Section 7 of the Endangered Species Act (ESA) is an annually adjusted rate, currently $923/acre (subject to change annually on March 1).

PUBLIC HEALTH AND SAFETY

The Projects will incorporate the following measures to reduce potential worker exposure to the *Coccidioides immitis* fungus that can cause Valley Fever:

- Include training for workers and supervisors on the potential presence of Valley Fever spores, methods to minimize exposure, and how to recognize symptoms.
- Limit workers' exposure to outdoor dust in disease-endemic areas by (1) providing air-conditioned cabs for vehicles that generate dust and making sure workers keep windows and vents closed, (2) suspending work during heavy winds, and (3) directing workers to remove dusty clothing after fieldwork and store in closed plastic bags until washed.
- When exposure to dust is unavoidable, provide approved respiratory protection to filter particles.

Table B-2. Applicant-proposed Design Features and Best Management Practices

Applicant-proposed Design Features and Best Management Practices (BMPs)
SOILS / EROSION
Grading on the solar site will be minimized to only those areas where necessary to meet the construction and operational requirements of the Projects.
Construction and operational activities will be conducted in compliance with a Stormwater Pollution Prevention Plan (SWPPP) that will include best management practices (BMPs) and other erosion-control measures designed to minimize soil erosion and limit sheet flow and downstream sedimentation. The SWPPP will also incorporate adaptive management actions if erosion and sedimentation control measures are found to be insufficient to control surface water at the site.
To minimize wind erosion, all construction activities shall comply with the Dust Abatement Plans that will be developed and implemented for the proposed Projects, as necessary.
Site Restoration Plans will be implemented as needed to limit impacts to temporary disturbance areas as much as practicable.
HYDROLOGY / WATER QUALITY
The site drainage plans will be designed to maintain existing drainage patterns and control the rate and amount of surface water runoff.
Final site drainage plans will be completed and submitted for approval prior to construction and would demonstrate that downstream flows would not be adversely impacted as a result of changes to natural washes from proposed grading and drainage management measures.
The paths for all stormwater flows will be identified and modeled as part of the final site drainage plans.
The number of drainage crossings will be minimized to the extent possible and each will be designed to accommodate adequate flow.
Post-storm monitoring of erosion and sedimentation will be conducted during construction. If localized gullies were to develop that result in increased rates of erosion and sedimentation, repairs will be made and erosion and sedimentation control measures will be updated.
All large ancillary facilities (e.g., O&M building) will be located outside of drainages. Some PV supports could be placed within ungraded drainages where technically feasible.
Spill Prevention and Emergency Response Plans will be developed and implemented during construction, O&M, and decommissioning of the proposed Projects. Adequately sized secondary spill containment will be incorporated around transformers to provide proper capture and control measures for potential leaks. The plans will also describe procedures for hazardous material spill prevention and clean-up measures, in the event of a spill.
AIR QUALITY
The area of grading and vegetation removal will be limited to only that area required for construction and operation of the Projects.
Dust Abatement Plans will be implemented, as applicable, to minimize fugitive dust emissions during ground-disturbing activities.
Vehicular speeds on unpaved roads will be limited to 25 miles per hour (MPH).
Grading operations will be phased where appropriate to limit the amount of disturbance at any one time, and water will be used for stabilization of disturbed surfaces under windy conditions (forecast or actual wind conditions of approximately 25 MPH or greater).

Applicant-proposed Design Features and Best Management Practices (BMPs)
Water will be applied to disturbed areas to control dust and facilitate soil compaction, where necessary. Water will be applied using water trucks and application rates would be monitored to prevent runoff and ponding. Approved palliatives will be used to control dust as required.
Exposed stockpiled material areas will be covered and excavation and grading will be suspended during windy conditions (forecast or actual wind conditions of approximately 25 MPH or greater).
During periods of inactivity, open storage piles and disturbed areas will be stabilized by covering and/or applying water and/or an organic dust palliative to form a crust.
All trucks hauling soil and other loose material will be covered or at least 2 feet of freeboard will be maintained.
All paved roads will be kept clean of objectionable amounts of mud, dirt, or debris, as necessary. Gravel or other similar material will be used where unpaved access roads intersect paved roadways to prevent mud and dirt track-out.
Traffic Management Plans will be finalized and implemented to minimize congestion on local roads and maintain traffic flow.
Unnecessary idling of equipment will be limited.
BIOLOGICAL RESOURCES
The Applicants will implement controls at entry locations to facilitate weed management and invasive species control in order to minimize infestation of the Project sites from outside sources. Trucks and other large equipment will be checked before entering the site, and any attached mud, seeds, and/or plant matter will be removed.
To avoid attracting prey and predators, garbage will be placed in approved containers with lids and removed promptly when full. Open containers that may collect rainwater will also be removed or stored in a secure or covered location so as not to attract birds.
All work area boundaries will be conspicuously staked, flagged, or otherwise marked to minimize surface disturbance activities. All workers, equipment, vehicles, and construction materials shall remain within the ROW, existing roads, and other designated work areas. Staging areas will be located in previously disturbed areas whenever possible.
All overhead collector line structures will be designed to be avian-safe in accordance with the *Suggested Practices for Avian Protection on Power Lines: the State of the Art in 2006* (APLIC 2006) and *Reducing Avian Collisions with Power Lines* by the U.S. Fish and Wildlife Service (USFWS) and APLIC (2012).
If construction activities are scheduled to commence during the breeding season for western burrowing owls (February 1 through August 31), a qualified biologist will conduct pre-construction surveys within suitable habitat for western burrowing owls no more than 30 days prior to construction. All areas within 250 feet of ground-disturbing activities will be surveyed per USFWS 2007 burrowing owl guidance.
Lighting will be designed to provide the minimum illumination needed to achieve O&M objectives and not emit excessive light to the night sky by installing light absorbing shields on top of all light fixtures and by focusing desired light in a downward direction.
Decommissioning Plans will be finalized and provided to the Moapa Band, BIA, and BLM which address the removal of Project facilities, respective of their relevant management agency. These plans will be submitted for approval at least six months prior to commencement of site closure activities.
Potential closure activities could include re-grading and restoration of original site contours and re-vegetation of areas disturbed by closure activities in accordance with the Site Restoration Plan. Revegetation seed mixes will be composed of agency-approved native plant species.
Completion of a Worker Environmental Awareness Plan (WEAP) and training will be required for all construction, maintenance, and operations staff for the duration of the Projects. In addition to an overview of

Applicant-proposed Design Features and Best Management Practices (BMPs)
minimization measures for all biological resources, the training will include specific BMPs designed to reduce effects to the Mojave desert tortoise.
Prior to construction, temporary tortoise-proof fencing will be installed around the boundary of the solar facilities. Biological monitors or biologists approved to handle and relocate tortoises will be present during fence installation to relocate all tortoises in harm's way to outside the solar facilities.
Fence specifications will be agreed to in consultation with USFWS. Tortoise guards will be placed at all road access points where temporary desert tortoise-proof fencing is interrupted to exclude desert tortoises from the Project footprints during construction. Gates or tortoise exclusion guards will be installed with minimal ground clearance and shall deter ingress by desert tortoises. Monitoring will include regular removal of trash and sediment accumulation and restoration of minimal ground clearance between the ground and the bottom of the fence, including re-covering the subsurface portion of the fence if exposed.
All temporary desert tortoise fencing will be inspected monthly during periods of high tortoise activity (April 1–May 31 and September 1–October 31).
The Applicants will implement a Raven Control Plan (BLM 2014) to be provided to the BLM, BIA, and the Moapa Band. The Applicants will inspect overhead collector line structures annually for nesting ravens and other predatory birds and report observations of nests to the BLM and BIA.
No overnight hazards to desert tortoises (e.g., auger holes, trenches, pits, or other steep-sided depressions) will be left unfenced or uncovered; such hazards will be eliminated each day prior to the work crew and monitoring biologists leaving the site. All excavations will be inspected for trapped desert tortoises at the beginning, middle, and end of the workday, at a minimum, but will also be continuously monitored by a biological monitor or authorized biologist for work that occurs outside of the temporary desert tortoise exclusion fence.
CULTURAL RESOURCES
Should any unrecorded cultural resources be discovered during construction, all activities within the immediate area of discovery would cease. The Chairman of the Moapa Tribal Council, or his or her designated representative, and the BIA Regional Archeologist shall be notified immediately and, consulting with BLM and SHPO as appropriate, will make arrangements to assess the nature of discovered cultural resources and, if feasible, avoid the resources to the fullest extent practicable. If avoidance is not possible, the Applicants will minimize and mitigate any damages to any unanticipated discoveries before construction would be allowed resume in the immediate vicinity of the find/discovery.
A Memorandum of Agreement (MOA) between the Band, BIA, BLM, and SHPO will be required to define the steps that shall be taken to lessen, resolve, and/or mitigate the effects to cultural resources that may be adversely affected by the project.
TRANSPORTATION
Traffic Management Plans will be finalized and approved by the Moapa Band and BIA that identify BMPs to minimize construction-related traffic impacts.
Deliveries of materials will be scheduled for off-peak hours, when practical, to reduce effects during periods of peak traffic.
Truck traffic will be phased throughout construction, as much as practical.
Carpooling or mass transportation options for construction workers will be encouraged.
Before construction, the Applicants and agency representatives will document the pre-construction condition of access routes, noting any existing damage. After construction, any damage to public roads will be repaired to the road's pre-construction condition, as determined by the agency representatives.

Applicant-proposed Design Features and Best Management Practices (BMPs)
PUBLIC HEALTH AND SAFETY
The Projects will be designed in accordance with all applicable federal and industrial standards including the American Society of Mechanical Engineers (ASME), National Electrical Safety Code (NESC), International Energy Conservation Code (IECC), International Building Code (IBC), Uniform Plumbing Code (UPC), Uniform Mechanical Code (UMC), the National Fire Protection Association (NFPA) standards, and Occupational Safety and Health Administration (OSHA) regulations.
All employees and contractors will be required to adhere to appropriate Health and Safety Program and Spill Prevention and Emergency Response Plans. All contractors will be required to maintain and carry health and safety materials including the Safety Data Sheets (SDSs) for hazardous materials used onsite.
Spill Prevention and Emergency Response Plans will be developed and implemented based on the results of comprehensive facility hazard analyses.
The Spill Prevention and Emergency Response Plans will provide procedures for the storage, transportation, and handling of wastes with an emphasis on the recycling of wastes where possible.
The Applicants will coordinate with the holders of all existing ROWs that would be crossed or paralleled by the Project ROWs (collector lines and access roads) to minimize encroachment conflicts and possible effects to existing transmission lines and pipelines.
The Applicants will prepare Fire Management Plans for each Project prior to construction. The Fire Management Plans will include information on fire prevention, fire protection and suppression, emergency contact information, and training during construction, O&M, and decommissioning of the Projects. The Fire Management Plans will also address safety and fire prevention for the battery energy storage systems for the Projects.
The Projects will incorporate the following measures to reduce potential worker exposure to the *Coccidioides immitis* fungus that can cause Valley Fever: • Include training for workers and supervisors on the potential presence of Valley Fever spores, methods to minimize exposure, and how to recognize symptoms • Limit workers' exposure to outdoor dust in disease-endemic areas by (1) providing air-conditioned cabs for vehicles that generate dust and making sure workers keep windows and vents closed, (2) suspending work during heavy winds, and (3) directing them to remove dusty clothing after fieldwork and store in closed plastic bags until washed. • When exposure to dust is unavoidable, provide approved respiratory protection to filter particles.
VISUAL RESOURCES
Integrate the PV solar panel blocks and other site design elements with the surrounding landscape to the extent practicable, including minimizing the profile of the ancillary structures, burial of cables, prohibition of commercial symbols, and lighting.
Where feasible, non-reflective paints and coatings should be used on visible ancillary structures and other equipment to reduce reflection and glare. Visible ancillary structures and other equipment should be painted before or immediately after installation. Uncoated galvanized metallic surfaces should be avoided because they may create a stronger visual contrast.
Colors for paints, stains, coatings, and other surface color treatments to be used on structures should be selected to be compatible with the local environment.

Applicant-proposed Design Features and Best Management Practices (BMPs)
Materials and surface treatments for structures and roads should repeat and/or blend with the existing form, line, color, and texture of the surrounding landscape. For example, if the Projects will be viewed against an earthen or other non-sky background, appropriately colored materials should be selected to help blend structures with the Projects' backdrop. Where appropriate, roads should be surfaced with material compatible in color with the local environment.
Construction and permanent lighting should be mounted and directed to focus light only on the intended area, and to avoid light spill and offsite light trespass. Lights pointing upward or horizontally should be avoided.

REFERENCES

Avian Power Line Interaction Committee (APLIC). 2006. *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006*. Edison Electric Institute, APLIC, and the California Energy Commission, Washington, D.C. and Sacramento, California.

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U.S. Fish and Wildlife Service (USFWS). *Burrowing Owl Project Clearance Protocol.* Arizona Burrowing Owl Working Group. July 30, 2007. Accessed December 2020 at https://www.fws.gov/southwest/es/arizona/Documents/SpeciesDocs/Burrowing/BUOW%20Project%20Clearance%20Protocol.20070730.pdf.

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_____. 2020. *Translocation of Mojave Desert Tortoises from Project Sites: Plan Development Guidance.* Revised June, 2020. Accessed December 2020 at https://www.fws.gov/nevada/desert_tortoise/documents/reports/2020/RevisedUSFWSDTTranslocationGuidance20200603.pdf.

Appendix C

Plan of Development

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Southern Bighorn Solar Collector Lines and Access Roads

Plan of Development

Submitted to:

Bureau of Land Management
Las Vegas Field Office
4701 North Torrey Pines Drive
Las Vegas, NV 89130

Submitted by:

Southern Bighorn Solar Project

300MS 8me LLC

August 2020

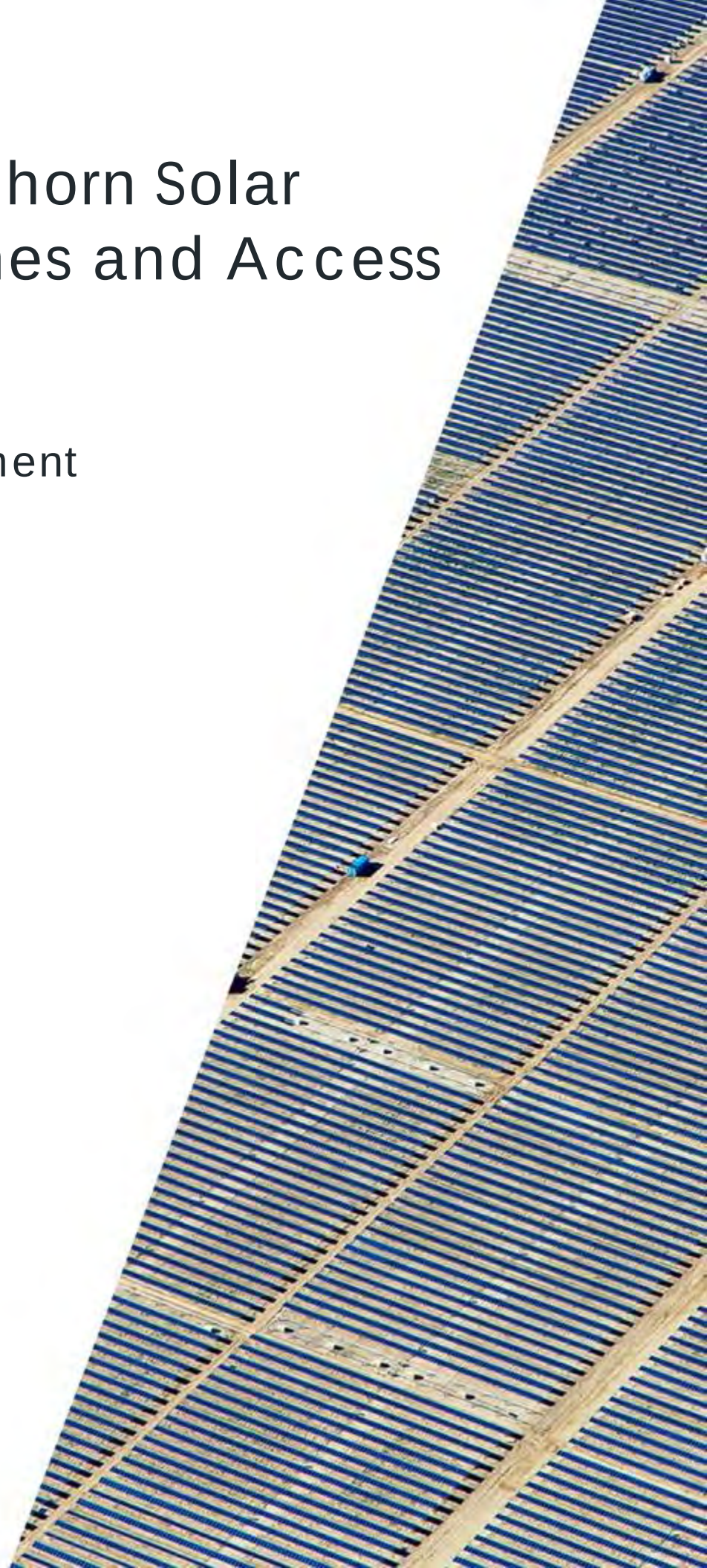

TABLE OF CONTENTS

OVERVIEW

300MS 8me LLC (the Applicant) proposes to construct and operate electrical collector lines that would be partially located on lands administered by the Bureau of Land Management (BLM). In addition, the Applicant plans to utilize the approved ESM gen-tie and existing access roads located on BLM-managed lands to provide access. Together, the new collector lines and use of the approved ESM gen-tie and existing access roads are the Proposed Project.

The collector lines would deliver power from the proposed Southern Bighorn Solar (SBS) Project located in Clark County, Nevada (**Figure 1**). The proposed collector lines would cross lands held in trust by the Bureau of Indian Affairs (BIA) for the Moapa Band of Paiutes (MBOP) and lands on the Moapa River Indian Reservation (Reservation) but within a designated utility corridor administered by the BLM. The collector lines would interconnect the up to 300 megawatt alternating current (MWac) photovoltaic (PV) SBS electric generation facility located on the Reservation both north and south of the existing Moapa Southern Paiute Solar Project. This interconnection to the regional grid would be accomplished via a connection to the substation on the approved Eagle Shadow Mountain Solar Project (ESMSP) site and the use of the approved ESM gen-tie line which interconnects to the NV Energy Reid Gardner Substation. The proposed collector lines would be designed to accommodate transmission of energy generated by the SBS Project.

The Proposed Project would involve construction, operation, and eventual decommissioning of multiple 34.5 kilovolt (kV) lines that would run northeastward and southwestward on tribal lands from the two separate solar field areas that make up the SBS Project. Where these lines converge, they would turn northwest to perpendicularly cross the designated utility corridor managed by BLM to the ESMSP site substation on tribal land. These lines are proposed to be built primarily underground but could be built either above or below ground.

From the ESMSP substation, the electricity generated by the SBS Project would be transmitted to the existing Reid-Gardner Substation via the approved ESMSP gen-tie line. The ROW for this approved gen-tie line is included as part of the SBS Project.

The existing access roads that would be used to provide access to the SBS are located both on federal lands and lands on the Reservation but within the designated utility corridor managed by BLM. From these existing roads, proposed new access roads would be built on MBOP lands to each solar field.

The collector lines would require a BLM ROW about 1.05 miles in length. The proposed ROW for the collector lines would be between 50 and 80 feet wide. The entire proposed BLM-managed ROW for these collector lines is within the designated utility corridor (Moapa Corridor, P.L. 96-491), which currently includes at least 11 BLM-authorized linear ROWs that would each be crossed by the Proposed Project (Table 1). All portions of the new collector lines on lands administered by BLM are proposed to be constructed underground.

Table 1– Authorized Rights-of-Way within BLM Moapa Utility Corridor

Serial No.	Proponent/Holder	Project	ROW Width
NVN 082385	Holly Energy Partners	UNEV Pipeline	50’
NVN 042581	Kern River Gas Transmission Co	Natural Gas Pipeline	75’
NVN 089176	K-Road Moapa Solar LLC	500 kV Transmission Line	Varies – 100’ – 200’
NVN 091072	K-Road Moapa Solar LLC	Road and Drainage	27’
NVN 010683	Los Angeles Department of Water and Power	500 kV Transmission Line	Varies – 200’ – 400’
NVN 004790	LADWP / BOR / Nevada Energy	Navajo - McCullough 550 kV	200’
NVN 039815	NV Energy	Pecos - Harrisburg 345 kV Transmission Line	Varies – 150’ – 330’
NVN 0061985	NV Energy	230 kV Transmission Line	Varies – 100’ – 230’
NVN 0067348	NV Energy	230 kV Transmission Line	100’
NVN 091614	Overton Power District	Arrow Canyon Powerline	50’
NVN 086732	TransWest Express LLC	600 / 500 kV Transmission Line	Varies – 200’ – 300’
NVN 97443 NVN 97443-MT	325MK 8me LLC	230-kV Transmission Line	Existing Roads – Varies. Gen-Tie ROW – 75’

Applicant’s Purpose and Need

The purpose of the proposed collector lines is to facilitate transmission of the energy produced at the SBS Project to the regional electrical grid and provide access to the Project site. The need for the Proposed Project is to:

1. Provide a means of conveying up to 300 MWac of renewable energy to the electric grid to meet increasing demand for in-state generation;
2. To complement the Applicant’s dedication to environmental stewardship through environmentally sensitive project siting;
3. To assist the Moapa Band of Paiutes by promoting economic development and bring living-wage jobs to the region throughout the life of the Proposed Project.

Project Location

The SBS Project’s energy generation facilities would be located entirely on Reservation lands in Clark County, in two locations both south and north of the existing Moapa Southern Paiute solar facility. The Proposed Project (i.e., collector lines, approved gen-tie, and existing access roads) would be located on a combination of MBOP lands held in trust by the BIA and on lands administered by the BLM (**Figure 1**). The legal description of the ROWs on BLM are described in **Appendix A**.

Origin and Destination Routing

The proposed collector lines would originate at each of the two components of the SBS Project on lands held in trust by the BIA for the MBOP. From the southern portion of the SBS Project, the collector lines would leave the solar site proceeding northeastward on MBOP lands adjacent to the BLM-administered Moapa Utility Corridor to a point on MBOP land in the NW¼ of Section 23, Township 16S, Range 64E, Mount Diablo Base Meridian where they would enter BLM-administered land within the designated utility corridor. Once within the corridor, this route would proceed north on BLM-administered land for approximately 0.2 miles where it would be meet the collector line route from the northern SBS solar field.

From the northern portion of the SBS Project, the collector lines would leave the solar site proceeding southwestward on MBOP lands adjacent to the BLM-administered Moapa Utility Corridor to a point on MBOP land in the SE¼ of Section 14, Township 16S, Range 64E, Mount Diablo Base Meridian where they would enter BLM-administered land within the designated utility corridor. Once within the corridor, this route would proceed west on BLM-administered land for approximately 0.2 miles where it would be meet the collector route from the southern SBS solar field.

From this common point, the collector lines would proceed northwest in a common ROW on BLM-managed lands crossing within the designated utility corridor for approximately 0.65 miles eventually exiting BLM-administered land in the NW¼ of Section 14, Township 16S, Range 64E, Mount Diablo Base Meridian. The collector lines would terminate at the ESMSP substation on MBOP land in NW¼ of Section 14.

The proposed collector lines would cross up to 1.05 miles of BLM-administered land within a designated utility corridor. The collector line ROW on BLM-administered lands would be 50 to 80 feet wide, totaling about 8.9 acres. Detailed maps of the proposed collector lines are included in **Appendix B**.

As discussed earlier, in addition to the proposed collector line ROW, the Proposed Project would require a ROW for use of existing access roads. This ROW would include the primary access road for the SBS solar facility and access roads outside of the proposed collector line ROW and outside the ROW of the ESM gen-tie that will be utilized for the SBS Project to facilitate construction and operation of the lines.

Major Users Along the Collector Line Route

As mentioned earlier, several existing electric transmission lines, high-pressure natural gas pipelines, and associated access roads would be crossed perpendicularly by the proposed collector line route on the BLM-administered lands within the utility corridor. These existing facilities are listed in Table 1.

PROJECT DESCRIPTION

The Proposed Project involves construction, operation, and decommissioning of multiple 34.5 kilovolt (kV) collector lines from the two solar fields associated with the proposed SBS Project, both located on land held in trust by the BIA for the MBOP, to the approved project substation on the ESMPS site, also

located on MBOP lands on the opposite side of the designated utility corridor. The portion of the collector lines on BLM-administered lands would be up to 1.05 miles long within a ROW corridor that would vary in width from 50 to 80 feet. This would result in a ROW of approximately 8.9 acres. The entire BLM ROW for the collector lines is within the designated utility corridor.

The proposed SBS Project would be located entirely on land held in trust by the BIA for the MBOP. It would include the following components: solar arrays comprised of PV panels and inverters, electrical collection lines connecting the inverters to the substation, an operations and maintenance building, energy storage systems, and other related infrastructure such as access roads, fences, and telecommunication systems.

PROJECT ELEMENTS

The energy generated by the solar facility would be sold to NV Energy under a long-term power purchase agreement. The proposed collector lines would provide a connection between the SBS solar facility and the existing NV Energy Reid Gardner Substation via the approved ESMSP gen-tie.

Collector Lines

The collector lines that would be built between the SBS Project and the ESMSP Substation to provide the needed grid interconnection are proposed to be built underground. However, some or all the lines could be required to be built overhead and a description of that option is also provided.

Proposed Project - Underground Collector Lines

Under Proposed Project, all the collector lines, including those on BLM-managed lands within the utility corridor, would be built underground. The ROW for the underground collector lines from the southern SBS solar field would be 80 feet wide, the ROW for the underground collector lines from the northern SBS solar field would be 50 feet wide, and the ROW for the underground collector lines from the point where they converge to cross the designated utility corridor would be 80 feet wide.

The collector line conductors would either be direct-buried or placed in conduit in trenches within the ROW. **Figure 2** shows a cross-sectional view of how the lines would be buried and spaced within the trenches. The construction techniques that would be used are described below. Detailed maps of the proposed underground collector line ROW are included in **Appendix B**.

Above-Ground Collector Line Option

While proposed to be underground, the collector lines could be built overhead where needed. If overhead, the lines would be on double-circuit 34.5kV transmission support structures within the collector line ROW. These structures would typically be spaced 200 feet to 300 feet apart (center to center). The transmission structures would be steel mono-pole structures as shown in **Figure 3** and transmission structure heights will generally be about 50 to 70 feet high. The minimum ground

clearance of the conductor cable will be 25 feet. Communications cable or fiber cable will also be installed on the transmission structures. The communications cable or fiber optic line would only be for communication purposes related to the project. Detailed maps of the proposed overhead collector line are included in **Appendix B**.

Collector Line Service Road

The collector lines would be constructed to minimize ground disturbance on BLM-managed lands. A new unimproved access road approximately 12 feet wide within the proposed collector ROW would be used to provide the needed access for construction equipment and period inspections and maintenance.

Approved ESM Gen-Tie Line

After the collector lines connect to the ESMSP substation on tribal lands, the power generated from the SBS project would be transmitted on the approved ESMSP gen-tie line to the existing Reid-Gardner substation (**Figure 1**). The ROW associated with this gen-tie totals approximately 100.4 acres (2.5 acres on federal lands managed by BLM and 97.9 acres within the designated utility corridor on the Reservation also managed by BLM). This gen-tie will accommodate the power generated by the SBS Project without modification.

Solar Facility Access Road

Main access to the SBS solar facility site would be provided via existing roads on BLM-managed lands. These existing roads were built to provide access to the nearby existing Moapa Southern Paiute Solar Project (**Figure 1**). No upgrades to these existing roads are anticipated to be necessary to provide the access needed for this project, other than maintenance during construction and operations, as required. The ROWs for the existing roads total approximately 47.7 acres (5.7 acres on federal lands managed by BLM and 42.0 acres within the designated utility corridor on the Reservation also managed by BLM).

PROJECT FEATURE SPECIFICATIONS AND DISTURBANCE AREAS

It is assumed that the entire collector line ROW would be permanently disturbed for the underground collector line option. This area includes the access road that would be used for construction. For the overhead option, permanent disturbance areas will be those areas where the surface of the ground is not restored to its existing condition after construction, such as those relating to foundations or new access roads. Temporary disturbance areas include those where construction activity will take place but where restoration of the surface will be possible, such as those relating to temporary work areas, pull sites, and lay-down areas. In some places, areas of temporary disturbance will overlap with areas previously disturbed by prior transmission line installations. Short-term rights-of-way would also be required for areas beyond the permanent ROW for the pull sites and access roads. These areas would be necessary to facilitate construction and the safe operation of equipment.

Table 2 – Proposed Project Specifications

Electrical Specifications for 34.5-kV Collector Lines		
Nominal Voltage	34.5 kV ac	
Underground Option (Proposed)		
Cable Placement	Direct-buried or placed in conduits	
Circuit Spacing	Approximately 10 feet between circuits	
Above-Ground / Overhead (Option)		
Circuit Configuration	Vertical	
Ground Clearance of Conductor	25 feet minimum per RUS at Designed Thermal Limit for Emergency Line Loading Conditions (212 deg F)	
Type of Pole	Single-circuit steel mono-pole structures	
Pole Height	Ranges from 50 feet up to 70 feet	
Right of Way Width	75 feet	
Span Length	200 to 300 feet	
Project Feature	**Description**	**BLM-Administered Property**
Length of Lines	Total length of collector line ROW on BLM-administered lands.	1.05 miles
Number of Structures (overhead option)	Total number of dead-end, angle, or tangent structures on BLM-administered Property.	57
Structure Erection Sites (overhead option)	Typically 40 feet x 100 feet at each structure location	27
Wire Pulling and Tensioning Sites (overhead option)	Typically 120 feet wide by 500 feet. long, generally extends past each dead-end or angle structure. Necessary for conductor stringing equipment and placement of wire reels.	1
New collector line access roads	Width of new roads with the ROW	12 ft wide
Primary Solar Facility Access Road	Typical width of primary solar facility access road	30 ft wide

Table 3 – Proposed Project Disturbance Acreages

Project Feature	Temporary Disturbance		Permanent Disturbance	
	Moapa River (w/i corridor)	BLM	Moapa River (w/i corridor)	BLM
Underground collector lines (Proposed)				
ROW (including access road)	0	0	8.9 acres	0
Trenching Disturbance			8.9 acres	0
Overhead collector lines (Option)				
New Collector Access Roads and Transmission Structure turn-arounds	0 acres	0 acres	3.3 acres	0 acres
Collector Line Structure Work Area	4.2 acres	0 acres	0 acres	0 acres
Wire Pulling and Tensioning Sites	1.4 acres	0 acres	0 acres	0 acres
Total	*5.6 acres*	*0 acres*	*3.3 acres*	*0.0 acres*

GOVERNMENT AGENCIES INVOLVED

Federal

- Bureau of Land Management
- United States Fish and Wildlife Service
- Bureau of Indian Affairs
- United States Army Corps of Engineers
- Environmental Protection Agency

Tribal

- Moapa Band of Paiutes

State

- Public Utilities Commission of Nevada
- State Historic Preservation Office
- Nevada Department of Wildlife
- Nevada Division of Environmental Protection

Local

- Clark County

CONSTRUCTION OF THE FACILITIES

Geotechnical Investigation

Prior to construction, geotechnical surveys would be conducted along the collector line route to provide information for the proposed trenching or design of transmission structures if built as an overhead line. The geotechnical studies would allow for observations of subsurface conditions and soil samples would be obtained for laboratory testing and soil classification. Results of the analysis would help inform several design-related parameters including cement types and corrosion protection of foundation elements.

The subsurface exploration program would involve drilling borings along the collector line routes with a CME1050 rubber tire 4x4 drill rig or similar equipment. A 4x4 side-by-side all-terrain vehicle (aka: "gator") and/or pickup trucks would be used to drive support personnel to boring locations. During the borings, drive samples would be obtained from the subsurface for laboratory testing.

If necessary, test pits would also be conducted along the route. Test pits would be conducted using a standard rubber tire backhoe equipped with a 24-inch bucket, or similar equipment. The test pits would be approximately 2 feet wide, 7 feet long, and 8 feet deep. No personnel will enter the test pits. About 15 gallons (three 5-gallon buckets) of material would be collected from the surface to a depth of 1-foot at select test pit locations (not all test pits would be sampled). These samples may be tested in the laboratory for gradation, plasticity, maximum density, thermal resistivity, and corrosion characteristics. Each test pit would be backfilled immediately upon completion; no excavation would be left open.

Field resistivity testing may also be conducted along the route, if necessary. The field resistivity testing would be non-intrusive. Four steel pin electrodes (about the size of tent stakes) would be driven by hand into the ground about 4 inches deep, and an electrical current would be induced between the two outer electrodes. The two inner electrodes would be used to record the electrical resistivity of the current going through the earth.

Site Engineering Surveys

On-ground investigations will be completed to accurately locate the centerline of the collector lines within the ROW. The exact centerline will be chosen to best implement design criteria and to satisfy any required avoidance or minimization measures. Survey work will consist of centerline location and ROW boundaries, where necessary. Transmission structure locations (if overhead), work areas, access roads, and the route centerline will be flagged and staked, where necessary.

Timing of Activities

Heavy construction is expected to occur between 6:00 am and 5:00 pm, Monday through Friday. Additional hours may be necessary to make up schedule deficiencies or to complete critical construction activities. Some activities may require construction activities 24 hours per day, seven days per week. Low level noise activities may potentially occur between the hours of 10:00 pm and 7:00 am. Nighttime

activities could potentially include, but are not limited to, refueling equipment, staging material for the following day's construction activities, quality assurance/control, and commissioning.

Access

Existing roads will provide access for project construction, operation, and maintenance of the SBS Project and associated ROWs. Construction of the collector lines between the SBS sites and the ESMSP substation would begin with development of road access within the proposed collector line ROW. These access roads within the collector line ROW would typically be 12 feet wide and could be bladed as needed. Also, new roads could be compacted to ensure stability. The collector line access roads would not be maintained following construction.

Underground Collector Line Construction

Construction of the underground collector lines would include the following steps:

- Prior to construction of the underground collector lines, survey crews would survey the proposed route per final design, marking the center of each trench, the work limits, and junction box locations.
- Track hoe(s) would be used to excavate the trenches to design width and depth.
- Bedding material would be placed in the bottom of trenches and compacted (using the Sheep's Foot and compactor/roller attachments) to specified compaction percentage.
    - Specified backfill material (i.e. fill dirt with no rocks) utilized between conductor and bottom of trench to assure conductor is not resting on or rubbing against rocks (sharp edges), etc.
- For direct-burial, conductor would be placed on top of bedding material with spacing between conductor in compliance with design requirements
- If conduits are used, the conduit would be placed on top of the bedding material
- Backfill material would be placed over conductor or conduit in lifts (backfill layers with a specified thickness requiring compaction) which are typically 12" thick (utilizing sheeps foot and compactor attachments) until trenches are completely backfilled to grade.
- Junction boxes would be installed, secured, braced into final position/location using gravel backfill as specified
- Conductors would be terminated onto the terminal blocks, grounding rod and connectors would be completed and inspected, and testing would be conducted prior to energization

Above-Ground Collector Line Construction

If some or all the collector lines would be built overhead, the following construction methods would be used.

Pole / Structure Erection Sites

Temporary structure erection sites, typically 40 feet wide x 100 feet long would be established at each structure location. These areas would be cleared of vegetation. Each transmission structure would be set within an augured hole (tangent structures) with concrete added to secure the foundation at dead-end structures. The primary equipment used in setting foundations will be concrete trucks, auger rigs, pickup trucks, crane and front-end loaders. Holes would be excavated using a truck-mounted drill rig or a standalone auger rig if required. Poles would be delivered on a flat-bed trailer and hoisted into place by a crane. The annular space between the poles and holes would be backfilled with concrete or soil. Excavated spoil material would be spread around the temporary work areas.

Conductor Pulling and Tension Sites

One pulling and tensions site would be required on BLM-administered land for installing the conductors on the collector line structures. This pulling and tension site would be approximately 120 feet wide x 500 feet long and would be located within and adjacent to the gen-tie ROW. Conductors would be strung between transmission structures with heavy duty trucks and a telescoping boom lift. If necessary, to avoid seasonal washes some sections of conductors may be strung by either using a helicopter or by first 'walking' a light pulling rope between structures that is then used to pull in the heavier conductor. Cables will be pulled through one segment of the transmission line at a time. To pull cables, truck-mounted cable-pulling equipment is placed alongside the first and last towers or poles in a segment. Power pulling equipment is used at the front end of the segment, while power braking or tensioning equipment is used at the back end. The conductors are then pulled through the segment and attached to the insulators. Equipment is then moved to the next segment; the front-end pull site previously used becomes the back-end pull site for the next segment. After conductors have been pulled into place in a section, the conductor tension is increased to achieve a ground clearance of at least 25 feet prior to moving to the next section.

Water Use

Water would be used for dust suppression and soil compaction during construction. Water would be obtained from two existing wells owned by the MBOP adjacent to the ESMSP solar facility site.

Industrial Wastes and Toxic Substances

Minimal levels of materials that have been defined as hazardous under 40CFR, Part 261 would be used during the construction of the collector lines. Hazardous materials spill kits would be carried in vehicles for any small spills that could occur. Hazardous materials would not be disposed of on-site, released onto the ground, underlying groundwater, or any surface water. Fully enclosed containment would be provided for all refuse. All construction waste, including trash, solid waste, petroleum products, and other hazardous materials, would be disposed of at a properly licensed waste disposal facility.

Personnel and Vehicles

The workers and vehicles expected to be required to construct the proposed collector lines are estimated below (per structure):

Table 6 – Collector Line Construction Equipment and Construction Workforce

Equipment Type	Quantity	PERSONNEL
Survey Collector Line Route		
Off-highway trucks	2	2: Driver
Clear and Grade ROW Access Roads		
Crawler Tractor	1	2: Driver + Spotter
Grader	1	2: Driver + Spotter
Drum Roller Compactor	1	2: Driver + Spotter
UNDERGROUND COLLECTOR LINES		
Trenching		
Crawler Tractor	1	2: Driver + Spotter
Backhoe / Excavator	2	2: Driver + Spotter
Backhoe	2	2: Driver + Spotter
Cable Installation		
Cable Truck	1	2: Driver + Spotter
Crew Truck(s)	6	6: Linemen/Groundmen
Backfilling		
Grader	1	2: Driver + Spotter
Spadefoot Compactor	1	2: Driver + Spotter
Drum Roller Compactor	1	2: Driver + Spotter
OVERHEAD COLLECTOR LINES		
Clear and Grade Tower Structures		
Crawler Tractor	1	2: Driver + Spotter
Grader	1	2: Driver + Spotter
Drum Roller Compactor	1	2: Driver + Spotter
Off-highway trucks	3	3: Driver
Foundation Installation		
Drilling Rig	1	3: Driver + Operator + Support
Crane	2	6: 2 Drivers + 2 Operators + 2 Spotters
Boom Truck	1	1: Operator
Flat Bed Truck	1	1: Operator
Crew Truck(s)	6	6: Crew
Concrete Truck	1	1: Driver/Operator
Pole Erection		
Bucket Lift Truck	1	2: Driver + Operator
Boom Truck(s)	1	3: Driver + Operator + Support
Crew Truck(s)	6	6: Linemen/Groundmen
Cable Pulling		
Heavy-duty Truck (Puller)	1	2: Driver + Operator
Heavy-duty Truck (Tensioner)	1	2: Driver + Operator
Crew Truck(s)	6	6: Linemen/Groundmen
Crew Truck(s)	6	3: Spotters
Helicopter	1	2: Pilot + Spotter

In addition, the project will require the following:

- Engineering Surveys – Truck(s) and 3 crew
- Cleanup and Restoration – Truck(s) and 4 crew

Final design characteristics and corresponding final equipment and personnel requirements will be determined in the detailed design phase of the project.

OPERATIONS AND MAINTENANCE

Collector Line Operation

The proposed collector lines would operate continuously throughout the life of the SBS Project. Following construction, activities associated with the gen-tie would be restricted to inspection and occasional maintenance and repair. Line access roads would not be regularly maintained, but as-needed blading may be conducted to provide access to transmission structures for maintenance activities.

Additional operations and maintenance activities may include insulator washing (for the above-ground option), periodic inspections, repair or replacement of lines or insulators, or response to emergency situations (e.g., outages) to restore power (infrequent/as needed).

Except for emergency situations and outages, most maintenance work would take place between 7 am and 6 pm, Monday through Friday. Transmission line conductors may occasionally need to be upgraded or replaced over the life of the line. Old cables will be removed and replaced if needed.

Safety

Safety precautions and emergency systems will be implemented as part of the design and construction of the transmission line to ensure safe and reliable operation. Administrative controls may include classroom and hands-on training in operating and maintenance procedures, general safety items, and a maintenance program plan. These controls will compliment transmission line design and monitoring features to enhance safety and reliability.

DECOMMISSIONING

Following the useful life of the Proposed Project, project components would be decommissioned and removed from the ROW. Prior to dismantling or removal of equipment, staging areas would be delineated along the collector line routes as appropriate. All decommissioning activities would be conducted within designated areas. Work to decommission the collector lines is anticipated to be conducted within the boundaries of existing easements and rights of way.

All decommissioning of transmission structures, electrical devices, equipment, and wiring/cabling will be in accordance with local, state and federal laws. Any electrical decommissioning will include obtaining required permits, and following applicable safety procedures before de-energizing, isolating, and disconnecting electrical devices, equipment, and cabling.

CLARK COUNTY

Moapa River Indian Reservation

Southern Bighorn Solar Project - North

Southern Bighorn Solar Project - South

Crystal Substation

Muddy River

California Wash

Moapa Town

78

15

40

Legend

Project Components

- Southern Bighorn Solar Project - Max Fenceline
- Underground ROW
- Gen-Tie ROW
- Existing Access Road

General Features

- Existing Substation
- Interstate
- US / State Highway
- Railroad
- Stream or River
- Designated Utility Corridor
- Municipal Boundary

Jurisdictional Land Ownership

- Bureau of Land Management Land
- Indian Reservation
- Private Lands

0 0.5 1 1.5 2

Miles

Universal Transverse Mercator
North American Datum 1983
Zone 11 North, Meters

Southern Bighorn Solar Project

Overview of BLM ROWs

Map Extent: Clark County, Nevada

Date: 08-12-20		Author: rnc

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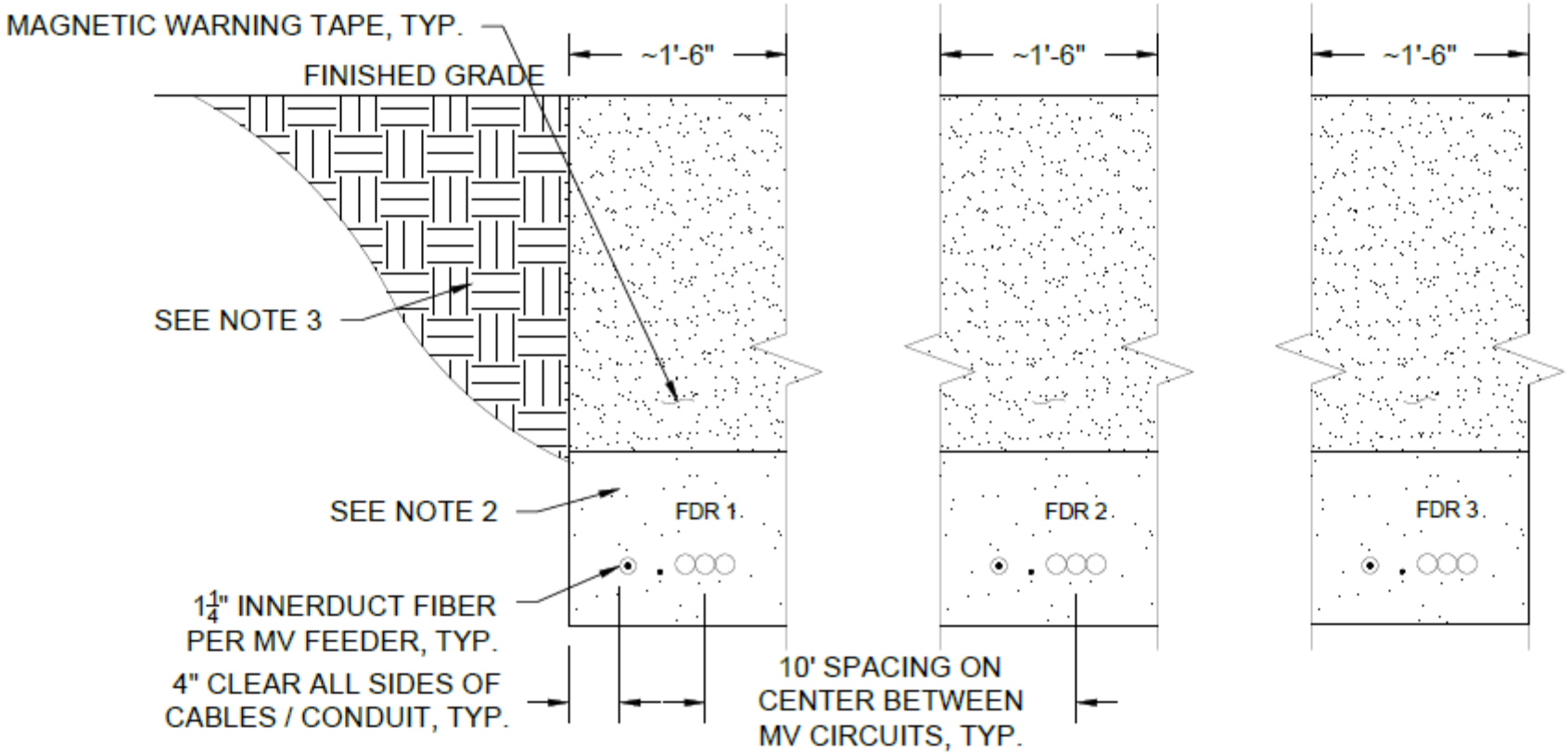

MULTIPLE 34.5 kV FEEDER TRENCH SECTION DETAIL

Scale: N.T.S.

NOTES:

1. BACKFILL SECTION ABOVE CABLE BACKFILL - VISUALLY SCREENED NATIVE SOIL COMPACTED TO 90 PERCENT STANDARD PROCTOR, EXCEPT IN STRUCTURAL AREAS SHALL BE COMPACTED TO 95 PERCENT STANDARD PROCTOR. DC TRENCH PASSING UNDER ROADS IS CONSIDERED A STRUCTURAL AREA.
2. BACKFILL SECTION AROUND CABLES - PROVIDE 1 FOOT NATIVE GRANULAR BEDDING WITH GRANULES NOT TO EXCEED 3/8 INCH AND COMPACTED TO 90 PERCENT STANDARD PROCTOR. MINIMUM 4 INCHES BELOW AND 8 INCHES ABOVE CONDUCTORS.
3. UNDISTURBED NATIVE SOIL.
4. TRENCH GROUND CONDUCTOR HAS NO SET SPACING DISTANCE FROM OTHER CABLES
5. FOR TRENCHES WIDER THAN 36", MULTIPLE WARNING TAPES TO BE USED
6. WARNING TAPE SHALL BE INSTALLED MIN 12" ABOVE CONDUCTORS PER NEC 300.5(D)(3)

Figure 2

Underground Collector Line Detail

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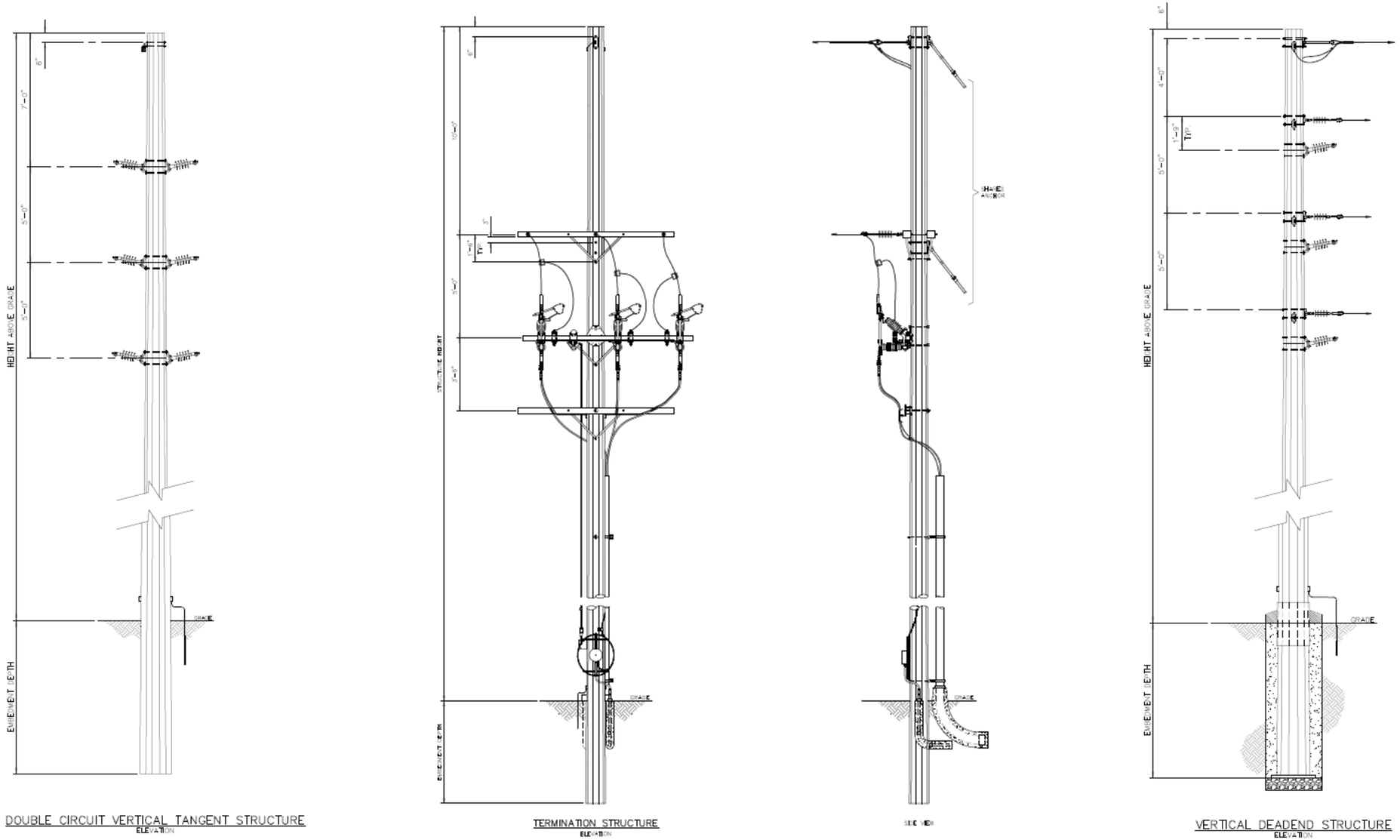

Figure 3

Overhead Collector Line Structure Detail

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PLAN OF DEVELOPMENT
APPENDIX A

LEGAL DESCRIPTION OF BLM-MANAGED ROWs

LEGAL DESCRIPTION OF SBS ROWs ON BLM-MANAGED LAND

SBS1 – Proposed Project, Legal Description for Underground Collector Line Right-of-Way

T. 16 S., R. 64 E.,
sec. 14, Lots 6, 9, 15, and 16, SW¼SE¼, and NW¼SE¼
sec. 23, Lot 2
Total Proposed Project Underground Collector Line ROW Acreage: 8.9 acres
(Moapa [within utility corridor]: 8.9 acres, BLM: 0.0 acres)

SBS1 – Proposed Project, Legal Description for Previously-Approved ESM Gen-Tie Line Right-of-Way

T. 16 S., R. 64 E.,
sec. 12, Lots 1, 8, 9, and 14, SE¼SW¼, NW¼SE¼, SE¼NE¼
sec. 13, NW¼NW¼
sec. 14, Lots 1, 8, 9, and 11, SE¼NE¼, and NW¼SE¼
Acres: 21.4
T. 16 S., R. 65 E.,
sec. 5, Lot 7
sec. 6, Lot 8
sec. 7, Lot 7
Acres: 15.4
T. 15 S., R. 65 E.,
sec. 12, Lots 6, 7, and 14, SW¼SE¼, SE¼SE¼, NE¼SE¼
sec. 13, Lot 1, SW¼NW¼, SE¼NW¼, NE¼NW¼, NW¼NE¼
sec. 14, Lots 6, 7, and 14, SW¼SE¼, NE¼SE¼
sec. 22, Lots 7, 8, 9, 16, and 17
sec. 23, Lots 4, 5, and 7
sec. 27, Lots 4, 5, and 7
sec. 28, Lots 12, 13, 14, 21, and 22
sec. 32, Lots 1, 11, 12, 17, and 18, SW¼SE¼, NW¼SE¼, NE¼SE¼, SE¼NE¼
sec. 33, Lots 4, 5, and 6
Acres: 61.1
T. 15 S., Range 66E
sec. 7, Lot 2
Acres: 2.5
Total Proposed Project Gen-Tie ROW Acreage: 100.4 acres
(Moapa [within utility corridor]: 97.9 acres, BLM: 2.5 acres)

SBS1 – Proposed Project, Legal Description for Short-Term Right-of-Way

T. 16 S., R. 64 E.,
sec. 14, Lot 15
Acres: 1.7
Total Proposed Short-Term Right-of-Way Acreage: 1.7 acres
(Moapa [within utility corridor]: 1.7 acres, BLM: 0.0 acres)

SBS1 – Proposed Project, Legal Description for Existing and Previously-Approved Primary Solar Facility Access Roads

T. 17 S., R. 64 E.
sec. 10, Lot 7, SE¼SW¼, NE¼SW¼, SE¼NW¼
sec. 15, NE ¼NW¼
Acres: 3.8
T. 16 S., R. 64 E.,
sec. 12, Lots 1, 8, 9, and 14, SE¼SW¼, SW¼SE¼, NW¼SE¼, SE¼NE¼
sec. 13, Lots 9, 10, and 12, NW¼NW¼
sec. 14, Lots 1, 8, 9, 11, and 12, SE¼SW¼, SW¼SE¼, NW¼SE¼, NE¼SE¼, SE¼NE¼
sec. 22, SW¼SE¼, NW¼SE¼, SE¼SW¼, SE¼NE¼, NE¼SE¼
sec. 23, Lots 5, 6, and 8, SW¼NW¼, NW¼NW¼, NE¼NW¼
sec. 27, SW¼NW¼, NE¼NW¼, NW¼NW¼
sec. 28, SE¼SE¼, NE¼SE¼, SE¼NE¼
sec. 33, SW¼SE¼, SE¼SE¼, NE¼SE¼, SE¼NE¼, NE¼NE¼
Acres: 24.8
T. 16 S., R. 65 E.,
sec. 5, Lot 7
sec. 6, Lot 8
sec. 7, Lot 7
Acres: 4.8
T. 15 S., R. 65 E.,
sec. 12, Lot 6, SW¼SE¼, SE¼SE¼, NE¼SE¼
sec. 13, NW¼SW¼, SW¼NW¼, SE¼NW¼, NE¼NW¼, NW¼NE¼
sec. 14, SW¼SE¼, SE¼SE¼, NE¼SE¼
sec. 22, Lots 7, 8, 9, 16, and 17
sec. 23, Lots 3, 4, 5, 7
sec. 27, Lots 4, 5 and 7
sec. 28, Lots 12, 13, 14, 21, and 22
sec. 32, Lots 12, and 18, SW¼SE¼, NE¼SE¼, NW¼SE¼, SE¼NE¼
sec. 33, Lots 4, 5, and 6
Acres: 12.5

T. 15 S., R. 66 E.,

sec 7, Lots 1, 2, 3, and 4

sec. 18, Lot 1

Acres: 1.8

Total Primary Solar Facility Access Road ROW Acreage: 47.7 acres
(Moapa [within utility corridor]: 42.0 acres, BLM: 5.7 acres)

SBS1 –Option, Legal Description for Overhead Collector Line Right-of-Way

T. 16 S., R. 64 E.,

sec. 14, Lots 6, 9, 15, and 16, SW¼SE¼, and NW¼SE¼

sec. 23, Lot 2

Total Proposed Project Overhead Collector Line ROW Acreage: 10.7 acres
(Moapa [within utility corridor]: 10.7 acres, BLM: 0.0 acres)

PLAN OF DEVELOPMENT

APPENDIX B

MAPS OF BLM-MANAGED ROWs

FOR

COLLECTOR LINES

UNDERGROUND COLLECTOR LINES

15
14
13
1
2
3
4
Moapa River Indian Reservation
22
23
24
CLARK COUNTY
T16S R64E

Legend

Project Components

- Underground ROW
- Mapbook Page

General Features

- Designated Utility Corridor
- Township / Range Boundary
- Section Boundary

Jurisdictional Land Ownership

- Indian Reservation

0 1,000 2,000
Feet

Universal Transverse Mercator
North American Datum 1983
Zone 11 North, Meters

Southern Bighorn Solar Project

SBS1 UNDERGROUND MAPBOOK

Map Extent: Clark County, Nevada

Date: 08-17-20		Author: rnc

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SOUTHERN BIGHORN SOLAR PROJECT

SBS1 UNDERGROUND MAPBOOK

LEGEND

Project Components

Underground ROW

General Features

Interstate

Railroad

Designated Utility Corridor

Township / Range Boundary

Section Boundary

Jurisdictional Land Ownership

Bureau of Indian Affairs Land (No Shading)

N

0 50 100 150 200

Feet

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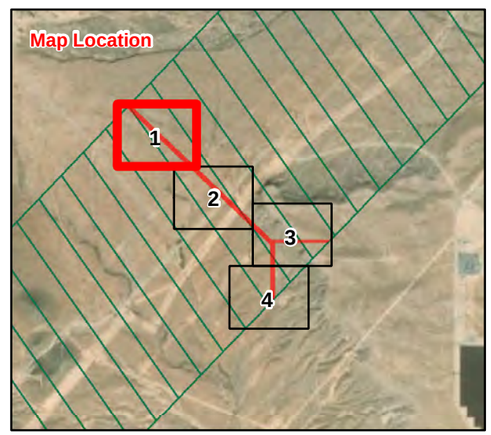

SOUTHERN BIGHORN SOLAR PROJECT

SBS1 UNDERGROUND MAPBOOK

LEGEND

Project Components

Underground ROW

General Features

Interstate

Railroad

Designated Utility Corridor

Township / Range Boundary

Section Boundary

Jurisdictional Land Ownership

Bureau of Indian Affairs Land (No Shading)

0 50 100 150 200

Feet

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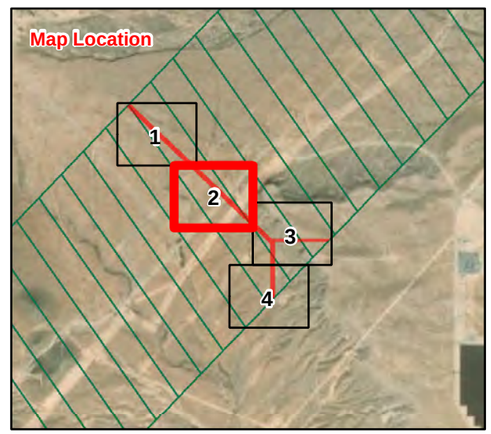


SOUTHERN BIGHORN SOLAR PROJECT

SBS1 UNDERGROUND MAPBOOK

LEGEND

Project Components

- Underground ROW

General Features

- Interstate
- Railroad
- Designated Utility Corridor
- Township / Range Boundary
- Section Boundary

Jurisdictional Land Ownership

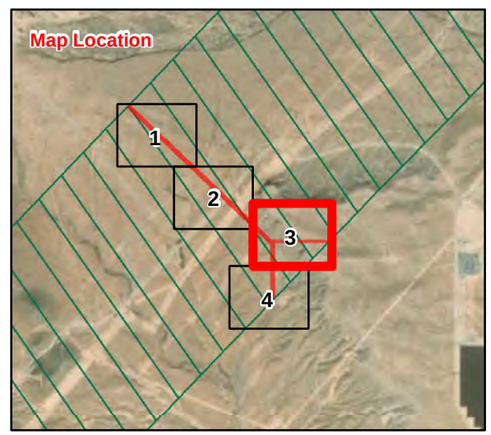
- Bureau of Indian Affairs Land (No Shading)

N

0 50 100 150 200

Feet

Data Sources: Clark Co., BLM, ESRI, NDOT, USDA.
F:\Projects\South Bighorn Solar\MXDs\SBS1 Mapbook 062220.mxd 6/23/2020 SJW



SOUTHERN BIGHORN SOLAR PROJECT

SBS1 UNDERGROUND MAPBOOK

LEGEND

Project Components

- Underground ROW

General Features

- Interstate
- Railroad
- Designated Utility Corridor
- Township / Range Boundary
- Section Boundary

Jurisdictional Land Ownership

- Bureau of Indian Affairs Land (No Shading)

0 50 100 150 200
Feet

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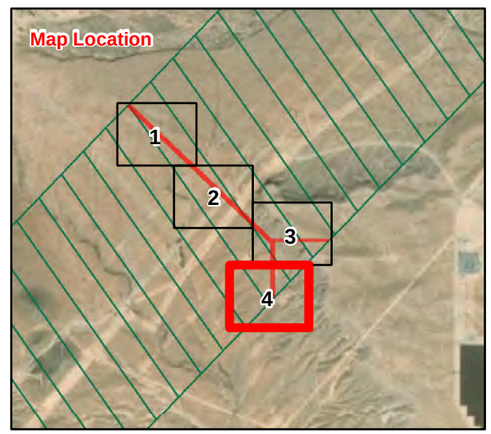

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OVERHEAD COLLECTOR LINES

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Legend

Project Components

- SBS1 Transmission Line
- Mapbook Page

General Features

- Designated Utility Corridor
- Township / Range Boundary
- Section Boundary

Jurisdictional Land Ownership

- Indian Reservation

0 1,000 2,000

Feet

Universal Transverse Mercator
North American Datum 1983
Zone 11 North, Meters

Southern Bighorn Solar Project		
SBS1 OVERHEAD MAPBOOK		
Map Extent: Clark County, Nevada		
Date: 08-17-20		Author: rnc
G:\MXD's\Project Location_081720.mxd		

SOUTHERN BIGHORN SOLAR PROJECT

SBS1 OVERHEAD MAPBOOK

LEGEND

- Township / Range Boundary
- Section Boundary
- Designated Utility Corridor

Proposed Project

- SBS1 Transmission Line
- Permanent Disturbance Area
- Temporary Disturbance Area
- Right-of-Way
- Transmission Structures
- Access Road
- Tension Pulling Sites

Jurisdictional Land Ownership

- Bureau of Indian Affairs Land (No Shading)

0 50 100 150 200

Feet

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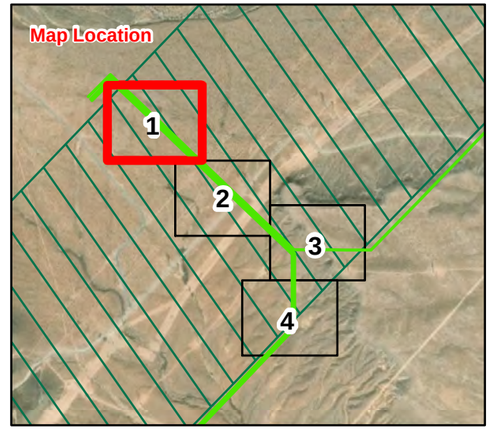

SOUTHERN BIGHORN SOLAR PROJECT

SBS1 OVERHEAD MAPBOOK

LEGEND

- Township / Range Boundary
- Section Boundary
- Designated Utility Corridor

Proposed Project

- SBS1 Transmission Line
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- Right-of-Way
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Jurisdictional Land Ownership

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Feet

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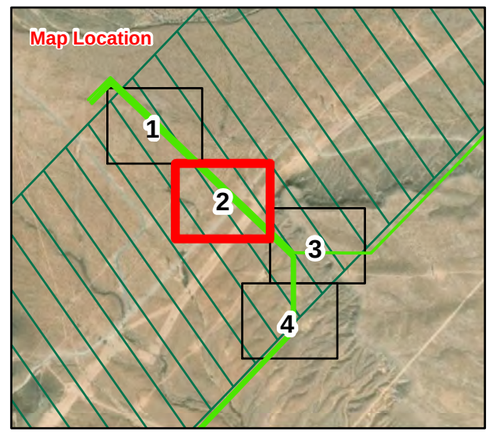

SOUTHERN BIGHORN SOLAR PROJECT

SBS1 OVERHEAD MAPBOOK

LEGEND

- Township / Range Boundary
- Section Boundary
- Designated Utility Corridor

Proposed Project

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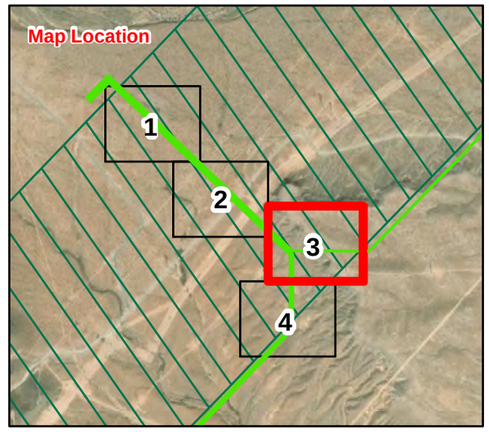

SOUTHERN BIGHORN SOLAR PROJECT

SBS1 OVERHEAD MAPBOOK

LEGEND

- Township / Range Boundary
- Section Boundary
- Designated Utility Corridor

Proposed Project

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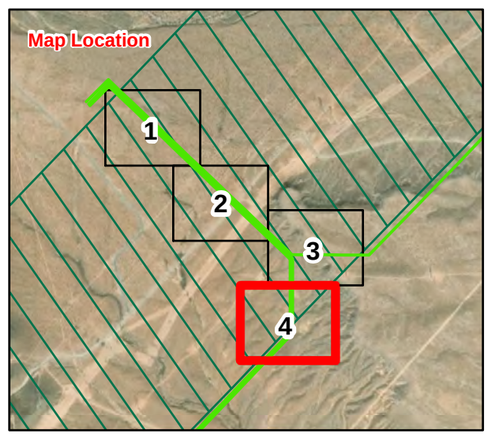

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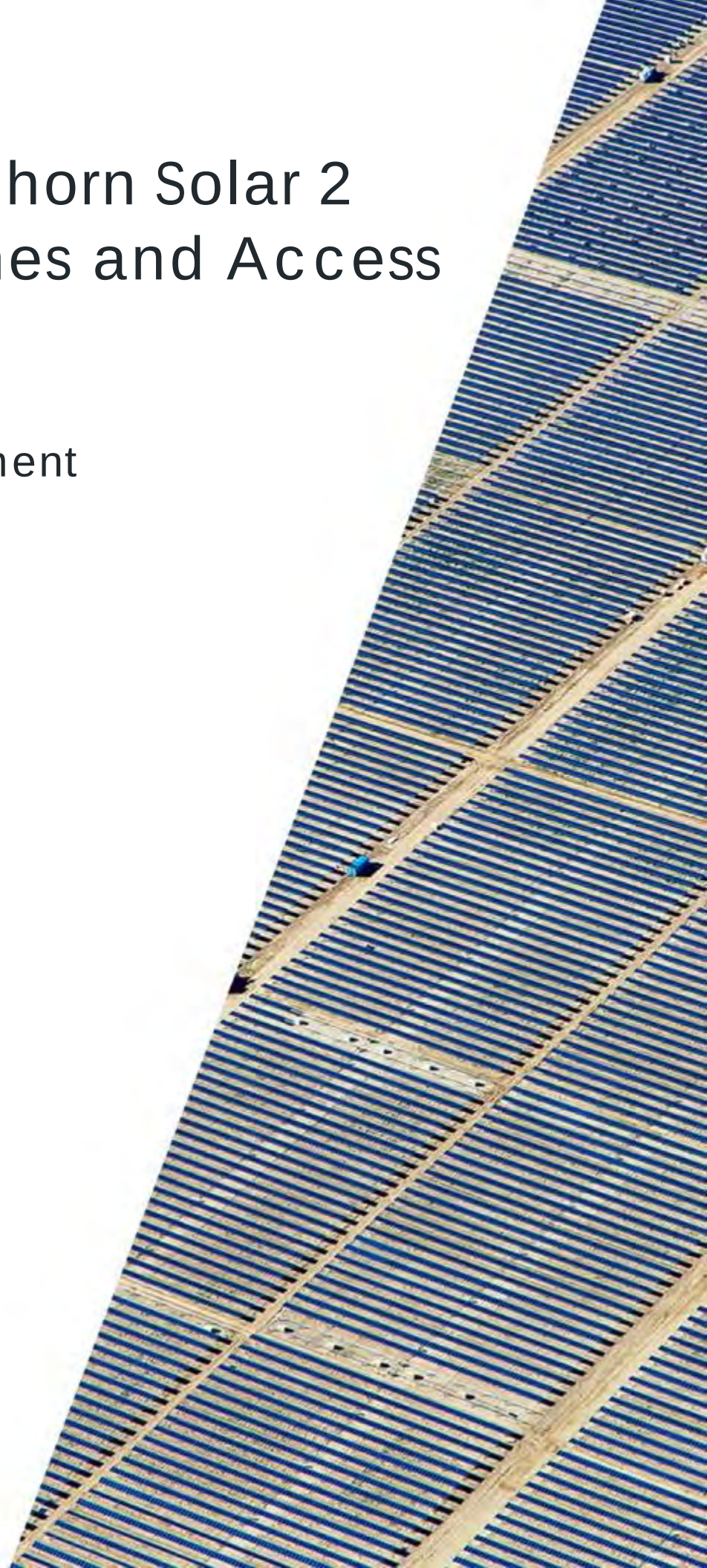
Southern Bighorn Solar 2 Collector Lines and Access Roads

Plan of Development



Submitted to:

Bureau of Land Management
Las Vegas Field Office
4701 North Torrey Pines Drive
Las Vegas, NV 89130

Submitted by:

Southern Bighorn Solar Project

425LM 8me LLC

August 2020

TABLE OF CONTENTS

OVERVIEW

425LM 8me LLC (the Applicant) proposes to construct and operate electrical collector lines that would be partially located on lands administered by the Bureau of Land Management (BLM). In addition, the Applicant plans to utilize the approved ESM gen-tie and existing access roads located on BLM-managed lands to provide access. Together, the new collector lines and use of the approved ESM gen-tie and existing access roads are the Proposed Project.

The collector lines would deliver power from the proposed Southern Bighorn Solar 2 (SBS2) Project located in Clark County, Nevada (**Figure 1**). The proposed collector lines would cross lands held in trust by the Bureau of Indian Affairs (BIA) for the Moapa Band of Paiutes (MBOP) and lands on the Moapa River Indian Reservation (Reservation) but within a designated utility corridor administered by the BLM. The collector lines would interconnect the up to 100 megawatt alternating current (MWac) photovoltaic (PV) SBS2 electric generation facility located on the Reservation north of the existing Moapa Southern Paiute Solar Project. This interconnection to the regional grid would be accomplished via a connection to the substation on the approved Eagle Shadow Mountain Solar Project (ESMSP) site and the use of the approved ESM gen-tie line which interconnects to the NV Energy Reid Gardner Substation. The proposed collector lines would be designed to accommodate transmission of energy generated by the SBS2 Project.

The Proposed Project would involve construction, operation, and eventual decommissioning of multiple 34.5 kilovolt (kV) lines that would run southwestward on tribal lands from the SBS2 solar field area. These lines would turn northwest to perpendicularly cross the designated utility corridor managed by BLM to the ESMSP site substation on tribal land. These lines are proposed to be built primarily underground but could be built either above or below ground.

From the ESMSP substation, the electricity generated by the SBS2 Project would be transmitted to the existing Reid-Gardner Substation via the approved ESMSP gen-tie line. The ROW for this approved gen-tie line is included as part of the SBS2 Project.

The existing access roads that would be used to provide access to the SBS2 are located both on federal lands and lands on the Reservation but within the designated utility corridor managed by BLM. From these existing roads, proposed new access roads would be built on MBOP lands to each solar field.

The collector lines would require a BLM ROW about 0.85 miles in length. The proposed ROW for the collector lines would be 50 feet wide. The entire proposed BLM-managed ROW for these collector lines is within the designated utility corridor (Moapa Corridor, P.L. 96-491), which currently includes at least 11 BLM-authorized linear ROWs that would each be crossed by the Proposed Project (**Table 1**). All portions of the new collector lines on lands administered by BLM are proposed to be constructed underground.

Table 1– Authorized Rights-of-Way within BLM Moapa Utility Corridor

Serial No.	Proponent/Holder	Project	ROW Width
NVN 082385	Holly Energy Partners	UNEV Pipeline	50’
NVN 042581	Kern River Gas Transmission Co	Natural Gas Pipeline	75’
NVN 089176	K-Road Moapa Solar LLC	500 kV Transmission Line	Varies – 100’ – 200’
NVN 091072	K-Road Moapa Solar LLC	Road and Drainage	27’
NVN 010683	Los Angeles Department of Water and Power	500 kV Transmission Line	Varies – 200’ – 400’
NVN 004790	LADWP / BOR / Nevada Energy	Navajo - McCullough 550 kV	200’
NVN 039815	NV Energy	Pecos - Harrisburg 345 kV Transmission Line	Varies – 150’ – 330’
NVN 0061985	NV Energy	230 kV Transmission Line	Varies – 100’ – 230’
NVN 0067348	NV Energy	230 kV Transmission Line	100’
NVN 091614	Overton Power District	Arrow Canyon Powerline	50’
NVN 086732	TransWest Express LLC	600 / 500 kV Transmission Line	Varies – 200’ – 300’
NVN 97443 NVN 97443-MT	325MK 8me LLC	230-kV Transmission Line	Existing Roads – Varies. Gen-Tie ROW – 75’

Applicant’s Purpose and Need

The purpose of the proposed collector lines is to facilitate transmission of the energy produced at the SBS2 Project to the regional electrical grid and provide access to the Project site. The need for the Proposed Project is to:

1. Provide a means of conveying up to 100 MWac of renewable energy to the electric grid to meet increasing demand for in-state generation;
2. To complement the Applicant’s dedication to environmental stewardship through environmentally sensitive project siting;
3. To assist the Moapa Band of Paiutes by promoting economic development and bring living-wage jobs to the region throughout the life of the Proposed Project.

Project Location

The SBS2 Project’s energy generation facilities would be located entirely on Reservation lands in Clark County north of the existing Moapa Southern Paiute solar facility. The Proposed Project (i.e., collector lines, approved gen-tie, and existing access roads) would be located on a combination of MBOP lands held in trust by the BIA and on lands administered by the BLM (**Figure 1**). The legal description of the ROWs on BLM are described in **Appendix A**.

Origin and Destination Routing

The proposed collector lines would originate at the SBS2 Project on lands held in trust by the BIA for the MBOP. From the SBS2 Project, the collector lines would leave the solar site proceeding southwestward on MBOP lands adjacent to the BLM-administered Moapa Utility Corridor to a point on MBOP land in the SE¼ of Section 14, Township 16S, Range 64E, Mount Diablo Base Meridian where they would enter BLM-administered land within the designated utility corridor. Once within the corridor, this route would proceed west on BLM-administered land for approximately 0.2 miles where it would proceed northwest on BLM-managed lands crossing within the designated utility corridor for approximately 0.65 miles eventually exiting BLM-administered land in the NW¼ of Section 14, Township 16S, Range 64E, Mount Diablo Base Meridian. The collector lines would terminate at the ESMSP substation on MBOP land in NW¼ of Section 14.

The proposed collector lines would cross up to 0.85 miles of BLM-administered land within a designated utility corridor. The collector line ROW on BLM-administered lands would be 50feet wide, totaling about 4.9 acres. Detailed maps of the proposed collector line are included in **Appendix B**.

As discussed earlier, in addition to the proposed collector line ROW, the Proposed Project would require a ROW for use of existing access roads. This ROW would include the primary access road for the SBS2 solar facility and access roads outside of the proposed collector line ROW and outside the ROW of the ESM gen-tie that will be utilized for the SBS2 Project to facilitate construction and operation of the lines.

Major Users Along the Collector Line Route

As mentioned earlier, several existing electric transmission lines, high-pressure natural gas pipelines, and associated access roads would be crossed perpendicularly by the proposed collector line route on the BLM-administered lands within the utility corridor. These existing facilities are listed in **Table 1**.

PROJECT DESCRIPTION

The Proposed Project involves construction, operation, and decommissioning of multiple 34.5 kilovolt (kV) collector lines from the SBS2 solar field located on land held in trust by the BIA for the MBOP, to the approved project substation on the ESMPS site, also located on MBOP lands on the opposite side of the designated utility corridor. The portion of the collector lines on BLM-administered lands would be up to 0.85 miles long within a ROW corridor that would be 50 feet in width. This would result in a ROW of approximately 4.9 acres. The entire BLM ROW for the collector lines is within the designated utility corridor.

The proposed SBS2 Project would be located entirely on land held in trust by the BIA for the MBOP. It would include the following components: solar arrays comprised of PV panels and inverters, electrical collection lines connecting the inverters to the substation, an operations and maintenance building, energy storage systems, and other related infrastructure such as access roads, fences, and telecommunication systems.

PROJECT ELEMENTS

The energy generated by the solar facility would be sold under a long-term power purchase agreement, or another viable commercial purchase contract. The proposed collector lines would provide a connection between the SBS2 solar facility and the existing NV Energy Reid Gardner Substation via the approved ESMSP gen-tie.

Collector Lines

The collector lines that would be built between the SBS2 Project and the ESMSP Substation to provide the needed grid interconnection are proposed to be built underground. However, some or all the lines could be required to be built overhead and a description of that option is also provided.

Proposed Project - Underground Collector Lines

Under Proposed Project, all the collector lines, including those on BLM-managed lands within the utility corridor, would be built underground. The ROW for the underground collector lines from the SBS2 solar field would be 50 feet wide.

The collector line conductors would either be direct-buried or placed in conduit in trenches within the ROW. **Figure 2** shows a cross-sectional view of how the lines would be buried and spaced within the trenches. The construction techniques that would be used are described below. Detailed maps of the proposed underground collector line ROW are included in **Appendix B**.

Above-Ground Collector Line Option

While proposed to be underground, the collector lines could be built overhead where needed. If overhead, the lines would be on double-circuit 34.5kV transmission support structures within the collector line ROW. These structures would typically be spaced 200 feet to 300 feet apart (center to center). The transmission structures would be steel mono-pole structures as shown in **Figure 3** and transmission structure heights will generally be about 50 to 70 feet high. The minimum ground clearance of the conductor cable will be 25 feet. Communications cable or fiber cable will also be installed on the transmission structures. The communications cable or fiber optic line would only be for communication purposes related to the project. Detailed maps of the proposed overhead collector line are included in **Appendix B**.

Collector Line Service Road

The collector lines would be constructed to minimize ground disturbance on BLM-managed lands. A new unimproved access road approximately 12 feet wide within the proposed collector ROW would be used to provide the needed access for construction equipment and period inspections and maintenance.

Approved ESM Gen-Tie Line

After the collector lines connect to the ESMSP substation on tribal lands, the power generated from the SBS2 project would be transmitted on the approved ESMSP gen-tie line to the existing Reid-Gardner substation (**Figure 1**). The ROW associated with this gen-tie totals approximately 100.4 acres (2.5 acres on federal lands managed by BLM and 97.9 acres within the designated utility corridor on the Reservation also managed by BLM). This gen-tie will accommodate the power generated by the SBS2 Project without modification.

Solar Facility Access Road

Main access to the SBS2 solar facility site would be provided via existing roads on BLM-managed lands. These existing roads were built to provide access to the nearby existing Moapa Southern Paiute Solar Project (**Figure 1**). No upgrades to these existing roads are anticipated to be necessary to provide the access needed for this project, other than maintenance during construction and operations, as required. The ROWs for the existing roads total approximately 42.6 acres (5.7 acres on federal lands managed by BLM and 36.9 acres within the designated utility corridor on the Reservation also managed by BLM).

PROJECT FEATURE SPECIFICATIONS AND DISTURBANCE AREAS

It is assumed that the entire collector line ROW would be permanently disturbed for the underground collector line option. This area includes the access road that would be used for construction. For the overhead option, permanent disturbance areas will be those areas where the surface of the ground is not restored to its existing condition after construction, such as those relating to foundations or new access roads. Temporary disturbance areas include those where construction activity will take place but where restoration of the surface will be possible, such as those relating to temporary work areas, pull sites, and lay-down areas. In some places, areas of temporary disturbance will overlap with areas previously disturbed by prior transmission line installations. Short-term rights-of-way would also be required for areas beyond the permanent ROW for the pull sites and access roads. These areas would be necessary to facilitate construction and the safe operation of equipment.

Table 2 – Proposed Project Specifications

Electrical Specifications for 34.5-kV Collector Lines		
Nominal Voltage	34.5 kV ac	
Underground Option (Proposed)		
Cable Placement	Direct-buried or placed in conduits	
Circuit Spacing	Approximately 10 feet between circuits	
Above-Ground / Overhead (Option)		
Circuit Configuration	Vertical	
Ground Clearance of Conductor	25 feet minimum per RUS at Designed Thermal Limit for Emergency Line Loading Conditions (212 deg F)	
Type of Pole	Single-circuit steel mono-pole structures	
Pole Height	Ranges from 50 feet up to 70 feet	
Right of Way Width	75 feet	
Span Length	200 to 300 feet	
Project Feature	**Description**	**BLM-Administered Property**
Length of Lines	Total length of collector line ROW on BLM-administered lands.	0.85 miles
Number of Structures (overhead option)	Total number of dead-end, angle, or tangent structures on BLM-administered Property.	22
Structure Erection Sites (overhead option)	Typically 40 feet x 100 feet at each structure location	21
Wire Pulling and Tensioning Sites (overhead option)	Typically 120 feet wide by 500 feet. long, generally extends past each dead-end or angle structure. Necessary for conductor stringing equipment and placement of wire reels.	1
New collector line access roads	Width of new roads with the ROW	12 ft wide
Primary Solar Facility Access Road	Typical width of primary solar facility access road	30 ft wide

Table 3 – Proposed Project Disturbance Acreages

Project Feature	Temporary Disturbance		Permanent Disturbance	
	Moapa River (w/i corridor)	BLM	Moapa River (w/i corridor)	BLM
Underground collector lines (Proposed)				
ROW (including access road)	0	0	4.9 acres	0
Trenching Disturbance			4.9 acres	0
Overhead collector lines (Option)				
New Collector Access Roads and Transmission Structure turn-arounds	0 acres	0 acres	2.5 acres	0 acres
Collector Line Structure Work Area	2.9 acres	0 acres	0 acres	0 acres
Wire Pulling and Tensioning Sites	1.4 acres	0 acres	0 acres	0 acres
Total	*4.3 acres*	*0 acres*	*2.5 acres*	*0.0 acres*

GOVERNMENT AGENCIES INVOLVED

Federal

- Bureau of Land Management
- United States Fish and Wildlife Service
- Bureau of Indian Affairs
- United States Army Corps of Engineers
- Environmental Protection Agency

Tribal

- Moapa Band of Paiutes

State

- Public Utilities Commission of Nevada
- State Historic Preservation Office
- Nevada Department of Wildlife
- Nevada Division of Environmental Protection

Local

- Clark County

CONSTRUCTION OF THE FACILITIES

Geotechnical Investigation

Prior to construction, geotechnical surveys would be conducted along the collector line route to provide information for the proposed trenching or design of transmission structures if built as an overhead line. The geotechnical studies would allow for observations of subsurface conditions and soil samples would be obtained for laboratory testing and soil classification. Results of the analysis would help inform several design-related parameters including cement types and corrosion protection of foundation elements.

The subsurface exploration program would involve drilling borings along the collector line routes with a CME1050 rubber tire 4x4 drill rig or similar equipment. A 4x4 side-by-side all-terrain vehicle (aka: "gator") and/or pickup trucks would be used to drive support personnel to boring locations. During the borings, drive samples would be obtained from the subsurface for laboratory testing.

If necessary, test pits would also be conducted along the route. Test pits would be conducted using a standard rubber tire backhoe equipped with a 24-inch bucket, or similar equipment. The test pits would be approximately 2 feet wide, 7 feet long, and 8 feet deep. No personnel will enter the test pits. About 15 gallons (three 5-gallon buckets) of material would be collected from the surface to a depth of 1-foot at select test pit locations (not all test pits would be sampled). These samples may be tested in the laboratory for gradation, plasticity, maximum density, thermal resistivity, and corrosion characteristics. Each test pit would be backfilled immediately upon completion; no excavation would be left open.

Field resistivity testing may also be conducted along the route, if necessary. The field resistivity testing would be non-intrusive. Four steel pin electrodes (about the size of tent stakes) would be driven by hand into the ground about 4 inches deep, and an electrical current would be induced between the two outer electrodes. The two inner electrodes would be used to record the electrical resistivity of the current going through the earth.

Site Engineering Surveys

On-ground investigations will be completed to accurately locate the centerline of the collector lines within the ROW. The exact centerline will be chosen to best implement design criteria and to satisfy any required avoidance or minimization measures. Survey work will consist of centerline location and ROW boundaries, where necessary. Transmission structure locations (if overhead), work areas, access roads, and the route centerline will be flagged and staked, where necessary.

Timing of Activities

Heavy construction is expected to occur between 6:00 am and 5:00 pm, Monday through Friday. Additional hours may be necessary to make up schedule deficiencies or to complete critical construction activities. Some activities may require construction activities 24 hours per day, seven days per week. Low level noise activities may potentially occur between the hours of 10:00 pm and 7:00 am. Nighttime

activities could potentially include, but are not limited to, refueling equipment, staging material for the following day's construction activities, quality assurance/control, and commissioning.

Access

Existing roads will provide access for project construction, operation, and maintenance of the SBS2 Project and associated ROWs. Construction of the collector lines between the SBS2 sites and the ESMSP substation would begin with development of road access within the proposed collector line ROW. These access roads within the collector line ROW would typically be 12 feet wide and could be bladed as needed. Also, new roads could be compacted to ensure stability. The collector line access roads would not be maintained following construction.

Underground Collector Line Construction

Construction of the underground collector lines would include the following steps:

- Prior to construction of the underground collector lines, survey crews would survey the proposed route per final design, marking the center of each trench, the work limits, and junction box locations.
- Track hoe(s) would be used to excavate the trenches to design width and depth.
- Bedding material would be placed in the bottom of trenches and compacted (using the Sheep's Foot and compactor/roller attachments) to specified compaction percentage.
    - Specified backfill material (i.e. fill dirt with no rocks) utilized between conductor and bottom of trench to assure conductor is not resting on or rubbing against rocks (sharp edges), etc.
- For direct-burial, conductor would be placed on top of bedding material with spacing between conductor in compliance with design requirements
- If conduits are used, the conduit would be placed on top of the bedding material
- Backfill material would be placed over conductor or conduit in lifts (backfill layers with a specified thickness requiring compaction) which are typically 12" thick (utilizing sheeps foot and compactor attachments) until trenches are completely backfilled to grade.
- Junction boxes would be installed, secured, braced into final position/location using gravel backfill as specified
- Conductors would be terminated onto the terminal blocks, grounding rod and connectors would be completed and inspected, and testing would be conducted prior to energization

Above-Ground Collector Line Construction

If some or all the collector lines would be built overhead, the following construction methods would be used.

Pole / Structure Erection Sites

Temporary structure erection sites, typically 40 feet wide x 100 feet long would be established at each structure location. These areas would be cleared of vegetation. Each transmission structure would be set within an augured hole (tangent structures) with concrete added to secure the foundation at dead-end structures. The primary equipment used in setting foundations will be concrete trucks, auger rigs, pickup trucks, crane and front-end loaders. Holes would be excavated using a truck-mounted drill rig or a standalone auger rig if required. Poles would be delivered on a flat-bed trailer and hoisted into place by a crane. The annular space between the poles and holes would be backfilled with concrete or soil. Excavated spoil material would be spread around the temporary work areas.

Conductor Pulling and Tension Sites

One pulling and tensions site would be required on BLM-administered land for installing the conductors on the collector line structures. This pulling and tension site would be approximately 120 feet wide x 500 feet long and would be located within and adjacent to the gen-tie ROW. Conductors would be strung between transmission structures with heavy duty trucks and a telescoping boom lift. If necessary, to avoid seasonal washes some sections of conductors may be strung by either using a helicopter or by first 'walking' a light pulling rope between structures that is then used to pull in the heavier conductor. Cables will be pulled through one segment of the transmission line at a time. To pull cables, truck-mounted cable-pulling equipment is placed alongside the first and last towers or poles in a segment. Power pulling equipment is used at the front end of the segment, while power braking or tensioning equipment is used at the back end. The conductors are then pulled through the segment and attached to the insulators. Equipment is then moved to the next segment; the front-end pull site previously used becomes the back-end pull site for the next segment. After conductors have been pulled into place in a section, the conductor tension is increased to achieve a ground clearance of at least 25 feet prior to moving to the next section.

Water Use

Water would be used for dust suppression and soil compaction during construction. Water would be obtained from two existing wells owned by the MBOP adjacent to the ESMSP solar facility site.

Industrial Wastes and Toxic Substances

Minimal levels of materials that have been defined as hazardous under 40CFR, Part 261 would be used during the construction of the collector lines. Hazardous materials spill kits would be carried in vehicles for any small spills that could occur. Hazardous materials would not be disposed of on-site, released onto the ground, underlying groundwater, or any surface water. Fully enclosed containment would be provided for all refuse. All construction waste, including trash, solid waste, petroleum products, and other hazardous materials, would be disposed of at a properly licensed waste disposal facility.

Personnel and Vehicles

The workers and vehicles expected to be required to construct the proposed collector lines are estimated below (per structure):

Table 6 – Collector Line Construction Equipment and Construction Workforce

Equipment Type	Quantity	PERSONNEL
Survey Collector Line Route		
Off-highway trucks	2	2: Driver
Clear and Grade ROW Access Roads		
Crawler Tractor	1	2: Driver + Spotter
Grader	1	2: Driver + Spotter
Drum Roller Compactor	1	2: Driver + Spotter
UNDERGROUND COLLECTOR LINES		
Trenching		
Crawler Tractor	1	2: Driver + Spotter
Backhoe / Excavator	2	2: Driver + Spotter
Backhoe	2	2: Driver + Spotter
Cable Installation		
Cable Truck	1	2: Driver + Spotter
Crew Truck(s)	6	6: Linemen/Groundmen
Backfilling		
Grader	1	2: Driver + Spotter
Spadefoot Compactor	1	2: Driver + Spotter
Drum Roller Compactor	1	2: Driver + Spotter
OVERHEAD COLLECTOR LINES		
Clear and Grade Tower Structures		
Crawler Tractor	1	2: Driver + Spotter
Grader	1	2: Driver + Spotter
Drum Roller Compactor	1	2: Driver + Spotter
Off-highway trucks	3	3: Driver
Foundation Installation		
Drilling Rig	1	3: Driver + Operator + Support
Crane	2	6: 2 Drivers + 2 Operators + 2 Spotters
Boom Truck	1	1: Operator
Flat Bed Truck	1	1: Operator
Crew Truck(s)	6	6: Crew
Concrete Truck	1	1: Driver/Operator
Pole Erection		
Bucket Lift Truck	1	2: Driver + Operator
Boom Truck(s)	1	3: Driver + Operator + Support
Crew Truck(s)	6	6: Linemen/Groundmen
Cable Pulling		
Heavy-duty Truck (Puller)	1	2: Driver + Operator
Heavy-duty Truck (Tensioner)	1	2: Driver + Operator
Crew Truck(s)	6	6: Linemen/Groundmen
Crew Truck(s)	6	3: Spotters
Helicopter	1	2: Pilot + Spotter

In addition, the project will require the following:

- Engineering Surveys – Truck(s) and 3 crew
- Cleanup and Restoration – Truck(s) and 4 crew

Final design characteristics and corresponding final equipment and personnel requirements will be determined in the detailed design phase of the project.

OPERATIONS AND MAINTENANCE

Collector Line Operation

The proposed collector lines would operate continuously throughout the life of the SBS2 Project. Following construction, activities associated with the gen-tie would be restricted to inspection and occasional maintenance and repair. Line access roads would not be regularly maintained, but as-needed blading may be conducted to provide access to transmission structures for maintenance activities.

Additional operations and maintenance activities may include insulator washing (for the above-ground option), periodic inspections, repair or replacement of lines or insulators, or response to emergency situations (e.g., outages) to restore power (infrequent/as needed).

Except for emergency situations and outages, most maintenance work would take place between 7 am and 6 pm, Monday through Friday. Transmission line conductors may occasionally need to be upgraded or replaced over the life of the line. Old cables will be removed and replaced if needed.

Safety

Safety precautions and emergency systems will be implemented as part of the design and construction of the transmission line to ensure safe and reliable operation. Administrative controls may include classroom and hands-on training in operating and maintenance procedures, general safety items, and a maintenance program plan. These controls will compliment transmission line design and monitoring features to enhance safety and reliability.

DECOMMISSIONING

Following the useful life of the Proposed Project, project components would be decommissioned and removed from the ROW. Prior to dismantling or removal of equipment, staging areas would be delineated along the collector line routes as appropriate. All decommissioning activities would be conducted within designated areas. Work to decommission the collector lines is anticipated to be conducted within the boundaries of existing easements and rights of way.

All decommissioning of transmission structures, electrical devices, equipment, and wiring/cabling will be in accordance with local, state and federal laws. Any electrical decommissioning will include obtaining required permits, and following applicable safety procedures before de-energizing, isolating, and disconnecting electrical devices, equipment, and cabling.

CLARK COUNTY

Moapa Town

Muddy River

California Wash

78

Southern Bighorn Solar II Project

Moapa River Indian Reservation

15

40

Crystal Substation

Legend

Project Components

- Southern Bighorn Solar II Project - Max Fenceline
- Underground ROW
- Gen-Tie ROW
- Existing Access Road

General Features

- Existing Substation
- Interstate
- US / State Highway
- Railroad
- Stream or River
- Designated Utility Corridor
- Municipal Boundary

Jurisdictional Land Ownership

- Bureau of Land Management Land
- Indian Reservation
- Private Lands

0 0.5 1 1.5 2

Miles

Universal Transverse Mercator
North American Datum 1983
Zone 11 North, Meters

Southern Bighorn Solar II Project

Overview of BLM ROWs

Map Extent: Clark County, Nevada

Date: 08-12-20 | Author: rnc

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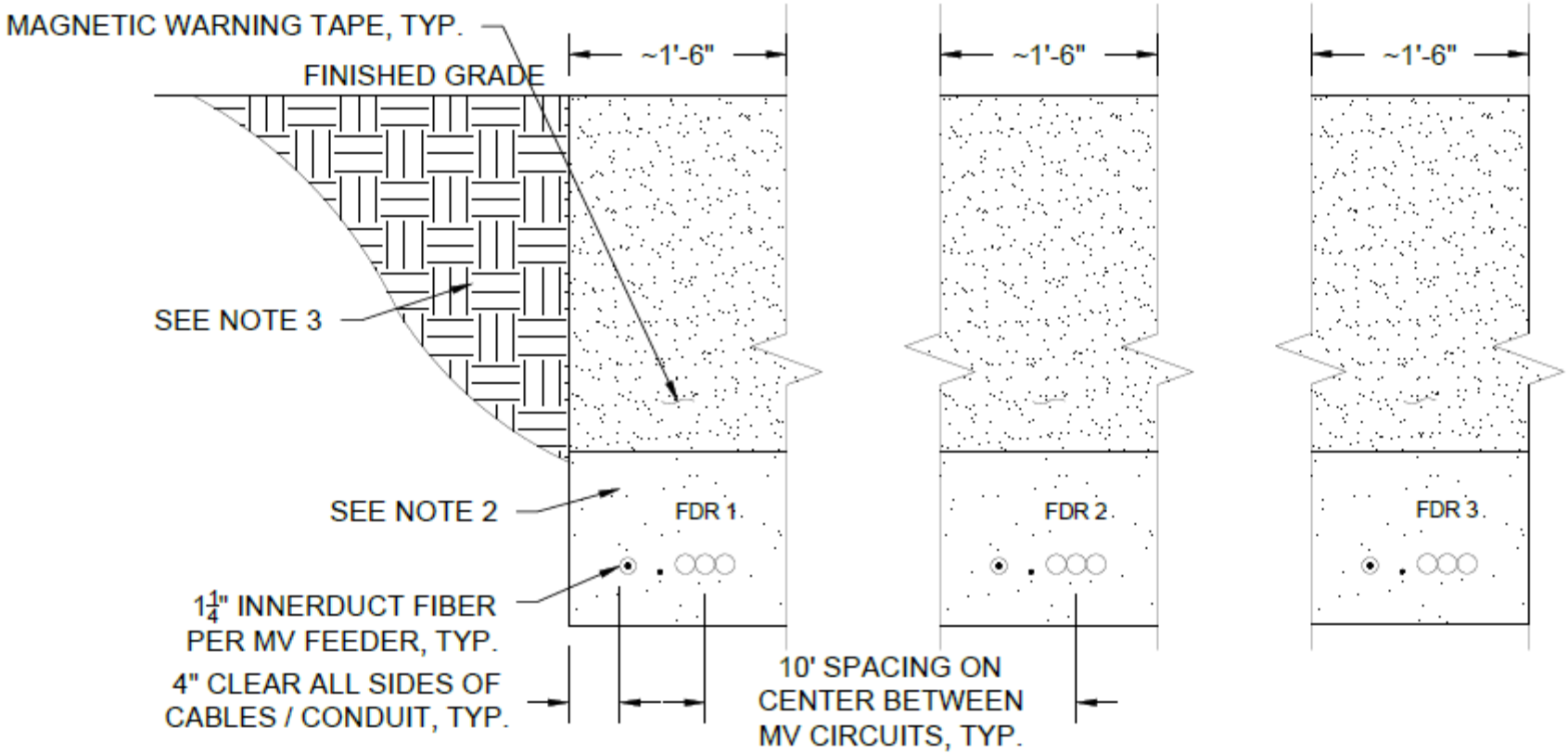

MULTIPLE 34.5 kV FEEDER TRENCH SECTION DETAIL

Scale: N.T.S.

NOTES:

1. BACKFILL SECTION ABOVE CABLE BACKFILL - VISUALLY SCREENED NATIVE SOIL COMPACTED TO 90 PERCENT STANDARD PROCTOR, EXCEPT IN STRUCTURAL AREAS SHALL BE COMPACTED TO 95 PERCENT STANDARD PROCTOR. DC TRENCH PASSING UNDER ROADS IS CONSIDERED A STRUCTURAL AREA.
2. BACKFILL SECTION AROUND CABLES - PROVIDE 1 FOOT NATIVE GRANULAR BEDDING WITH GRANULES NOT TO EXCEED 3/8 INCH AND COMPACTED TO 90 PERCENT STANDARD PROCTOR. MINIMUM 4 INCHES BELOW AND 8 INCHES ABOVE CONDUCTORS.
3. UNDISTURBED NATIVE SOIL.
4. TRENCH GROUND CONDUCTOR HAS NO SET SPACING DISTANCE FROM OTHER CABLES
5. FOR TRENCHES WIDER THAN 36", MULTIPLE WARNING TAPES TO BE USED
6. WARNING TAPE SHALL BE INSTALLED MIN 12" ABOVE CONDUCTORS PER NEC 300.5(D)(3)

Figure 2

Underground Collector Line Detail

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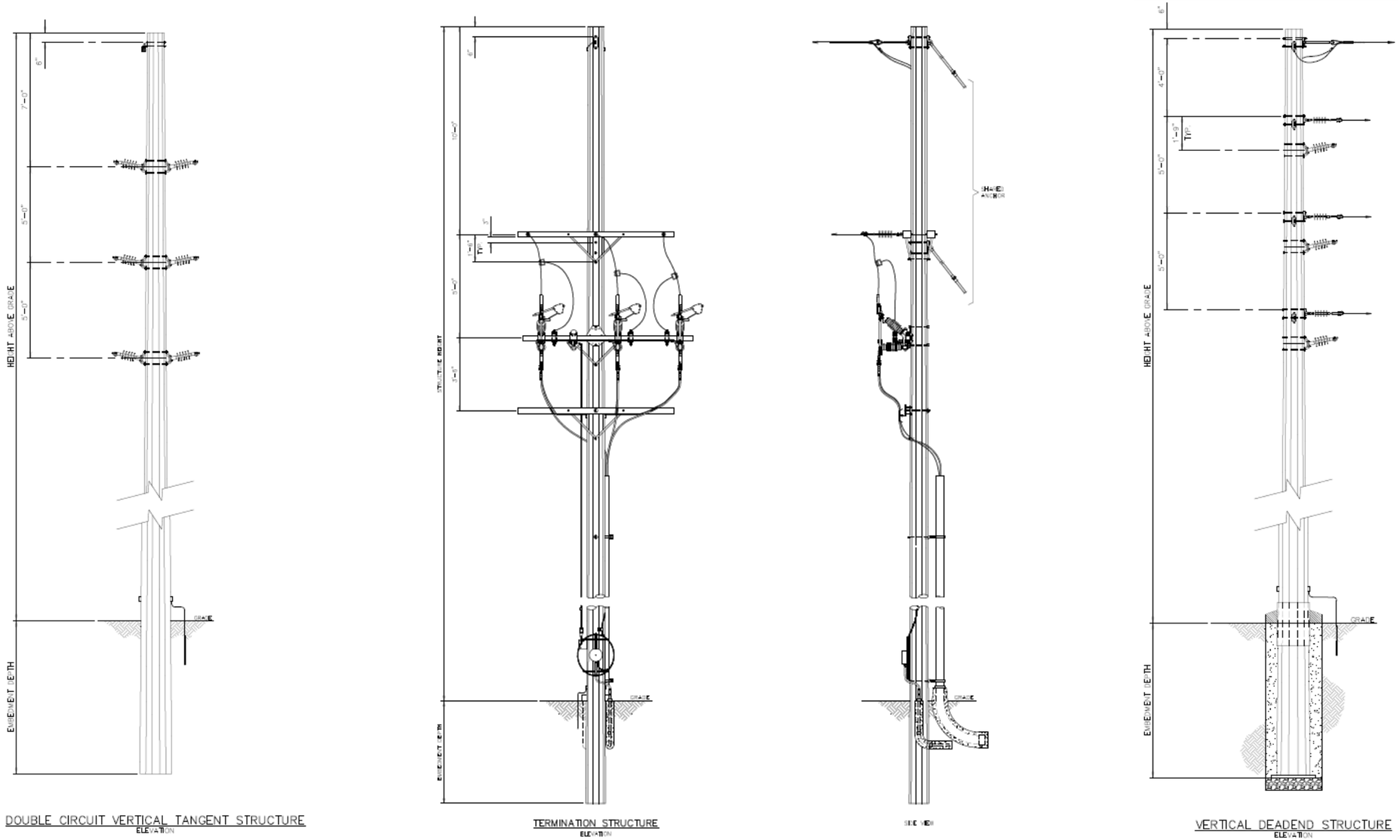

Figure 3

Overhead Collector Line Structure Detail

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PLAN OF
DEVELOPMENT
APPENDIX A

LEGAL DESCRIPTION OF BLM-MANAGED ROWs

LEGAL DESCRIPTION OF SBS 2 ROWs ON BLM-MANAGED LAND

SBS2 – Proposed Project, Legal Description for Underground Collector Line Right-of-Way

T. 16 S., R. 64 E.,
sec. 14, Lots 6, 9, 15, and 16, SW¼SE¼, and NW¼SE¼
Total Proposed Project Underground Collector Line ROW Acreage: 4.9 acres
(Moapa [within utility corridor]: 4.9 acres, BLM: 0.0 acres)

SBS2 – Proposed Project, Legal Description for Previously-Approved Gen-Tie Line Right-of-Way

T. 16 S., R. 64 E.,
sec. 12, Lots 1, 8, 9, and 14, SE¼SW¼, NW¼SE¼, SE¼NE¼
sec. 13, NW¼NW¼
sec. 14, Lots 1, 8, 9, and 11, SE¼NE¼, and NW¼SE¼
Acres: 21.4

T. 16 S., R. 65 E.,
sec. 5, Lot 7
sec. 6, Lot 8
sec. 7, Lot 7
Acres: 15.4

T. 15 S., R. 65 E.,
sec. 12, Lots 6, 7, and 14, SW¼SE¼, SE¼SE¼, NE¼SE¼
sec. 13, Lot 1, SW¼NW¼, SE¼NW¼, NE¼NW¼, NW¼NE¼
sec. 14, Lots 6, 7, and 14, SW¼SE¼, NE¼SE¼
sec. 22, Lots 7, 8, 9, 16, and 17
sec. 23, Lots 4, 5, and 7
sec. 27, Lots 4, 5, and 7
sec. 28, Lots 12, 13, 14, 21, and 22
sec. 32, Lots 1, 11, 12, 17, and 18, SW¼SE¼, NW¼SE¼, NE¼SE¼, SE¼NE¼
sec. 33, Lots 4, 5, and 6
Acres: 61.1

T. 15 S., Range 66E
sec. 7, Lot 2
Acres: 2.5
Total Proposed Project Gen-Tie ROW Acreage: 100.4 acres
(Moapa [within utility corridor]: 97.9 acres, BLM: 2.5 acres)

SBS2 – Proposed Project, Legal Description for Short-Term Right-of-Way

T. 16 S., R. 64 E.,

sec. 14, Lot 15

Acres: 1.7

Total Proposed Short-Term Right-of-Way Acreage: 1.7 acres
(Moapa [within utility corridor]: 1.7 acres, BLM: 0.0 acres)

SBS2 – Legal Description for Primary Solar Facility Access Road

T. 17 S., R. 64 E.

sec. 10, Lot 7, SE¼SW¼, NE¼SW¼, SE¼NW¼

sec. 15, NE ¼NW¼

Acres: 3.8

T. 16 S., R. 64 E.,

sec. 12, Lots 1, 8, 9, and 14, SE¼SW¼, SW¼SE¼, NW¼SE¼, SE¼NE¼

sec. 13, Lot 12, NW¼NW¼

sec. 14, Lots 1, 8, 9, 11, and 12, SE¼SW¼, SW¼SE¼, NW¼SE¼, SE¼NE¼

sec. 22, SW¼SE¼, NW¼SE¼, SE¼SW¼, SE¼NE¼, NE¼SE¼

sec. 23, Lots 6, and 8, SW¼NW¼, NW¼NW¼, NE¼NW¼

sec. 27, SW¼NW¼, NE¼NW¼, NW¼NW¼

sec. 28, SE¼SE¼, NE¼SE¼, SE¼NE¼

sec. 33, SW¼SE¼, SE¼SE¼, NE¼SE¼, SE¼NE¼, NE¼NE¼

Acres: 23.7

T. 16 S., R. 65 E.,

sec. 5, Lot 7

sec. 6, Lot 8

sec. 7, Lot 7

Acres: 4.8

T. 15 S., R. 65 E.,

sec. 12, Lot 6, SW¼SE¼, SE¼SE¼, NE¼SE¼

sec. 13, NW¼SW¼, SW¼NW¼, SE¼NW¼, NE¼NW¼, NW¼NE¼

sec. 14, SW¼SE¼, SE¼SE¼, NE¼SE¼

sec. 22, Lots 7, 8, 9, 16, and 17

sec. 23, Lots 3, 4, 5, 7

sec. 27, Lots 4, 5 and 7

sec. 28, Lots 12, 13, 14, 21, and 22

sec. 32, Lots 12, and 18, SW¼SE¼, NE¼SE¼, NW¼SE¼, SE¼NE¼

sec. 33, Lots 4, 5, and 6

Acres: 12.5

T. 15 S., R. 66 E.,

sec 7, Lots 1, 2, 3, and 4
sec. 18, Lot 1
Acres: 1.8

Total Primary Solar Facility Access Road ROW Acreage: 42.6 acres

(Moapa [within utility corridor]: 36.9 acres, BLM: 5.7 acres)

SBS2 – Option, Legal Description for Overhead Collector Line Right-of-Way

T. 16 S., R. 64 E.,

sec. 14, Lots 6, 9, 15, and 16, SW¼SE¼, and NW¼SE¼

Total Proposed Project Overhead Collector Line ROW Acreage: 7.4 acres

(Moapa [within utility corridor]: 7.4 acres, BLM: 0.0 acres)

PLAN OF DEVELOPMENT
APPENDIX B

MAPS OF BLM-MANAGED ROWs

FOR

COLLECTOR LINES

UNDERGROUND COLLECTOR LINES

Legend

Project Components

- Underground ROW
- Mapbook Page

General Features

- Designated Utility Corridor
- Township / Range Boundary
- Section Boundary

Jurisdictional Land Ownership

- Indian Reservation

0 1,000 2,000

Feet

Universal Transverse Mercator
North American Datum 1983
Zone 11 North, Meters

Southern Bighorn II Solar Project

SBS2 UNDERGROUND MAPBOOK

Map Extent: Clark County, Nevada

Date: 08-17-20		Author: rnc

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SOUTHERN BIGHORN SOLAR PROJECT

SBS2 UNDERGROUND MAPBOOK

LEGEND

Project Components

- Underground ROW

General Features

- Interstate
- Railroad
- Designated Utility Corridor
- Township / Range Boundary
- Section Boundary

Jurisdictional Land Ownership

- Bureau of Indian Affairs Land (No Shading)

N

0 50 100 150 200

Feet

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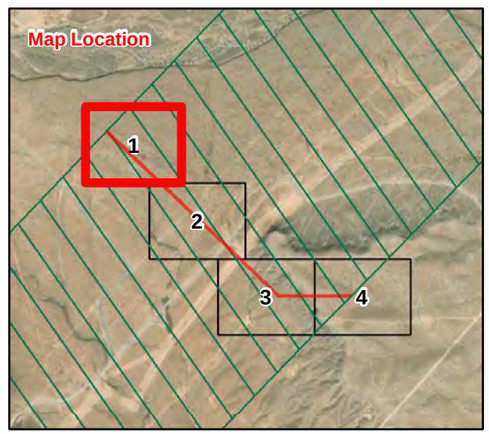

SOUTHERN BIGHORN SOLAR PROJECT

SBS2 UNDERGROUND MAPBOOK

LEGEND

Project Components

Underground ROW

General Features

Interstate

Railroad

Designated Utility Corridor

Township / Range Boundary

Section Boundary

Jurisdictional Land Ownership

Bureau of Indian Affairs Land (No Shading)

0 50 100 150 200

Feet

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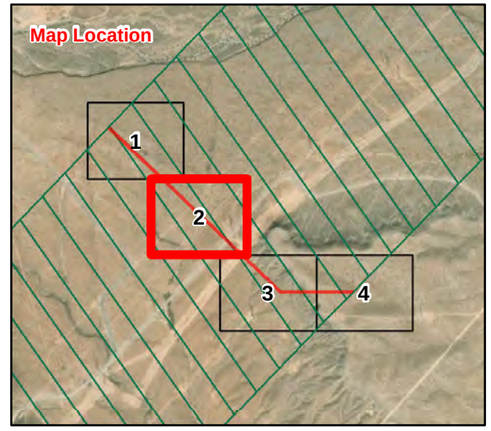

SOUTHERN BIGHORN SOLAR PROJECT

SBS2 UNDERGROUND MAPBOOK

LEGEND

Project Components

- Underground ROW

General Features

- Interstate
- Railroad
- Designated Utility Corridor
- Township / Range Boundary
- Section Boundary

Jurisdictional Land Ownership

- Bureau of Indian Affairs Land (No Shading)

N

0 50 100 150 200

Feet

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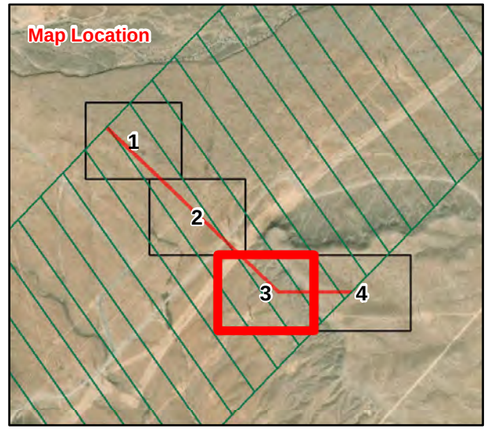

SOUTHERN BIGHORN SOLAR PROJECT

SBS2 UNDERGROUND MAPBOOK

LEGEND

Project Components

- Underground ROW

General Features

- Interstate
- Railroad
- Designated Utility Corridor
- Township / Range Boundary
- Section Boundary

Jurisdictional Land Ownership

- Bureau of Indian Affairs Land (No Shading)

N

0 50 100 150 200

Feet

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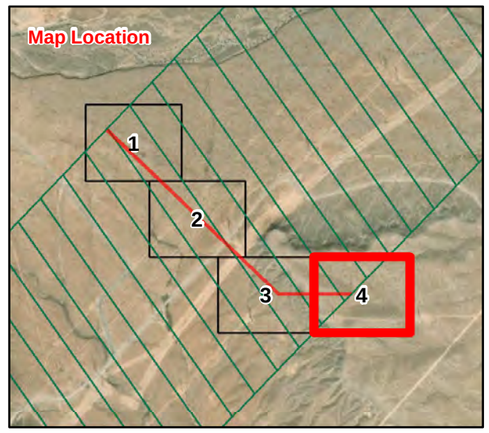

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OVERHEAD COLLECTOR LINES

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Legend

Project Components

- SBS2 Transmission Line
- Mapbook Page

General Features

- Designated Utility Corridor
- Township / Range Boundary
- Section Boundary

Jurisdictional Land Ownership

- Indian Reservation

0 1,000 2,000

Feet

Universal Transverse Mercator
North American Datum 1983
Zone 11 North, Meters

Southern Bighorn II Solar Project

SBS2 OVERHEAD MAPBOOK

Map Extent: Clark County, Nevada

Date: 08-17-20		Author: rnc

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SOUTHERN BIGHORN SOLAR PROJECT

SBS2 OVERHEAD MAPBOOK

LEGEND

- Township / Range Boundary
- Section Boundary
- Designated Utility Corridor

Proposed Project

- SBS 2 Transmission Line
- Permanent Disturbance Area
- Temporary Disturbance Area
- Right-of-Way
- Transmission Structures
- Access Road
- Tension Pulling Sites

Jurisdictional Land Ownership

- Bureau of Indian Affairs Land (No Shading)

N

0 50 100 150 200

Feet

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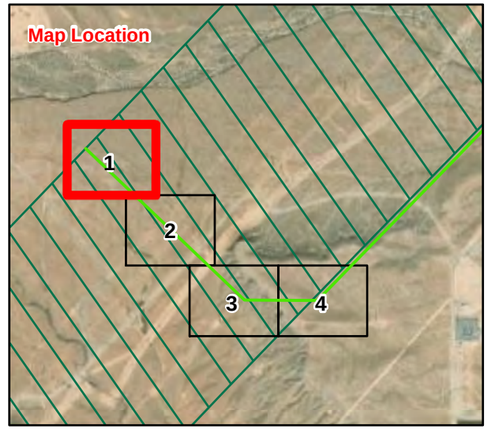

SOUTHERN BIGHORN SOLAR PROJECT

SBS2 OVERHEAD MAPBOOK

LEGEND

- Township / Range Boundary
- Section Boundary
- Designated Utility Corridor

Proposed Project

- SBS 2 Transmission Line
- Permanent Disturbance Area
- Temporary Disturbance Area
- Right-of-Way
- Transmission Structures
- Access Road
- Tension Pulling Sites

Jurisdictional Land Ownership

- Bureau of Indian Affairs Land (No Shading)

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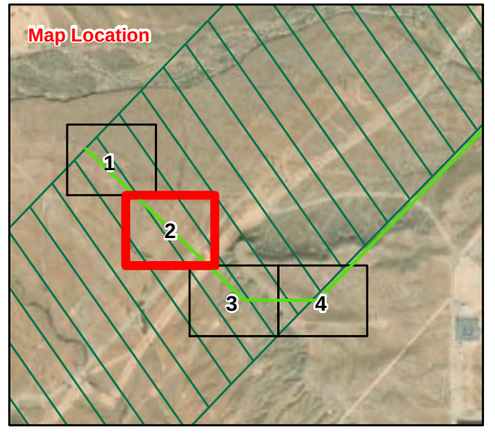

SOUTHERN BIGHORN SOLAR PROJECT

SBS2 OVERHEAD MAPBOOK

LEGEND

- Township / Range Boundary
- Section Boundary
- Designated Utility Corridor

Proposed Project

- SBS 2 Transmission Line
- Permanent Disturbance Area
- Temporary Disturbance Area
- Right-of-Way
- Transmission Structures
- Access Road
- Tension Pulling Sites

Jurisdictional Land Ownership

- Bureau of Indian Affairs Land (No Shading)

0 50 100 150 200

Feet

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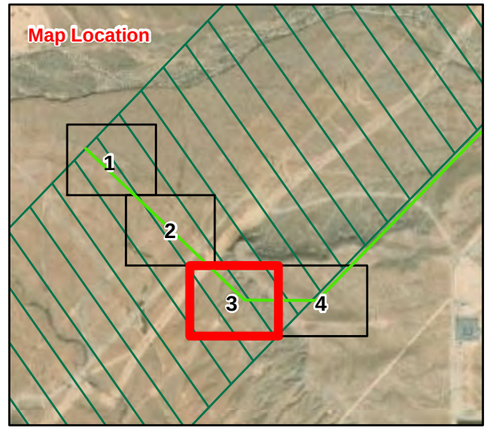

SOUTHERN BIGHORN SOLAR PROJECT

SBS2 OVERHEAD MAPBOOK

LEGEND

- Township / Range Boundary
- Section Boundary
- Designated Utility Corridor

Proposed Project

- SBS 2 Transmission Line
- Permanent Disturbance Area
- Temporary Disturbance Area
- Right-of-Way
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- Access Road
- Tension Pulling Sites

Jurisdictional Land Ownership

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N

0 50 100 150 200

Feet

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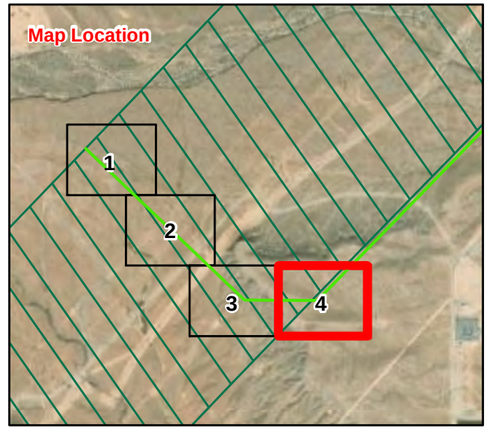

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Appendix D

Site Restoration Plan

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Southern Bighorn Solar Projects

SITE RESTORATION PLAN

TABLE OF CONTENTS

LIST OF ACRONYMS AND ABBREVIATIONS

BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BMP	best management practice
EIS	Environmental Impact Statement
gen-tie	transmission generation interconnection
Moapa Band	Moapa Band of Paiute Indians
MWac	megawatts alternating current
O&M	operations and maintenance
Plan	Site Restoration Plan
PV	photovoltaic
Reservation	Moapa River Indian Reservation
ROW	right-of-way
SBSP I	Southern Bighorn Solar Project I
SBSP II	Southern Bighorn Solar Project II
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1.0 INTRODUCTION

300MS 8me, LLC and 425LM 8me, LLC (Applicants), both subsidiaries of 8minute Solar Energy, intend to construct, operate and maintain (O&M), and decommission two solar photovoltaic (PV) energy generating facilities on the Moapa River Indian Reservation (Reservation) in Clark County, Nevada. The projects are referred to as the Southern Bighorn Solar Project I (SBSP I) and Southern Bighorn Solar Project II (SBSP II) and are collectively referred to as the Projects and/or SBSPs.

1.1 Purpose and Objectives

The purpose of this Site Restoration Plan (Plan) is to outline the measures that will be taken related to restoration and revegetation for the SBSPs and the various factors and methods to be applied toward restoring the site to as close to pre-project conditions as practicable. The goal of this Plan and its successful implementation is to mitigate the potential impacts from the temporary and permanent disturbance associated with the Projects and to facilitate managed and natural restoration of the site and disturbance areas toward achieving pre-project or similar drainage patterns. This plan is a draft and will be updated over time prior to construction.

Appendix B (Project Design Features and Best Management Practices) of the Environmental Impact Statement (EIS) states the following:

- Site Restoration Plans will be implemented as needed to limit impacts to temporary disturbance areas as much as practicable.
- Potential closure activities could include re-grading and restoration of original site contours and re-vegetation of areas disturbed by closure activities in accordance with the Site Reclamation Plan. Revegetation seed mixes will be composed of native plant species.

For a full list of best management practices (BMPs), refer to **Appendix B** of the EIS.

The objectives of this plan include:

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

The following procedure and task matrix (**Table D-1**) identifies the specific BMPs that will be implemented, as needed, to minimize disturbance and implement restoration of the Project sites.

Table D-1. Procedures and Task Matrix

BMP #	Site Procedure(s)	Task Assignment and Schedule
1	Minimize temporary disturbance areas as much as practicable.	Construction supervisors and staff will coordinate and perform work to minimize temporary disturbance areas as much as practicable.
2	Grading on the solar site will be minimized to only those areas where necessary to meet the construction and operational requirements of the Projects.	Construction supervisors and staff will coordinate and perform work to minimize unnecessary grading as much as practicable.
3	All work area boundaries will be conspicuously staked, flagged, or otherwise marked to minimize surface disturbance activities. All workers, equipment, vehicles, and construction materials shall remain within the right-of-way (ROW), existing roads, and designated areas. Staging areas will be located in previously disturbed areas whenever possible.	Qualified biologists and environmental managers will coordinate with construction supervisors and staff to ensure that all work area boundaries are clearly marked as much as practicable and that all workers stay on designated roadways and in designated areas.
4	Preserve site-specific materials for use in the restoration phase, where practicable.	Construction supervisors and staff will preserve materials, as practicable, prior to the start of work.
5	Implement restoration practices in a timely manner, thereby reducing secondary effects including soil erosion and establishment of noxious plant species.	Construction supervisors and environmental managers will coordinate to ensure revegetation occurs within a timely manner.

2.0 ROLES AND RESPONSIBILITIES

All Project construction, O&M, and decommissioning employees, contractors, and sub-contractors will be familiar with the Plan and will be responsible for implementing this Plan.

All workers, contractors, and contractor staff shall:

- Minimize initial disturbance within the Project area.
- Preserve site-specific materials for use in the restoration phase where practicable.

Environmental managers and/or construction supervisors shall:

- Implement restoration practices in a timely manner, thereby reducing secondary effects including soil erosion and establishment of noxious plant species; and
- Return temporary disturbance areas to conditions similar to those that existed prior to Project initiation by restoring soils and topography, as feasible.

Individuals responsible for general program auditing and reporting include:

- Environmental managers and representatives, as they relate to restoration measures.

3.0 PROJECT SUMMARY

3.1 Project Location

The Projects would be located on the Moapa River Indian Reservation (Reservation) approximately 30 miles northeast of Las Vegas in Clark County, Nevada, west of Interstate 15 and east of U.S. Highway 93. The Projects would be located in Township 16 South, Range 64 East that includes all or parts of Sections 12–14, 22–27, and 33–36; Township 16 South, Range 65 East, Sections 4–9, 16–18, 30, and 31; and Township 17 South, Range 64 East, Sections 10–12, Mount Diablo Baseline and Meridian, Nevada. This land was set aside by the Moapa Band of Paiute Indians (Moapa Band) exclusively for the Projects.

3.2 Project Description

The Applicants, have each entered into agreements with the Moapa Band to lease two adjacent sections of land for up to 50 years on the Reservation for the purposes of constructing, O&M, and eventual decommissioning of solar PV electricity generation facilities (referred to as the solar fields) and battery energy storage systems. The two solar projects include the solar fields, access roads, and collector lines. **Figure D-1** shows the general location of the Project area.

The Projects would generate a combined capacity of up to 400 megawatts alternating current (MWac) of electricity: 300 MWac for SBSP I and 100 MWac for SBSP II. Power generated from the Projects would be conveyed to the regional transmission system via the existing transmission generation interconnection (gen-tie) line to NV Energy's existing Reid-Gardner Substation. The solar fields would be constructed on up to approximately 2,600 acres for SBSP I and 1,000 acres for SBSP II (3,600 acres combined) within a lease option area of approximately 6,355 acres of tribal trust land within the Reservation (**Figure D-2**). Construction of SBSP I is expected to take approximately 14 to 16 months and construction of SBSP II is expected to take approximately 8 to 10 months. The two Projects may be constructed simultaneously or sequentially. The Applicants expect that construction would commence in the fourth quarter of 2021.

The Projects are estimated to result in approximately 501 acres of permanent disturbance for SBSP I and 297 acres of permanent disturbance for SBSP II, as well as 2,141 acres of temporary disturbance for SBSP I and 731 acres of temporary disturbance for SBSP II. Permanent disturbance areas would be those areas where the surface of the ground is not restored to its existing condition after construction, such as those relating to foundations, new access roads and the collector line ROW. Temporary disturbance areas include those where construction activity would take place but where restoration of the surface would be possible, such as those relating to temporary work areas, pull sites, solar fields, and laydown yards. In some places, areas of temporary disturbance would overlap with areas previously disturbed.

None of the temporary or permanent disturbance would occur on Bureau of Land Management (BLM) land because the only Project components on BLM land are existing access roads and the existing gen-tie line ROW, both of which would not require disturbance for the Projects. The temporary and permanent disturbance associated with the solar fields and new access roads are located entirely on the Reservation. The permanent disturbance associated with the collector lines are located on the Reservation and within the BLM-managed designated utility corridor also located on the Reservation.

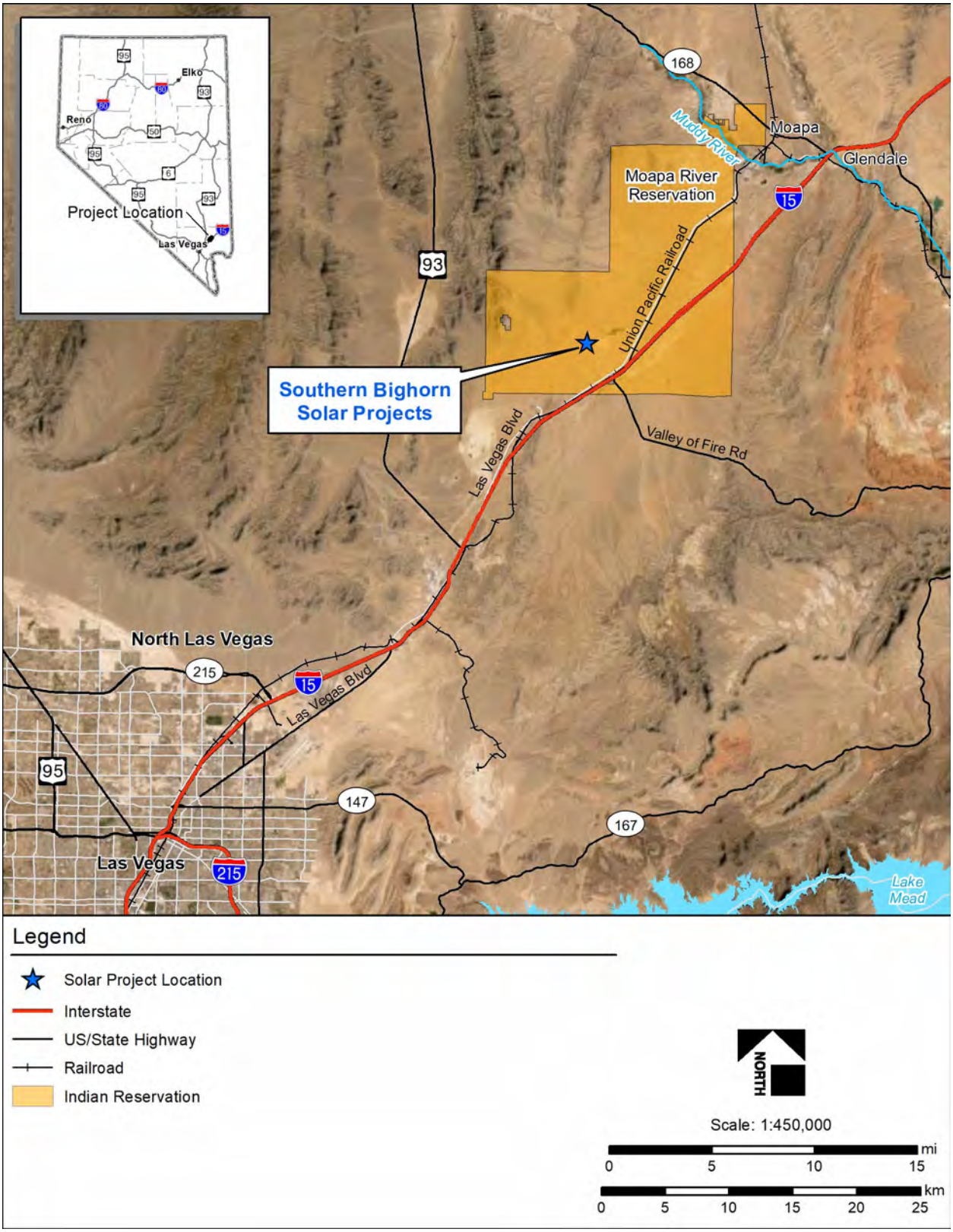

Figure D-1. Project Location

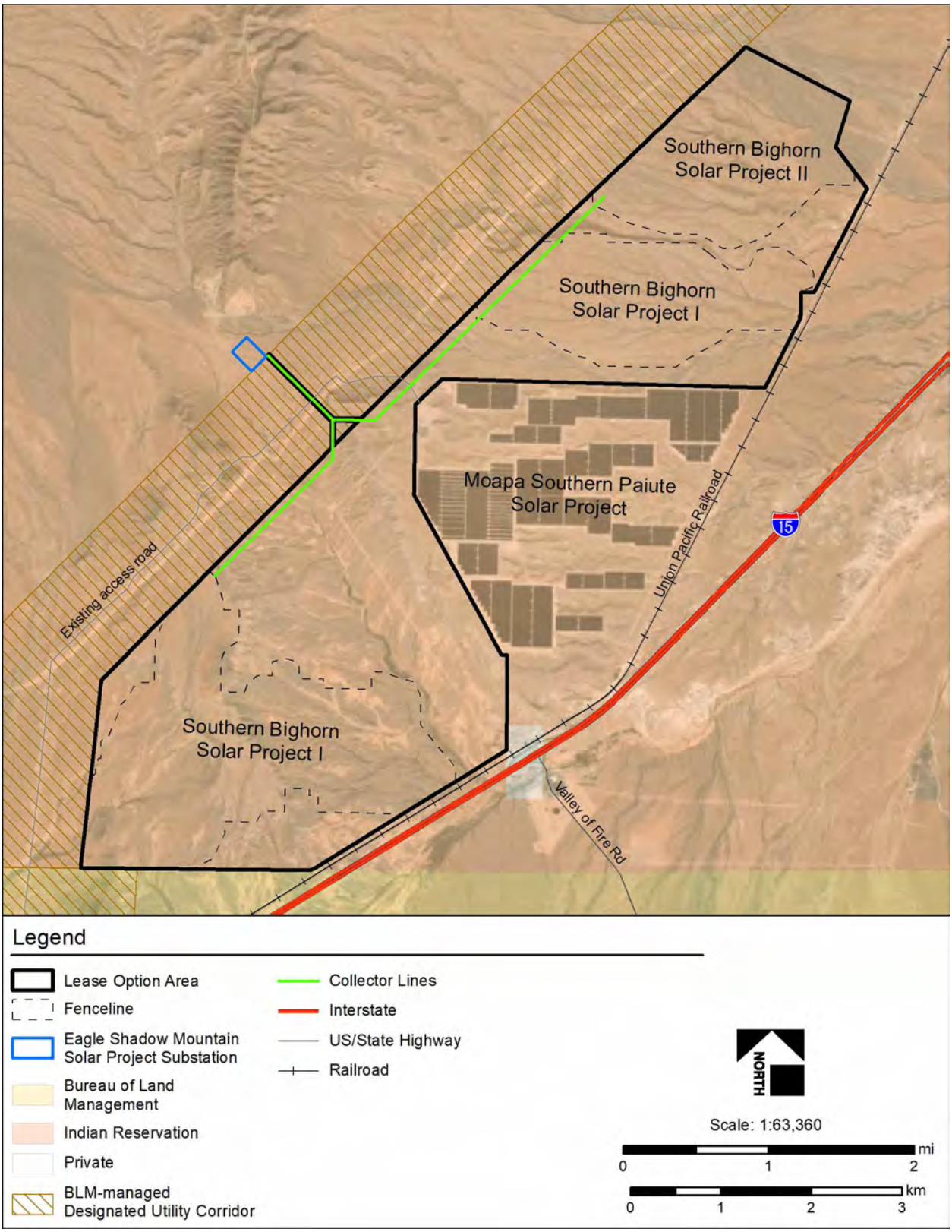

Figure D-2. Project Area

4.0 EXISTING CONDITIONS

4.1 Vegetation

The Projects are located in the Mojave Warm Desert and Mixed Desert Scrub habitat, which includes the creosotebush, Joshua tree forest, and tall and short blackbrush plant communities (Wildlife Action Plan Team 2012).

Vegetation in the lease option area is primarily composed of Sonora-Mojave Creosotebush-White Bursage Desert Scrub (87 percent; **Figure D-3**). This community is typically dominated by creosotebush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*), which can be sparse to moderately dense (2–50 percent cover). Many other shrubs, dwarf-shrubs, and cacti may be present, often as a sparse understory. In southern Nevada, common species include saltbush (*Atriplex spp.*), Mormon tea (*Ephedra nevadensis*), desert wolfberry (*Lycium andersonii*), brittlebush (*Encelia farinosa*), and beavertail cactus (*Opuntia basilaris*). The herbaceous layer is typically sparse but can be abundant with ephemerals after spring rains. Herbaceous species common in the region include phacelia (*Phacelia* spp.), desert trumpet (*Erigonium inflatum*), cryptantha (*Cryptantha* spp.), and low woollygrass (*Dasyochloa pulchella*).

The North American Warm Desert Wash vegetation community covers 11 percent of the lease option area (**Figure D-3**). The vegetation of desert washes is highly variable, ranging from sparse and patchy to moderately dense. It typically occurs along the banks of washes but may occur within the channel. The woody layer is typically intermittent and relatively open and is usually dominated by shrubs and small trees such as catclaw (*Senegalia greggii*) and desert willow (*Chilopsis linearis*) (U.S. Geological Survey [USGS] 2005).

The Sonora-Mojave Mixed Salt Desert Scrub vegetation community accounts for the remainder of the vegetation in the lease option area (1 percent; **Figure D-3**). This community is typical of saline basins in the Mojave Desert and most often occurs around the edge of playas. Vegetation is typically composed of one or more saltbush species and other halophytic (salt tolerant) plants such as iodinebush (*Allenrolfea occidentalis*), seepweed (*Suaeda* spp.), and alkali sacaton (*Sporobolus airoides*) (USGS 2005).

Very small areas of North American Invasive Southwest Riparian Woodland and Shrubland (15 acres) and North American Warm Desert Bedrock Cliff and Outcrop (2 acres) are also present in the lease option area (**Figure D-3**). Land cover types within the collector line ROW, gen-tie line corridor, and existing and new access roads follow a distribution similar to the lease option area (Lowry Jr. et al. 2005; USGS 2005).

The majority of these vegetation types are on Reservation land, though there are small portions of the Projects on lands managed by the BLM. On BLM-managed lands, the Project area includes existing access roads and gen-tie ROW on BLM land and existing access roads, gen-tie line ROW, and collector line ROW on the Reservation within the BLM-managed designated utility corridor. The portion of existing access roads and gen-tie line ROW on BLM land includes 6 acres of Sonora-Mojave Creosotebush-White Bursage Desert Scrub vegetation and 3 acres of North American Warm Desert Wash vegetation. The portion of existing access roads, gen-tie line ROW, and collector line ROW within the BLM-managed utility corridor includes 34 acres of North American Warm Desert Wash vegetation and 122 acres of Sonora-Mojave Creosotebush-White Bursage Desert Scrub vegetation. Of these areas managed by BLM, only the collector line ROW within the BLM-managed designated utility corridor would require disturbance. Disturbance is not proposed for the existing access roads and gen-tie line ROW; thus, this restoration plan does not apply to the existing access roads and gen-tie line ROW.

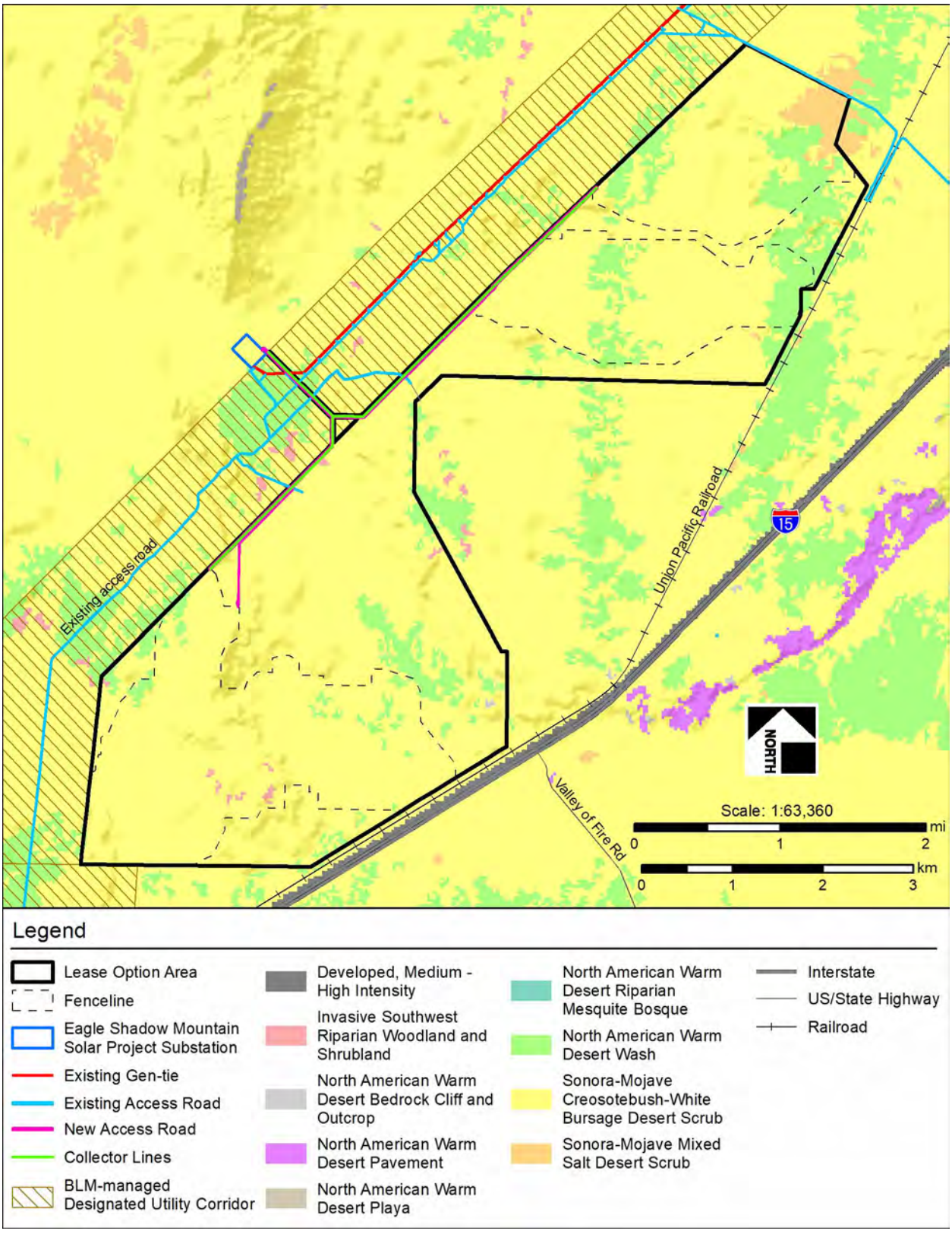

Figure D-3. Vegetation Communities in the Project Lease Option Area and Project Area

In southern Nevada, washes tend to support a higher diversity and density of cacti and yucca than the surrounding landscape. Vegetation surveys conducted for previously approved solar projects on the Reservation identified numerous cacti and yucca species including cholla (*Cylindropuntia* spp.), barrel cactus (*Ferocactus cylindraceus*), hedgehog cactus (*Echinocereus engelmannii* var. *chrysocentrus*), and Mojave yucca (*Yucca schidigera*). Higher densities of big galleta grass (*Pleuraphis rigida*) are also commonly reported in washes in this region (BIA 2012, 2014, 2019).

Throughout the Mojave Desert, native understory vegetation is being replaced with invasive species such as red brome (*Bromus rubens*), cheatgrass (*Bromus tectorum*), Sahara mustard (*Brassica tournefortii*), halogeton (*Halogeton glomeratus*), and Russian thistle (*Salsola spp.*). Non-native annual grasses such as red brome, cheatgrass, and Mediterranean grass (*Schismus barbatus*) compete with native forage plants, and the fuel these plants create has led to increased fires in parts of the Mojave Desert where they were historically rare (Invasive Weed Awareness Coalition 2006).

4.2 Federally-listed and Candidate, Threatened, or Endangered Plant Species

A list of plant species protected under the Endangered Species Act that may occur within the Project area was obtained from the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation system on September 10, 2020 (this can be found in the Biological Assessments for each Project in **Appendix M** of the EIS). No plant species listed under the Endangered Species Act as candidate, threatened, or endangered have the potential to occur within the Project area.

4.3 BLM Sensitive and State-listed Plant Species

Multiple plant species are protected under State of Nevada Revised Statute 527 and/or as BLM Sensitive species. However, there is no jurisdiction for protection of these species on BIA-managed lands. The only portion of the Projects where protection of BLM-Sensitive Species and Nevada State-listed species is applicable is on the 9 acres of existing access road and existing gen-tie line ROW on BLM lands. Construction, O&M, and decommissioning of these Project components would not result in any disturbance; therefore, State-listed and BLM Sensitive species are not addressed in this Site Restoration Plan.

5.0 PHASES OF RESTORATION

Restoration and revegetation activities will occur primarily in two phases: (1) post-construction and (2) post-decommissioning.

5.1 Post-construction

Post-construction restoration activities focus on areas that have been temporarily disturbed and will not experience additional surface-disturbing activities (e.g., service roads required during construction, equipment and material laydown areas, etc.). The restoration areas do not include areas where the vegetation has been crushed and/or trimmed (e.g., under the solar arrays) because crushing and/or trimming is performed to facilitate regrowth during operations since the roots are left intact. Seeds of native herbaceous plants may be used to revegetate temporary work areas and other areas that will not be disturbed following construction. Successful revegetation will decrease the potential for soil erosion, preserving suitable conditions for plant growth, as well as maintaining structural support and foundation for the installed solar modules.

5.2 Post-decommissioning

Areas of permanent disturbance, as well as areas where low-growing vegetation has been maintained (e.g., under the solar arrays), will be reclaimed following decommissioning at the end of the life of the Projects, which is expected to be at least 50 years. This process is documented in a separate Decommissioning Plan (**Appendix F** of the EIS) but may follow the methods for rehabilitation and monitoring described herein for temporarily disturbed areas.

Post-decommissioning restoration efforts will focus on all remaining areas of disturbance within the solar facility. Other Project features that occur beyond the solar facilities, including roads and collector lines, will also be restored and revegetated. Post-decommissioning restoration will be based on similar regulations, guidelines, practices, and techniques as previously described in this plan. The goal of post-decommissioning restoration is to restore the Project area to pre-construction conditions to the greatest extent practicable.

6.0 RESTORATION ACTIONS

6.1 Construction Tasks

As previously described, temporary disturbance for the Projects occurs on the Reservation and within the BLM-managed designated utility corridor on the Reservation. Prior to the initiation of Project construction, the SBSPs will be surveyed and staked. Survey work will consist of locating the site and ROW boundaries, the locations of proposed facilities, and the centerlines of linear features.

During construction, vegetation will be permanently cleared from new access roads and internal access roads within the solar fields and at inverter stations and O&M facilities. Within the solar field, native vegetation will be crushed or left in place to the extent possible with some selective trimming as needed to create a safe work environment and avoid interference with the movement of the solar panels. Vegetation within the solar arrays will be crushed or driven over, and in some cases, trimmed to a height of 18 inches, leaving the roots intact to facilitate regrowth during operations and reduce the establishment of invasive species. Construction equipment will drive over and crush the vegetation during installation of the solar arrays.

Restoration efforts at temporarily disturbed sites will begin as soon as practical during construction, after completing the soil-disturbing activities for the Projects. To maximize restoration success, revegetation activities may be timed to occur during cooler temperatures (i.e., spring and fall). For sites that may be disturbed more than once during the construction phase, temporary soil covering and erosion control will be implemented.

6.2 Post-construction Tasks

Temporarily disturbed areas within the solar fields include the solar arrays, construction laydown areas, temporary roads, areas requiring grading, and locations required for conductor stringing, splicing, and pulling operations to accommodate construction of the overhead portion of the collector lines (if applicable). Areas where native vegetation has been trimmed and/or crushed (e.g. under the solar arrays, where native vegetation will be left in place and trimmed to a height of 18 inches and where construction equipment will drive over and crush vegetation during installation of the arrays), may experience disturbance from construction vehicles and equipment. However, these areas will continue to be maintained for low-growing vegetation during O&M and will not be restored until the decommissioning phase.

Temporarily disturbed areas will be reclaimed as much as practicable following construction. Where appropriate, graded areas will be recontoured to pre-disturbance elevations, de-compacted, and textured. Temporarily disturbed areas will then be seeded with weed-free native seed mixes approved by BIA, as appropriate. Seeding will be conducted on suitable areas during the appropriate time of year.

All restoration efforts should be implemented as soon as practical after disturbance of a site has concluded and prior to the typical rainy season of late summer and early fall. This will minimize the potential for soil loss and establishment of invasive weeds.

7.0 WEED MANAGEMENT

Weed management will be conducted throughout the life of the Projects and in accordance with the Project-specific Integrated Weed Management Plan (**Appendix E** of the EIS).

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Appendix E

Integrated Weed Management Plan

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Southern Bighorn Solar Projects

INTEGRATED WEED MANAGEMENT PLAN

TABLE OF CONTENTS

LIST OF APPENDICES

LIST OF ACRONYMS AND ABBREVIATIONS

BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BMP	best management practice
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESMSP	Eagle Shadow Mountain Solar Project
IWMP	Integrated Weed Management Plan
gen-tie	transmission generation interconnection
GIS	geographic information system
GPS	global positioning system
LVFO	Las Vegas Field Office
Moapa Band	Moapa Band of Paiute Indians
mph	miles per hour
MWac	megawatts alternating current
NRS	Nevada Revised Statutes
O&M	operations and maintenance
PAR	Pesticide Application Report
PEIS	Programmatic Environmental Impact Statement
PPE	personal protective equipment
PUP	Pesticide Use Proposal
ROW	right-of-way
Reservation	Moapa River Indian Reservation
SBSPs	Southern Bighorn Solar Projects
SBSP I	Southern Bighorn Solar Project I
SBSP II	Southern Bighorn Solar Project II
U.S.C.	United States Code
WEAP	Worker Environmental Awareness Program

1.0 INTRODUCTION

300MS 8me, LLC and 425LM 8me, LLC (Applicants), both subsidiaries of 8minute Solar Energy, intend to construct, operate and maintain (O&M), and decommission two solar photovoltaic energy generating facilities on the Moapa River Indian Reservation (Reservation) in Clark County, Nevada. The two projects are referred to as the Southern Bighorn Solar Project I (SBSP I) and Southern Bighorn Solar Project II (SBSP II) and are collectively referred to as the Projects and/or SBSPs.

1.1 Purpose of the Plan

The purpose of this Integrated Weed Management Plan (IWMP) is to describe methods to prevent, mitigate, and control the spread and establishment of noxious and invasive weeds during the construction, O&M, and decommissioning of the Projects within the solar fields, collector line ROWs, transmission generation interconnection (gen-tie) line ROW, and along access roads. Invasive plant species and noxious weeds can degrade wildlife habitat, outcompete native vegetation, decrease plant diversity, degrade water quality, increase soil erosion, and can lead to hotter and more frequent wildland fires.

The objective of the IWMP is to understand the type and distribution of weeds in the Project area, and to implement effective control and monitoring efforts towards reducing the spread and establishment of weeds in the Project area. This Plan has been developed in accordance with applicable federal agency regulations, stipulations, and standards for the control of noxious weeds and invasive species, as documented herein. Additionally, the Applicants and their approved contractors will be responsible for implementation of this plan. Under Biological Resources in Appendix B (Project Design Features and Best Management Practices) in the Environmental Impact Statement (EIS), it states the following:

- The Applicants will implement controls at entry locations to facilitate weed management and invasive species control in order to minimize infestation of the Project sites from outside sources. Trucks and other large equipment will be checked before entering the site, and any attached mud, seeds, and/or plant matter will be removed.

2.0 ROLES AND RESPONSIBILITIES

2.1 General Roles and Responsibilities

The Applicants and all of their onsite construction and operations employees, contractors, and sub-contractors will be familiar with the IWMP and will be responsible for implementing this IWMP.

All workers, contractors, and contractor staff shall:

- Complete all required Worker Environmental Awareness Procedure (WEAP) training before starting work. WEAP training will include a section on weed spread and establishment.
- Ensure vehicles and equipment to be used onsite are inspected for excess soil or signs of noxious weeds prior to entering the Project site. If inspections indicate that a vehicle requires washing, this will occur offsite at an existing car wash location with appropriate containment facilities.
- Ensure any straw or hay wattles used for erosion control are certified weed-free.
- Limit disturbance areas to the smallest area needed for construction.

2.2 Permit Compliance Procedure and Tasks

The following procedure and task matrix (**Table E-1**) outlines the specific best management practices (BMPs) that will be implemented, as needed, to minimize the potential for weed spread and establishment. For the full list of project-related BMPs, see **Appendix B** of the EIS.

Table E-1. Procedure and Task Matrix

BMP	Site Procedure(s)	Task Assignment and Schedule
1	Existing weed infestations will be mapped.	Appropriately qualified staff will perform weed surveys prior to implementation.
2	Equipment that has been used in weed-infested areas on the Projects will be cleaned before moving to another area.	Equipment operators will be required to knock off built up dirt and debris from vehicles prior to moving to a new area if they are working in an area that is weed-infested.
3	Any straw or hay wattles used for erosion control must be certified weed-free.	Procurement will ensure that materials ordered are certified weed-free prior to purchase.

3.0 PROJECT SUMMARY

3.1 Project Location

The Projects would be located on the Reservation approximately 30 miles northeast of Las Vegas in Clark County, Nevada, west of Interstate 15 and east of U.S. Highway 93. The Projects would be located in Township 16 South, Range 64 East that includes all or parts of Sections 12–14, 22–27, and 33–36; Township 16 South, Range 65 East, Sections 4–9, 16–18, 30, and 31; and Township 17 South, Range 64 East, Sections 10–12, Mount Diablo Baseline and Meridian, Nevada. This land was set aside by the Moapa Band of Paiute Indians (Moapa Band) exclusively for the Projects. The infrastructure for the Projects would include approximately 10 miles of electric collector lines that would connect the Projects to the substations within the boundaries of the previously approved Eagle Shadow Mountain Solar Project (ESMSP), also on the Reservation.

The right-of-way (ROW) for the collector lines would include approximately 34 acres on the Reservation and 20 acres of land within a federally designated utility corridor on Reservation land that is managed by the Bureau of Land Management (BLM). In addition, the Projects will require ROW for new and existing access roads. New access roads are located on the Reservation, and existing access roads are located on the Reservation, on the Reservation within the BLM-managed designated utility corridor, and on BLM land. No new disturbance is proposed for the existing access roads. The Projects include a total of 66 acres of access roads: 18 acres on Reservation land (10 acres of existing and 8 acres of new access road), 42 acres (all existing) on Reservation within the BLM-managed designated utility corridor, and 6 acres (all existing) on BLM land. The Projects also include ROW for connection with and access to the existing transmission generation interconnection (gen-tie) line, but no new disturbance associated with the gen-tie line is required for the Projects. The Projects include a total of 98 acres of gen-tie line ROW on the Reservation within the BLM-managed designated utility corridor, and 3 acres on BLM Land.

3.2 Project Description

The following describes the major features of the Projects. For a comprehensive description of the Projects, refer to the associated Draft EIS for the Projects (subject to minor design changes).

The Proposed Action includes two solar projects, referred to as SBSP I and SBSP II. Each project would be covered under a separate lease, and together, would have a combined capacity of up to 400 megawatts alternating current (MWac)—300 MWac for SBSP I and 100 MWac for SBSP II. The solar fields would occupy up to 3,600 acres (2,600 acres for SBSP I and 1,000 acres for SBSP II) within a lease option area of approximately 6,355 acres. The solar fields would be leased to the Applicants for a term of up to 50 years.

Collector lines would connect the solar fields to substations within the previously approved ESMSP high-voltage area, crossing through the BLM-managed designated utility corridor. A portion of the collector lines may be constructed overhead to avoid conflicts with existing underground utilities where the collector lines cross the BLM-managed designated utility corridor. From there, the electricity generated would connect through a gen-tie line constructed as part of the previously approved ESMSP, using all existing structures, and connecting to the regional electrical grid at NV Energy's Reid Gardner Substation. Additional or new construction on the gen-tie line (including a maintenance road) would not be required for the SBSPs, however, the Applicants would need to obtain a ROW from BLM for access to, connection with, and maintenance of the gen-tie line.

4.0 PRE-CONSTRUCTION WEED SURVEYS

A weed survey of the Project area will be completed prior to conducting surface-disturbing activities. These surveys will be focused on identifying and mapping occurrences of weed species in the Project area. The weeds described in Nevada Revised Statutes (NRS) Part 555.010 (included as Appendix A to this IWMP) will be used as a guidance for noxious and invasive weed management, although the State has no jurisdictional or regulatory authority regarding weed management for the Projects.

The Nevada Department of Agriculture Plant Industry Division maintains a list of noxious weeds for the State of Nevada. Noxious weeds on this list are assigned to one of three categories, including:

- **Category A:** Weeds that are generally not found or that are limited in distribution throughout the State. Category A weeds are subject to active exclusion from the State and active eradication where found, including the premises of a dealer of nursery stock.
- **Category B:** Weeds that are generally established in scattered populations in some counties of the State. Such weeds are subject to active exclusion, where possible; and active eradication from the premises of a dealer of nursery stock.
- **Category C:** Weeds that are generally established and generally widespread in many counties of the State. Such weeds are subject to active eradication from premises of a dealer of nursery stock.

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

Previous weed surveys were conducted in 2019 for the nearby ESMSP, including within the gen-tie line ROW and access roads constructed for the gen-tie. The gen-tie ROW and access roads are included as part of the Project area for the SBSPs. The survey found 1,305 occurrences of Sahara mustard (*Brassica tournefortii*). The survey found this plant was not abundant in the area, but present across the area in both disturbed and undisturbed habitats (Heritage Environmental Consultants 2019).

5.0 WEED MANAGEMENT

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

5.1 Preventative Measures

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

- Vehicles will be inspected upon entry to the site to ensure cleanliness.
- Disturbance areas will be limited to the smallest area needed for construction.
- The WEAP training will include a section on weed spread and establishment.

This plan is a living document. It may be revised to modify or exclude measures listed or include additional measures, as appropriate over the life of the Projects, if unforeseen circumstances are identified.

5.2 Treatment Methods

Treatment methods are necessary to control and eradicate known invasive and noxious weed occurrences. Treatment methods include a variety of approaches such as mechanical, chemical, and biological controls using Early Detection and Rapid Response (National Invasive Species Council 2003). The most appropriate and effective weed treatment measures will be determined following the assessment of existing weed populations within the Project area. Treatment in areas requiring permanent disturbance (such as within the collector line ROWs) and grading may require long term weed management and monitoring (see Section 6.0 Weed Monitoring).

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

Chemical treatments involve the use and application of herbicides. Treatment methods on Tribal lands will utilize the BLM's Chemical Pest Control Manual as a guideline for weed control (see Section 5.3.1 below). The use of herbicides is highly regulated and involves a variety of specific protocols, safety measures, and precautions for eliminating, reducing, and mitigating for uncontrolled releases. The Project area is located within suitable and occupied Mojave desert tortoise habitat (see the Biological Assessments in **Appendix M** of the EIS). As such, the application of herbicides may be permitted, though a Pesticide Use Proposal (PUP) will need to be submitted to the BLM prior to herbicide use on BLM-administered lands (example PUP is provided in Appendix B of this IWMP).

Herbicide use will follow those approved in BLM's *Programmatic EIS (PEIS) for Vegetation Treatments Using Aminopyralid, Fluroxypyr, and Rimsulfuron on BLM Managed Lands in 17 Western States* (BLM 2016). The

applicant will implement a Site Restoration Plan (**Appendix D** of the EIS) and this IWMP that will specify procedures for managing vegetation and minimizing the spread of invasive and noxious weeds, including integrated pest management, and use of herbicides.

Standard Operating Procedures will be incorporated into this plan and implemented. The herbicides that may be used in construction areas, based on those allowed on BLM lands, include aminopyralid, clopyralid, imazapyr, imazapic, glyphosate, metsulfuron methyl, and rimsulfuron. Herbicides that are believed to have deleterious effects on reptiles, such as 2,4-D, will not be allowed. Any herbicide applications would be conducted during seasons when tortoises are less active. The possible use of herbicides as a treatment method is described in additional detail in Section 7 of this IWMP.

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

5.3 Agency-Specific Requirements

5.3.1 Lands Administered by the Bureau of Land Management

The BLM regulates the use and type of herbicides on all of its managed lands. Included in its *Final Programmatic Environmental Impact Statement, Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States* (BLM 2007) is a list of the 14 herbicide active ingredients approved for use on BLM lands. The BLM approved three additional herbicide active ingredients for use in the 2016 PEIS for vegetation treatments (BLM 2016). Guidelines for the use of chemical means to control vegetation on BLM-administered lands are provided in the BLM's *Chemical Pest Control Manual* (BLM Manual 9011). These guidelines require submittal of a PUP and pesticide application records (PAR) for use of herbicides on BLM-administered lands. Appendix B of this IWMP includes a BLM PUP submittal form, and Appendix C of this IWMP includes an example of a BLM PAR form. These requirements are applicable within the BLM-managed ROWs for O&M purposes only since there is no construction or disturbance proposed on BLM land.

PUPs are to be submitted to BLM several weeks before herbicide application on BLM-administered lands. The appropriate weed control procedures, including target species, timing of control, and method of control, will be determined through consultation with the BLM Las Vegas Field Office (LVFO) weed specialist. All personnel associated with application of weed control measures will be appropriately trained and hold all the required certifications. PARs are to be submitted no more than 24 hours after application of the herbicide.

The BLM ROW grant for the gen-tie line, as well as the ROW grant for use of the existing access roads will include stipulations, best management practices, and requirements to prevent and control the proliferation of weeds including both invasive and noxious species in accordance with BLM direction and policy, and the Las Vegas Field Office Resource Management Plan. The Federal Insecticide, Fungicide and Rodenticide Act of 1996 (7 United States Code [U.S.C.] §§ 136 et seq.) also regulates herbicide use and will be adhered to.

5.3.2 Bureau of Land Management Las Vegas Field Office Noxious Weed Management Plan

The BLM LVFO prepared the *BLM Noxious Weed Management Plan* (BLM 2006) as guidance for weed management programs. The methods included in the document originated from a cooperative effort between BLM and other federal agencies that produced the document *Partners Against Weeds* (BLM 1996). These regulations and guidelines will be generally utilized as a guideline throughout the Project area.

5.3.3 Nevada Revised Statute (NRS): The Nevada Control of Insects, Pests, and Noxious Weeds Act

The following section applies within the BLM-managed ROWs for O&M purposes only since there is no construction or disturbance proposed on BLM land.

NRS 555.150

NRS 555.150 (Eradication of Noxious Weeds by Owner or Occupant of Land) reads:

> *"Every railroad, canal, ditch, or water company, and every person owning, controlling, or occupying lands in this State, and every county, incorporate city or district having the supervision and control over streets, alleys, lanes, rights-of-way, or other lands shall cut, destroy, or eradicate all weeds declared and designated as noxious in NRS 555.130, before such weeds propagate and spread, and whenever required by the State Quarantine Officer."*

NRS 555.210

NRS 555.210 (Performance of Necessary Work by Weed Control Officer on Failure by Landowner Charges as Lien) reads:

> *"If any landowner fails to carry out a plan of weed control for his or her land in compliance with the regulations of the district, the weed control officer may enter upon the land affected, perform any work necessary to carry out the plan, and charge such work against the landowner. Any such charge, until paid, is a lien against the land affected coequal with a lien for unpaid general taxes and may be enforced in the same manner."*

5.3.4 Bureau of Indian Affairs: Western Region Integrated Noxious Weed Management Plan and Programmatic Environmental Assessment for Weed Control Projects on Indian Lands

The Bureau of Indian Affairs (BIA) Western Region prepared the *Integrated Noxious Weed Management Plan and Programmatic Environmental Assessment for Weed Control Projects on Indian Lands* to outline noxious weed control techniques and describe control strategies for specific noxious weed species and management zones (BIA 2014). These guidelines will be generally followed and implemented on all areas of disturbance on Tribal land and utilized for guidance throughout the Project area.

6.0 WEED MONITORING

All surface disturbance within the Project area will be monitored for weeds by qualified botanists and/or appropriately trained personnel. Monitoring will occur throughout the appropriate growing season when species are easily identified. Upon identification of infestation, appropriately trained staff will determine what action is necessary, and treatment measures will be implemented accordingly.

6.1 Ongoing Monitoring

During construction, weed monitoring will occur on an ongoing basis. Appropriately trained personnel will use the results of the initial weed survey to monitor known weed occurrences and will observe activity areas for opportunistic weed occurrences.

6.2 Post-construction

Weed monitoring will begin immediately following construction. Weed monitoring will occur at all disturbed sites a minimum of twice per year (March and September) for an estimated five years, or until restoration efforts are deemed complete by the Moapa Band, BIA, and BLM. For lands administered by the BLM, monitoring will be conducted in accordance with the ROW stipulations—typically on an annual basis, or as needed, for the life of the ROW agreement.

The goal of weed monitoring is to ensure there is no net increase in weed species, or overall weed cover, when compared to the baseline conditions. Identified weed occurrences will be noted and recorded in the same manner as was described for the weed inventory effort (see Section 4.0). A monitoring report will be made available to applicable agencies following each monitoring effort (twice per year). The report will help determine whether success criteria (e.g., no net increase in weeds) are being met. Adaptive management strategies will be implemented, if necessary.

6.3 Monitoring of Known Infestation Areas

Known occurrences of weed infestations will be evaluated as part of the initial mapping effort. Post-construction monitoring will determine if noteworthy changes have occurred at known infestation sites, particularly if the number of individuals or area covered by an infestation has changed dramatically. Areas treated and the effectiveness of the weed management program, including weed infestation identification and weed control, will be summarized in annual reports.

7.0 HERBICIDE APPLICATION, HANDLING, SPILLS, AND CLEANUP

7.1 Herbicide Application

If herbicides are deemed necessary for weed control, personnel responsible for applying herbicides will obtain all of the required federal, State, and/or local agency permits, will hold all necessary certifications, and will have received all relevant training. Permits may include terms and conditions that are not included in this IWMP. A licensed contractor will apply herbicides in accordance with all applicable laws, regulations, and permit stipulations, including U.S. Environmental Protection Agency (EPA) label instructions. A PUP must be approved by BLM prior to herbicide application on lands administered by the BLM. Additionally, herbicides will only be applied in desert tortoise habitat during the less-active desert tortoise seasons. If faced with any of the following scenarios, herbicide application shall be suspended until such conditions no longer exist:

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

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

Herbicide transport and handling will follow these methods:

- Only the quantity of herbicide expected for each day's use will be transported.
- Herbicide concentrate will be transported in approved containers in a controlled manner so as to prevent spills. Herbicide concentrate will be positioned in delivery or work vehicles in a manner in which it is secured and separated from the driving compartment, food, clothing, and safety equipment.
- The mixing of herbicide materials will only occur within designated areas. All mixing will take place over a drip/spill containment device and at a distance of more than 200 feet from open or flowing water, wetlands, or other sensitive resources.
- Herbicides will not be applied to areas of open or flowing water, wetlands, or other sensitive resources unless authorized by the appropriate regulatory agency.
- All equipment and containers used for herbicide storage, application, and transport will subject to inspection for leaks or damage.
- Emptied herbicide containers will be disposed of in accordance with the instructions provided on the label.

7.2 Worker Safety and Spill Reporting

All spills and inadvertent releases of herbicides will be addressed immediately upon detection. Spill response kits will be readily available in herbicide contractor vehicles and at daily onsite herbicide storage areas.

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

- Secure the affected area, barring pedestrian and vehicle traffic.

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

All contractors responsible for herbicide use, transport, application, and control at the site will hold the appropriate certifications. Such certifications shall be made available onsite. Contractors transporting herbicides to the site shall also have legible Safety Data Sheets and labels onsite. All herbicide spills and inadvertent releases shall be reported in accordance with all applicable laws and regulations.

8.0 REFERENCES

Bureau of Indian Affairs (BIA). 2014. *Integrated Noxious Weed Management Plan and Programmatic Environmental Assessment for Weed Control Projects on Indian Lands*. BIA Western Region, Phoenix, AZ. August 2014.

Bureau of Land Management (BLM). 1996. *Partners Against Weeds, An Action Plan for the Bureau of Land Management*. BLM.

____. 2006. *Noxious Weed Plan, Las Vegas Field Office, Bureau of Land Management: A Plan for Integrated Weed Management*. BLM Las Vegas Field Office, Las Vegas, NV.

____. 2007. *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement*. BLM Washington Office, Washington, D.C. Accessed November 2020 at: https://eplanning.blm.gov/eplanning-ui/project/70300/570.

____. 2016. *Final Programmatic Environmental Impact Statement for Vegetation Treatments Using Aminopyralid, Fluroxypyr, and Rimsulfuron on Bureau of Land Management Lands in 17 Western States*. Accessed December 2020 at: https://eplanning.blm.gov/eplanning-ui/project/70301/510.

Heritage Environmental Consultants. 2019. *Eagle Shadow Mountain Solar Project Noxious Weed Survey.* April, 2019.

National Invasive Species Council. 2003. *General Guidelines for the Establishment and Evaluation of Invasive Species Early Detection and Rapid Response Systems*. Version 1. National Invasive Species Council, Washington, D.C.

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APPENDIX A DESIGNATED NOXIOUS AND INVASIVE WEED SPECIES OF THE STATE OF NEVADA

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Table E-A-1. Designated Noxious and Invasive Weed Species of the State of Nevada

Common Name	Scientific Name	Category[1]
African rue	*Peganum harmala*	A
Austrian fieldcress	*Rorippa austriaca*	A
Swainsonpea	*Sphaerophysa salsula*	A
Black henbane	*Hyoscyamus niger*	A
Camelthorn	*Alhagi maurorum*	A
Common crupina	*Crupina vulgaris*	A
Dalmatian toadflax	*Linaria dalmatica*	A
Dyer's woad	*Isatis tinctoria*	A
Eurasian water-milfoil	*Myriophyllum spicatum*	A
Giant reed	*Arundo donax*	A
Giant salvinia	*Salvinia molesta*	A
Goatsrue	*Galega officinalis*	A
Crimson fountaingrass	*Pennisetum setaceum*	A
Houndstongue	*Cynoglossum officinale*	A
Hydrilla	*Hydrilla verticillata*	A
Iberian starthistle	*Centaurea iberica*	A
Common St. Johnswort	*Hypericum perforatum*	A
Malta starthistle	*Centaurea melitensis*	A
Mayweed chamomile	*Anthemis cotula*	A
Mediterranean sage	*Salvia aethiopis*	A
Purple loosestrife	*Lythrum salicaria, L. virgatum* & cultivars	A
Purple starthistle	*Centaurea calcitrapa*	A
Rush skeletonweed	*Chondrilla juncea*	A
Spotted knapweed	*Centaurea maculosa*	A
Squarrose knapweed	*Centaurea virgata*	A
Sulfur cinquefoil	*Potentilla recta*	A
Syrian beancaper	*Zygophyllum fabago*	A
Yellow starthistle	*Centaurea solstitialis*	A
Yellow toadflax	*Linaria vulgaris*	A
Horsenettle	*Solanum carolinense*	B
Diffuse knapweed	*Centaurea diffusa*	B
Leafy spurge	*Euphorbia esula*	B
Medusahead	*Taeniatherum caput-medusae*	B

Common Name	Scientific Name	Category[1]
Musk thistle	*Carduus nutans*	B
Russian knapweed	*Acroptilon repens*	B
African mustard, Sahara mustard	*Brassica tournefortii*	B
Scotch thistle	*Onopordum acanthium*	B
Silverleaf nightshade	*Solanum elaeagnifolium*	B
Canada thistle	*Cirsium arvense*	C
Hoary cress	*Cardaria draba*	C
Johnsongrass	*Sorghum halepense*	C
Perennial pepperweed	*Lepidium latifolium*	C
Poison-hemlock	*Conium maculatum*	C
Puncture vine	*Tribulus terrestris*	C
Salt cedar (tamarisk)	*Tamarix* spp.	C
Waterhemlock	*Cicuta* spp.	C

Source: Nevada Department of Agriculture. 2019. "Nevada Noxious Weed List." Accessed November 2020 at: http://agri.nv.gov/Plant/Noxious_Weeds/Noxious_Weed_List/.

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

APPENDIX B EXAMPLE OF BUREAU OF LAND MANAGEMENT PESTICIDE USE PROPOSAL FORM

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UNITED STATE DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

PESTICIDE USE PROPOSAL

STATE:_____	DATE:
COUNTY:_____	PROPOSAL NUMBER:
DISTRICT:_____	EA REFRENCE NUMBER:
DURATION OF PROPOSAL:_____	DECISION RECORD (DR) NUMBER:
LOCATION:_____	

ORIGINATOR – NAME:_____

ORIGINATOR – COMPANY:_____

ORIGINATOR – CONTACT INFORMATION:_____

PROPOSAL PREPARER - NAME:_____

PROPOSAL PREPARER – COMPANY:_____

PROPOSAL PREPARER – CONTACT INFORMATION: _____

I. APPLICATION INFORMATION – Including mixtures and adjuvants):

1. TRADE NAME(S): _____
2. COMMON NAME(S) _____
3. EPA REGISTRATION NUMBER(S): _____
4. MANUFACTURER(S): _____
5. METHOD OF APPLICATION: _____
6. MAXIMUM RATE OF APPLICATION – AS STATED IN THE EIS:
    a. Pounds Active Ingredient or Acid Equivalent: _____
7. MAXIMUM RATE OF APPLICATION – AS STATED ON THE LABEL:
    a. Formulated Product: _____
    b. Pounds Active Ingredient or Acid Equivalent: _____
8. INTENDED RATE OF APPLICATION:
    a. Formulated Product: _____
    b. Pounds Active Ingredient or Acid Equivalent: _____
9. APPLICATION DATE(S): _____
10. NUMBER OF APPLICATIONS: _____

II. PEST [List specific pest(s) and reason(s) for the proposed application of the pesticide]:_____

_____

_____

_____

_____

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

_____

_____

_____

_____

_____

IV. APPLICATION SITE DESCRIPTION:

1. ESTIMATED NUMBER OF ACRES: _____
2. GENERAL DESCRIPTION (Describe land type or use, size, stage of growth of target species, soil characteristics, and any additional information that may be important in describing the area to be treated.)_____

V. SENSITIVE ASPECTS AND PRECAUTIONS: In order to assist in tracking potential impacts associated with Federally threatened, endangered or proposed species, please answer the following questions and then provide the site specific conditions information.

1. Are there special status species (SSS) in the project area? "Yes" or "No" (Circle One)
   A. If "No" Proceed to the site description portion of this section.
   B. If "Yes" Are any of the SSS also federally threatened, endangered, or proposed? "Yes" or "No" (Circle One)
      a. If "No" Proceed to the site description portion of this section.
      b. If "Yes" Did your Field Office coordinate with the local Fish and Wildlife Service Office and/or NMFS "Yes" or "No" (Circle One)

      I. If "No" Explain _____

      II. If "Yes" Was Section 7 Consultation Completed "Yes" or "No" (Circle One)

      1. If "No" Explain _____

      2. If "Yes" What extent of Section 7 was completed? "Formal Consultation" (Circle One) "Informal Consultation" "Technical Assistance"

      2b. Describe the outcome of the consultation: _____

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

_____
_____
_____
_____
_____
_____

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

_____
_____
_____
_____

VII. INTEGRATED PEST MANAGEMENT PRACTICES CONSIDERED IN THE OVERALL PROJECT:

_____
_____
_____
_____

VIII. SIGNATURES:

1. Pesticide Use Proposal's Originator: _____ Date: _____

    a. Company: _____

2. Certified Pesticide Applicator: _____ Date: _____

    a. License Number: _____

    b. Certifying Organization: _____

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

4. Field Office Manager: _____ Date: _____

5. BLM State Pesticide Coordinator: _____ Date: _____

6. Deputy State Director: _____ Date: _____

    □ Concur or Approved
    □ Not Concur or Disapproved
    □ Concur or Approved With Modifications

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

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APPENDIX C EXAMPLE OF BUREAU OF LAND MANAGEMENT PESTICIDE APPLICATION RECORD FORM

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U.S. Department of Interior

Bureau of Land Management

PESTICIDE USE PROPOSAL

State

County

District or Field Office

Location
(Attach maps or submit GIS Spatial Data

Proposal Number *(completed by the BLM)*

EA Reference Number

Project Name

Duration of Proposal

Date

Originator Name

Originator Company or Organization

Originator Contact Information

Proposal Preparer Name

Proposal Preparer Organization

Proposal Preparer Contact Information

Estimated Number of Acres

General Description of Treatment Site

Table 1 Pesticide Information

Use the following tables or attach tables to indicate which products are proposed to be used. The row numbers should be consistent throughout each table. Also submit copies of product labels and Material Safety Sheets along with this Pesticide Use Proposal.

Row	Trade Name *(ex: Roundup Pro)*	Common Name *(ex: glysophate)*	EPA Registration Number	Manufacturer

Table 2 Pesticide Application Rates

Row	Trade Name	Maximum Application Rate on Product Label *(ex: 2 quarts/acre, 1lb/acre)*	Intended Rate of Application *(Formulated)*	Pounds per Acre *Active Ingredient (AI)* *Acid Equivalent (AE)*

Table 3 Pesticide Application Information

Row	Application Site Type	Delivery Method	Coverage Pattern	Equipment Used
	Christmas Tree/Plantations, Conservation Reserve, Cropland, Fallow Cropland, Fence rows, Forestry, Marshes, Non-cropland, Nursery, Permanent Pasture, Ponds/ Lakes, Slow Moving Water, Rangeland, Reservoir, Rights-of-way, Riparian, Rivers/Streams/ Ditches/Canals, Roadsides, Utilities, Wetlands, Wildlife Refuges	*Aerial, Ground*	*Band, Broadcast, Spot*	*Truck, ATV, UTV, Backpack, Airplane, Helicopter, Handheld Sprayer, Mower, Tractor, Horseback Sprayer, Wick/Wiper*

Table 4 Pesticide Timing and Target Species

Row	Trade Name	Application Time Frame	Number of Treatments/year	Target Species
		Spring, Summer, Fall, Winter		

Table 5 Adjuvants (Colorants, Diluents, Markers, Surfactants, etc)

Trade Name	Type	Manufacturer	Application Rate on Label	Intended Application Rate	Indicate Applicable Row Number

Desired Results of Treatment

Non-Target Impacts and Planned Mitigation

Integrated Pest Management Practices Considered

Sensitive Aspects and Precautions (Completed by the BLM)

Are there any Special Status Species in the proposed treatment area? (•) Yes ( ) No

If No, proceed to Site Description section

If Yes, are the Special Status Species considered threatened, endangered and proposed for listing? ( ) Yes ( ) No

If No, proceed to Site Description section

If Yes, did your Field Office coordinate with the appropriate U.S Fish and Wildlife or National Marine Fisheries office? ( ) Yes ( ) No

If No, proceed to Site Decription section and explain

If Yes, was ESA Section 7 consultation completed? ( ) Yes ( ) No

If No, proceed to Site Description section and explain

If yes, select extent of consultation and describe the outcome in the Site Description section

Site Description - Sensitive Aspects and Precautions (Completed by the BLM)

Provide appropriate explanations regarding the Special Status Species questions above. Also, identify and describe any BLM Special Status Species.

Signatures

Originator		Date	
Field Office Coordinator		Date	
Field Office Manager		Date	
State Office Coordinator		Date	
Deputy State Director		Date	

○ Approved

○ Disapproved

Comments

Title 18 U.S.C Section 1001 and Title 43 U.S.C Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

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APPENDIX D WEED STIPULATIONS FOR PROJECTS ON LANDS MANAGED BY THE BUREAU OF LAND MANAGEMENT

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WEED STIPULATIONS FOR PROJECTS ON LANDS MANAGED BY THE BUREAU OF LAND MANAGEMENT

The following is a list of weed stipulations for O&M on BLM lands. The Projects do not include any construction on BLM land, so any stipulations for construction will be used as guidelines and evaluated for applicability.

1. The Project Applicants will limit the size of any vegetation clearing and disturbance to the absolute minimum necessary to perform the activity safely and as designed. The Project Applicants will avoid creating soil conditions that promote weed germination and establishment.
2. At the onset of Project planning in the NEPA analysis phase, the Project Applicants, Project leads, or the LVFO noxious weed coordinator will complete the Risk Assessment Form for Noxious/Invasive Weeds. This will provide information about the methods of weed treatments and weed prevention schedules for the management of noxious weeds within the Project footprint. This will identify the level of noxious weed management necessary for stipulation 3 below.
3. The Project Applicants will coordinate Project activities with the BLM Weed Coordinator (702-515-5295) regarding any proposed herbicide treatment. If herbicide treatment is needed on BLM land, the Project Applicants will prepare, submit, obtain and maintain a PUP for the proposed action. Weed treatments may include the use of herbicides, and only those herbicides approved for use on public lands administered by the BLM.
4. Before ground-disturbing activities begin, the Project Applicants will review the weed risk assessment and prepare an IWMP that will inventory and prioritize weed infestations for treatment within the Project footprint. Should the weeds spread beyond the Project footprint as a result of Project activity, these weeds will be treated as a part of the Project. This will include access routes.
5. The Project Applicants will begin Project operations in weed-free areas whenever feasible before operating in weed-infested areas.
6. The Project Applicants will locate pits and staging areas for the use of equipment storage, machine and vehicle parking, or any other area needed for the temporary placement of people, machinery and supplies. These staging areas will be selected from locations that are relatively weed-free. The Project Applicants will avoid or minimize all types of travel through weed-infested areas or restrict major activities to periods of time when the spread of seed or plant parts are least likely.
7. Project workers need to inspect, remove, and dispose of weed seed and plant parts found on their clothing and equipment. Disposal methods vary depending on the project.
8. The Project Applicants will evaluate options, including area closures, to regulate the flow of traffic on sites where native vegetation needs to be established.
9. A noxious weed inventory will be performed for the Project footprint prior to any ground-disturbing activities. The results of this initial inventory will be incorporated into the IWMP. The type of survey needed will depend on the size of the Project footprint.
10. The Project Applicants shall be responsible for controlling all undesirable invading plant species (including listed noxious weeds and other invasive plants, including species considered undesirable by federal, State or local authorities) within the boundaries of their authorization area and BLM-authorized ancillary facilities (e.g. access and utility corridors), including all operating and reclaimed areas, until revegetation activities have been deemed successful and responsibility released by the authorized officer. Control standards and measures proposed must conform to applicable State and federal regulations.

11. The Project Applicants shall use weed-free seed for reclamation. Other organic products procured for erosion control, stabilization, or revegetation (e.g. straw bales, organic mulch) must be certified weed-free.
12. The Project Applicants are responsible for ensuring that all Project-related vehicles and equipment arriving at the site (including, but not limited to, drill rigs, dozers, support vehicles, pickups and passenger vehicles, including those of the operator, any contractor or subcontractor, and invited visitors) do not transport noxious weeds onto the Project site. The Project Applicants shall ensure that all such vehicles and equipment that will be traveling off constructed and maintained roads or parking areas within the Project area have been power-washed, including the undercarriage, since their last off-road use and prior to off-road use on the Projects. When beginning off-road use on the Projects, such vehicles and equipment shall not harbor soil, mud, or plant parts from another locale. Vehicles that have traveled in an off-road area known to have a significant weed population will have excessive dirt and debris knocked off that could harbor plant material or seeds from weeds. Seeds and plant parts will be collected, bagged and deposited in landfills through the waste disposal system when practical.
13. Should undesirable invasive plants become established on the developed Project area prior to reclamation reshaping, appropriate measures will be taken to ensure that invasive plants are eradicated prior to reclamation earthwork. Should undesirable invasive plants become established on reshaped areas prior to reclamation seeding, appropriate measures will be taken to ensure that invasive plants are eradicated prior to seeding the Project site.

Appendix F

Decommissioning Plan

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Southern Bighorn Solar Projects

DECOMMISSIONING PLAN

TABLE OF CONTENTS

LIST OF ACRONYMS AND ABBREVIATIONS

BESS	battery energy storage system
BLM	Bureau of Land Management
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	Environmental Site Assessment
gen-tie	transmission generation interconnection
Moapa Band	Moapa Band of Paiute Indians
MWac	megawatt alternating current
O&M	operations and maintenance
PV	photovoltaic
PPA	Power Purchase Agreement
RCRA	Resource Conservation and Recovery Act
Reservation	Moapa River Indian Reservation
ROW	right-of-way
SBSP I	Southern Bighorn Solar Project I
SBSP II	Southern Bighorn Solar Project II
TSCA	Toxic Substances Control Act
U.S.	United States
U.S.C.	United States Code

1.0 INTRODUCTION AND PLAN PURPOSE

300MS 8me, LLC and 425LM 8me, LLC (Applicants), both subsidiaries of 8minute Solar Energy, have each entered into agreements with the Moapa Band of Paiute Indians (Moapa Band) to lease two adjacent sections of land for up to 50 years on the Moapa River Indian Reservation (Reservation) for the purposes of constructing, operating and maintaining, and eventual decommissioning of solar photovoltaic (PV) electricity generation facilities (referred to as the solar fields) and battery energy storage system (BESS). The two solar projects include the solar fields, access roads, and collector lines and are referred to as the Southern Bighorn Solar Project I (SBSP I) and Southern Bighorn Solar Project II (SBSP II). The two projects are collectively referred to as the Projects and/or SBSPs. Construction of SBSP I is expected to take approximately 14 to 16 months and construction of SBSP II is expected to take approximately 8 to 10 months. The two Projects may be constructed simultaneously or sequentially. The Applicants expect that construction would commence in the fourth quarter of 2021.

The purpose of this Decommissioning Plan is to establish the conceptual methodologies that would be employed for decommissioning activities associated with the permanent closure of the Projects. The actions implemented during the facilities closures would be determined by the expected future use of the sites. Therefore, more detailed Final Decommissioning Plans will be developed in advance of the start of decommissioning activities for each Project.

The Projects are expected to operate at a minimum for the life of its lease with the Moapa Band and the terms of the Power Purchase Agreements (PPAs) or other energy contracts (up to 50 years). Because much of the needed electrical infrastructure will have been developed, it is possible that the solar fields would continue to be upgraded and used to generate solar energy even beyond the terms of the initial leases and energy purchase agreements, remaining in solar energy production for the foreseeable future. It is also possible that the Moapa Band could re-purpose the Project sites at the termination of solar projects. Certain facility components such as the access roads, electrical transmission lines, operations and maintenance (O&M) buildings, and others could be used to support other future uses on this site.

For purposes of developing this plan, it is assumed that if and when the Projects are decommissioned, all project structures and electrical equipment will be removed from the Project area and associated rights-of way (ROWs) and the disturbed areas will be reclaimed in accordance with the Site Restoration Plan (**Appendix D** of the Environmental Impact Statement [EIS]).

1.1 Organization of the Plan

This conceptual Decommissioning Plan addresses the following:

- Project Description
- Regulatory Criteria
- Decommissioning Activities
    - Pre-decommissioning
    - Removal of Facilities
    - Hazardous Waste Management
    - Debris Management, Disposal, and Recycling

    - Post-demolition Site Stabilization
- Project Decommissioning Costs and Bonding

As mentioned earlier, because this document addresses the Project actions that would occur well in the future, it will be updated and finalized in the months prior to any scheduled decommissioning to ensure that the final plans address the proposed future land uses of each site and the applicable rules and regulations in place at that time.

2.0 PROJECT DESCRIPTION

This section provides an overview of the SBSPs. Construction is anticipated to begin in fourth quarter of 2021 and would occur over 14 to 16 months for SBSP I and 8 to 10 months for SBSP II.

2.1 Project Area

The Projects would be located approximately 30 miles northeast of Las Vegas in Clark County, Nevada, west of Interstate 15 and east of U.S. Highway 93. The solar fields would be constructed on up to approximately 2,600 acres for SBSP I and 1,000 acres for SBSP II (3,600 acres combined) within a lease option area of approximately 6,355 acres of tribal trust land within the Reservation. The Projects would be located in Township 16 South, Range 64 East that includes all or parts of Sections 12–14, 22–27, and 33–36; Township 16 South, Range 65 East, Sections 4–9, 16–18, 30, and 31; and Township 17 South, Range 64 East, Sections 10–12, Mount Diablo Baseline and Meridian, Nevada. This land was set aside by the Moapa Band exclusively for the Projects.

The Projects also include ROW for existing and new access roads and collector lines. New access roads would be located on the Reservation and provide access to the solar fields, and existing access roads would be located on the Reservation, on Bureau of Land Management (BLM) land, and on the Reservation within the designated utility corridor managed by BLM. For SBSP I, the Project includes 33 acres of collector line ROW (20 acres on the Reservation, and 13 acres within the BLM-managed designated utility corridor), 59 acres of access road (17 acres on the Reservation, 42 acres within the BLM-managed designated utility corridor, and 6 acres on BLM land), and 101 acres of ROW for the existing transmission generation interconnection (gen-tie) line (98 acres within the BLM-managed designated utility corridor, and 3 acres on BLM land). For SBSP II, the Project includes 21 acres of collector line ROW (14 acres on the Reservation, and 7 acres within the BLM-managed designated utility corridor), 57 acres of access road (15 acres on the Reservation, 42 acres within the BLM-managed designated utility corridor, and 6 acres on BLM land), and 101 acres of ROW for the existing gen-tie line (98 acres within the BLM-managed designated utility corridor, and 3 acres on BLM land). The majority of the access roads and the entire gen-tie ROW is shared across both Projects.

No construction activities would take place on the gen-tie line because the Projects would use existing facilities. Much of the access roads, gen-tie ROW, and collector line ROW are adjacent to multiple existing linear electric transmission and pipeline utilities.

2.2 Project Components

The following describes the major components of the Projects. For a comprehensive description of the Projects design, refer to the associated Draft EIS (subject to minor design changes).

The Project would consist of up to 400-megawatt alternating current (MWac) (300 MWac for SBSP I and 100 MWac for SBSP II) solar energy generating facilities using PV technology and associated infrastructure. Project components include onsite facilities, offsite facilities, and temporary facilities needed to construct the Projects. The solar fields would be located entirely on Reservation lands. Major onsite facilities include the solar fields, comprised of multiple blocks of PV solar panels mounted on single-axis tracking systems, associated inverter and transformer equipment, fencing, and O&M facilities. Power produced by the Projects would be conveyed to the regional transmission system via the existing gen-tie line to NV Energy's existing 230-kilovolt Reid-Gardner Substation.

The Projects are estimated to result in approximately 501 acres of permanent disturbance for SBSP I and 297 acres of permanent disturbance for SBSP II, as well as 2,141 acres of temporary disturbance for SBSP I and 731 acres of temporary disturbance for SBSP II. Permanent disturbance areas would be those areas where the surface of the ground is not restored to its existing condition after construction, such as those relating to foundations or new access roads. Temporary disturbance areas include those where construction activity would take place but where restoration of the surface would be possible, such as those relating to temporary work areas, pull sites, solar fields, and laydown yards. In some places, areas of temporary disturbance would overlap with areas previously disturbed.

3.0 REGULATORY CRITERIA

During the decommissioning process, all activities will be conducted in compliance with all applicable federal and Moapa Band regulations in place at the time. Consultation with the Moapa Band, Bureau of Indian Affairs, BLM, and any other involved entities will be conducted to ensure that all federal and tribal requirements are addressed.

The primary guidance documents for decommissioning will be the Final Decommissioning Plan (prepared just in advance of project closure) and the Site Restoration Plan (**Appendix D** of the EIS). Federal requirements involving hazardous wastes and toxic substances will also be followed during decommissioning activities. Among these are the Toxic Substances Control Act ([TSCA] 15 United States Code [U.S.C.] § 2601) that requires reporting, record-keeping and testing, and restrictions relating to the use and disposal of chemical substances and/or mixtures. The TSCA also addresses the production, importation, use, and disposal of specific chemicals (U.S. Environmental Protection Agency [EPA] 2019a). The Resource Conservation and Recovery Act ([RCRA] 42 U.S.C. § 6901) gives the EPA the authority to control hazardous waste from its generation until disposal, including transportation, treatment, and storage (EPA 2019b).

Coordination with the Moapa Band and agencies throughout the life of the Projects, including decommissioning, is critical so that applicable regulations are not violated and the public and the environment are not impacted by the Projects.

4.0 PROJECT DECOMMISSIONING

The procedures described for decommissioning are designed to promote public health and safety, environmental protection, and compliance with applicable regulations. It is assumed that decommissioning will begin approximately 50 or more years after the Projects' operations are initiated.

The Projects' Decommissioning Plans may incorporate the sale of some of the facility components via the used equipment market and recycling of components, where feasible. Decommissioning will be conducted in accordance with Final Decommissioning Plans that will be developed in the months prior to decommissioning being initiated for each site.

This Decommissioning Plan assumes that all equipment and facilities within and associated with the solar fields will be removed with the possible exception of the components described in Section 4.2.1 of this plan.

4.1 Pre-decommissioning Activities

Pre-decommissioning activities will be conducted to prepare the Projects for demolition. This will include assessing the existing site conditions, itemizing relevant National Environmental Policy Act and Biological Opinion requirements, and development of the Final Decommissioning Plans and schedules as described above.

An Environmental Site Assessment (ESA) will be conducted before any decommissioning activities occur. This will document the existing conditions of the Project area, including the location and presence of hazardous materials on the site. The results of the ESA will be used to define any remediation or cleanup methodologies that could be required and incorporated into the Final Decommissioning Plan. This documentation will ensure that areas containing hazardous materials can be decommissioned appropriately.

Other pre-decommissioning activities include removing hazardous materials from the sites, including residues that occur in equipment. All operational liquids and chemicals are expected to be removed and disposed of as discussed in Section 4.4 of this plan. Hazardous material and petroleum containers, pipelines, and other similar structures shall be rinsed clean, when feasible, and the waste liquid collected for offsite disposal. Locations for decommissioned structures, non-hazardous waste, and debris will be designated in the Final Decommissioning Plans to facilitate the decommissioning process and removal offsite.

4.2 Removal of Facilities

Site decommissioning and equipment removal can take a year or more. Therefore, access roads, fencing, electrical power, and raw/sanitary water facilities will remain in place for use by the decommissioning and restoration workers until no longer needed; these components will be the last to be removed prior to site rehabilitation, unless otherwise requested to remain by the Moapa Band.

4.2.1 Solar Fields Above- and Below-ground Facilities

Structures to be dismantled during decommissioning include the offsite substations and BESSs, onsite O&M facilities, perimeter fences, solar fields, water storage tanks, septic system, underground cabling, underground collector lines, overhead collector lines, and transformers and inverters. These structures will be dismantled and moved to designated areas for either recycling, disposal at an approved landfill, or other disposition (e.g., resale).

Aboveground structures will be removed through mechanical or other approved methods. Belowground structures will be removed or, upon agency approval, may remain in place to minimize soil disturbance. Belowground facilities/utilities that potentially may be removed include embedded foundations (if present), pipelines, electrical lines and conduits, gas lines, and concrete slabs.

4.2.2 Roads

Access and onsite roads will remain in place to accomplish decommissioning at the end of each facility's life and will be one of the last Project components to be removed. If any onsite roads developed in the solar facilities are not needed for other future uses by the Moapa Band, any aggregate and/or other base material will be removed and recycled or transported to an appropriate disposal site (where applicable). After the onsite road materials are removed, the roads will be restored to approximate preconstruction conditions in accordance with the Site Restoration Plan (**Appendix D** of the EIS).

4.3 Debris Management, Disposal, and Recycling

All removed material and demolition debris will be placed in designated locations within the solar fields. Each stockpile will be transported offsite to either a used equipment market, offsite recycling center, or approved landfill, depending on the material type. Debris will be broken down into manageable sizes so that transportation is simplified.

4.4 Hazardous Waste Management

All disposal and transportation of hazardous waste will be conducted in compliance with RCRA, TSCA, and other regulations (as applicable). In areas where no record of hazardous waste exposure occurred, a visual inspection will be conducted as part of the pre-decommissioning ESA described in Section 4.1 of this plan. If a concern is identified, further evaluation of the area shall occur and the area or structure will be treated accordingly. A licensed state waste contractor will be used to ensure that all required laws and regulations have been met and to address any remaining requirements needed to successfully close the Projects.

4.5 Post-demolition Site Stabilization

After removal of all existing structures within the solar fields, the Project area will be restored to conditions similar to pre-construction. Then, revegetation and reclamation activities required to return the disturbed areas to as near to a pre-construction state as possible will be conducted in accordance with the plans prepared as part of the Projects. These plans include:

- Site Restoration Plan (**Appendix D** of the EIS)
- Integrated Weed Management Plan (**Appendix E** of the EIS)

The objectives of these plans include the following:

- Restore and reduce potential for erosion
- Restore habitat suitable to support desert fauna
- Implement a weed management program that minimizes the need for non-native species eradication

5.0 PROJECT DECOMMISSIONING COSTS AND BONDING

Prior to the issuance of the SBSPs notice to proceed, the Applicants will be required to provide performance and reclamation bonding in an amount sufficient to ensure the implementation of the approved Decommissioning Plans for restoration and performance.

The bond instruments will be based on decommissioning cost estimates provided by the Applicants and based on the final designs of the Projects. The estimates will consider any Project components that are expected to be left in place at the request of and for the benefit to the Moapa Band (e.g., access roads). The decommissioning, performance, and reclamation estimates will also include the residual value of any salvageable or recyclable property, as well as the then-current costs of decommissioning.

6.0 REFERENCES

U.S. Environmental Protection Agency (EPA). 2019a. "Summary of the Toxic Substances Control Act." Accessed December 2, 2020 at : https://www.epa.gov/laws-regulations/summary-toxic-substances-control-act.

_____. 2019b. "Summary of the Resource Conservation and Recovery Act." Accessed December 2, 2020 at: https://www.epa.gov/laws-regulations/summary-resource-conservation-and-recovery-act.

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Appendix G

Traffic Management Plan

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Southern Bighorn Solar Projects

TRAFFIC MANAGEMENT PLAN

TABLE OF CONTENTS

LIST OF ACRONYMS AND ABBREVIATIONS

AADT	annual average daily traffic
BESS	battery energy storage system
BLM	Bureau of Land Management
EPC	engineering, procurement, and construction
ESMSP	Eagle Shadow Mountain Solar Project
Gen-tie	transmission generation interconnection
I-15	Interstate 15
kV	kilovolt
Moapa Band	Moapa Band of Paiute Indians
NDOT	Nevada Department of Transportation
O&M	operations and maintenance
PV	photovoltaic
Reservation	Moapa River Indian Reservation
SBSP	Southern Bighorn Solar Project
TMP	Traffic Management Plan
US 93	U.S. Highway 93

1.0 INTRODUCTION AND PURPOSE OF THE TRAFFIC MANAGEMENT PLAN

300MS 8me, LLC and 425LM 8me, LLC (Applicants), both subsidiaries of 8minute Solar Energy, have each entered into agreements with the Moapa Band of Paiute Indians (Moapa Band) to lease two adjacent sections of land for up to 50 years on the Moapa River Indian Reservation (Reservation) for the purposes of constructing, operating and maintaining, and eventual decommissioning of solar photovoltaic (PV) electricity generation facilities (referred to as the solar fields) and battery energy storage system (BESS). The two solar projects include the solar fields, access roads, and collector lines and are referred to as the Southern Bighorn Solar Project I (SBSP I) and Southern Bighorn Solar Project II (SBSP II). The two projects are collectively referred to as the Projects and/or SBSPs.

This Traffic Management Plan (TMP) outlines steps to minimize the impacts and delays to traffic associated with the Projects. The TMP describes the measures that may be used to address any traffic and parking impacts identified. This TMP is a framework that will be finalized by the engineering, procurement, and construction (EPC) contractor once they have been selected by the Applicants.

2.0 PROJECT INFORMATION

2.1 Description

The solar fields would occupy up to 3,600 acres (2,600 acres for SBSP I and 1,000 acres for SBSP II) within a lease option area of approximately 6,355 acres of tribal trust land within the Reservation. The infrastructure for the Projects would include approximately 10 miles of electric collector lines (7 miles for SBSP I and 3 miles for SBSP II) that would connect the Projects to a substation for each Project within the boundaries of the previously approved Eagle Shadow Mountain Solar Project (ESMSP). From there, the electricity generated would connect to the existing 230-kilovolt (kV) transmission generation interconnection (gen-tie) line within a designated utility corridor which would deliver the electricity to the regional grid at NV Energy's Reid Gardner Substation. The primary access routes to the Projects would utilize existing roads. Access would be via Interstate 15 (I-15) and North Las Vegas Boulevard, and then along existing access roads on the Reservation.

2.2 Location

The Projects would be located approximately 30 miles northeast of Las Vegas in Clark County, Nevada, west of I-15 and east of U.S. Highway 93 (US 93). The Project area is accessible from Exit 64 on I-15. Traffic would exit I-15 and travel less than one mile on US 93 and exit to the north on North Las Vegas Boulevard until reaching the solar facility access roads. These existing roads on the Reservation include the access road for the existing Moapa Southern Paiute Solar Project facility, roads providing access to an existing tribal aggregate operation and water wells in the vicinity of the Projects, an access road within and adjacent to the Bureau of Land Management (BLM)-managed designated utility corridor, and an unnamed road that connects to the town of Ute, Nevada. There is currently little traffic on any of the roads in the immediate vicinity of the Projects. No upgrades to these existing roads are anticipated to be necessary to provide the access needed for the Projects, other than maintenance during construction and operations, as required. The Projects also include the construction of new access roads that connect the existing Southern Paiute Solar Project facility roads to the SBSP I and SBSP II solar fields, and a new access road within the proposed collector line right-of-way.

Within the solar fields, access roads would be built between the solar blocks to provide vehicle access to the solar equipment (e.g., solar panels, inverter stations, transformers). Turnarounds would be constructed at the terminus of the roads to facilitate vehicle and equipment turn-around. The existing soil surface of all access roads would be leveled with a road grader. In addition to grading, access roads that lead to inverter stations would be compacted and graveled with onsite materials.

2.3 Scope of Work and Schedule

Construction of SBSP I is expected to take approximately 14 to 16 months and construction of SBSP II is expected to take approximately 8 to 10 months. The two Projects may be constructed simultaneously or sequentially, for a total construction of 14 to 26 months depending on the sequencing of constructing the two Projects. The Applicants expect that work would commence in the fourth quarter of 2021 and would include mobilization, grading and site preparation, installation of drainage and erosion controls, installation of the PV solar arrays and associated equipment, and construction of the collector lines and BESS.

2.4 Existing Transportation Facilities

I-15 provides access to the Project area from the urban area of Las Vegas to the south and Mesquite, Nevada and Salt Lake City, Utah to the north. North Las Vegas Boulevard provides access north of US 93. In addition to

the roads in the area, the Union Pacific Railroad runs north-south directly to the east of the proposed solar fields.

Table G-1 provides a summary of the primary roads and transportation corridors in the Project area. **Table G-2** provides more detailed information on the transportation routes and annual average daily traffic volumes (AADT) in the vicinity of the Projects.

Table G-1. Routes Providing Direct or Indirect Access to the Projects

Route	Direction	Type	Lanes	Description
I-15	North-South	Paved Interstate Freeway	2 (each direction)	Provides a connection between Las Vegas, NV and Salt Lake City, UT. Provides direct access to Projects via US 93 and North Las Vegas Boulevard.
US-93	East-West	Paved Principal Arterial	2 (each direction)	US 93 is a major highway traversing the eastern edge of the state. Provides access between I-15 and North Las Vegas Boulevard.
North Las Vegas Boulevard	North-South	Paved Rural Minor Collector	1 (each direction)	North Las Vegas Boulevard provides access between US 93 and the Southern Paiute Solar Access road. It is a paved, undivided two-lane road.
Union Pacific Railroad	North-South	Railroad	1 track	Provides connection between Salt Lake City, UT and Los Angeles, CA.

Table G-2. Average Annual Daily Traffic Volume Summary Near the Projects

Location	AADT
I-15, Southbound On Ramp at US93 Interchange (Exit 64)	3,500
I-15, Northbound Off Ramp at US93 Interchange (Exit 64)	3,750
I-15 Segment Between Exit 64 and Exit 62	122,000
US 93 approximately 0.6 mile north of I-15	2,400

Source: NDOT 2019 Annual Traffic Book

3.0 TRAFFIC IMPACTS

3.1 Major Transportation Routes

3.1.1 Construction Phase

The roadways listed in **Table G-1** would be impacted by the Projects. The impacts to these roadways could include increased wear on the road from heavy construction loads, increased traffic volumes during construction, and potential delays during peak construction periods.

Increased traffic volumes from construction personnel commuting to and from the Project area and deliveries of construction materials and equipment would impact traffic flows throughout the duration of the 14- to 26-month construction period. The onsite construction workforce would consist of laborers, craftsmen, support personnel, and construction management personnel. The construction workforce for each of the Projects is anticipated to be an average of 300 workers with a peak not expected to exceed 750 workers at any given time. During peak construction, each Project would generate approximately 1,500 one-way vehicle trips daily, or 3,000 if both Projects were constructed simultaneously. To account for the variability during peak periods, a conservative estimate assuming no carpooling was used. Deliveries of equipment and supplies to the site would also vary over the construction period but are expected to average approximately 25 daily round trips, with a maximum of approximately 100 daily round trips, for each Project. This would generate up to approximately 400 one-way vehicle trips daily if both Projects were constructed simultaneously. Construction equipment would include augers, bulldozers, tractors, cranes, and a variety of trucks and trailers. All Project-related vehicles would park onsite during construction.

Construction would generally occur between 5:00 a.m. and 5:00 p.m., Monday through Friday, but could occur seven days a week. Additional hours may be necessary to make up schedule deficiencies, or to complete critical construction activities. For instance, during hot weather, it may be necessary to start work earlier (e.g., at 3:00 a.m.) to avoid work during high ambient temperatures. Further, construction requirements would require some nighttime activity for installation, refueling equipment, staging material for the following day's construction activities, service or electrical connection, or inspection, quality assurance/control, and testing activities. Nighttime activities would be performed with temporary lighting.

The Projects would increase traffic on I-15 by a maximum of 3,400 one-way vehicle trips daily. The intersection of US 93 and North Las Vegas Boulevard would also experience increased traffic from the Projects. The existing vehicle traffic on these routes is well below their engineered capacity, and they are capable of accommodating this increase in traffic. Further, the Nevada Department of Transportation (NDOT) is planning to add an additional travel lane to several miles of I-15 between North Las Vegas and Exit 64 to accommodate increasing truck traffic along this segment of highway.

3.1.2 Operations and Maintenance Phase

During operations and maintenance (O&M), it is anticipated that the Projects operational staff of 5 onsite personnel each would generate up to an additional 20 one-way vehicle trips per day total. Most O&M personnel would work onsite during the day, but a small number of security personnel may work onsite during nights. Workers would use passenger vehicles to commute to the Project area, heavy vehicles would only be necessary during certain maintenance activities. The anticipated operational life of the Projects would be up to 50 years. The limited amount of traffic generated during O&M would not have an impact on Project access roads or intersections.

3.1.3 Decommissioning Phase

Following the O&M phase, the Projects would be taken out of service and associated onsite and offsite facilities would be removed. Decommissioning would involve removal of the solar blocks and other facilities, with some buried components (such as cabling) potentially remaining in place. Traffic generated during decommissioning would be similar to the construction phase but would occur over a shorter period of time.

4.0 MITIGATION OF TRAFFIC IMPACTS – BEST MANAGEMENT PRACTICES

The traffic impacts identified in the previous sections could cause minor (5-minute) delays to travelers in the vicinity of the Projects, specifically at the I-15 / US 93 / North Las Vegas Boulevard interchange. This section describes measures which could be used to reduce potential traffic impacts resulting from construction and decommissioning of the Projects.

4.1 Motorist Information and Construction Area Signs

Informing road users is one way to help reduce the impacts from traffic during construction and decommissioning. Both static and variable message signs may be used to inform users coming from each direction that there could be delays due to construction. When needed, this signage would be placed on I-15 on both sides of the US 93 intersection. The signs would inform drivers about the construction and any major delays and/or detours, allowing them to modify their travel choices.

4.2 Construction Staging

To mitigate any traffic impacts attributable to the construction/decommissioning workforce, construction and decommissioning start times could be staggered during peak activity, such that the workforce commuting each day would arrive/depart at different times. This could be done by grouping the workforce by construction/decommissioning areas.

4.3 Carpooling

While not expected, if needed, carpooling could be used during peak construction periods to reduce the total number of vehicles entering/departing the site, and in turn, reduce traffic congestion. The construction manager may coordinate with the workforce to determine the best location and time for carpooling workers to meet, if needed. Another possible option would be to organize a shuttle that would carry workers to and from the Project area from a centralized point, such as the Moapa Travel Plaza.

4.4 Public Information and the Media

Stakeholders such as NDOT, Clark County, and the Moapa community would be informed with outreach letters prior to construction and decommissioning. The letter would provide a description of the Projects, the construction/decommissioning timeframe, and any short-term traffic restrictions that may impact the stakeholders. The letters would also provide contact information for any stakeholders who may have questions.

If needed, updates to the local communities through radio, the internet, or local newspaper could be used to provide current information to local users of I-15 and US 93 who may be impacted by construction and decommissioning of the Projects. Newspaper bulletins in local papers could also be used to provide information on upcoming work and areas of impact to local users.

4.5 Off-Peak Hour Activities

To minimize traffic during typical peak commuting hours, deliveries would be scheduled during off-peak hours, to the greatest extent practicable.

5.0 POTENTIAL EFFECTS TO THE PUBLIC

5.1 Cyclists and Pedestrians

Cyclists and pedestrians are rare in the vicinity of the Projects but could occasionally be present. The existing routes would continue to accommodate cyclists and/or pedestrians during construction and decommissioning as they currently do.

5.2 Delivery and Service Vehicles

I-15 serves commercial trucking and delivery and service vehicles traveling between Las Vegas and Salt Lake City. The Projects would increase traffic volumes on I-15 (particularly at exit 64) and on US 93, but major delays are not expected. If delays were to occur, they would be expected to have a minor effect on delivery and service vehicles travelling on these roads.

5.3 Emergency Services

Emergency vehicles dispatched through 911 services (e.g., emergency medical service, sheriff, State Highway Patrol, and fire departments) use routes within the Project vicinity. Clark County Fire Department has an agreement with the Tribe to provide fire protection and emergency medical services to the Reservation. Emergency services would not be interrupted by the Projects. The Clark County Fire Department would be kept informed on the progress of construction and decommissioning activities in the Project area.

6.0 CONCLUSION

Construction of the Projects may have impacts on the existing transportation networks by increasing traffic volumes during the 14- to 26-month construction phase. The increase in traffic during the 50-year O&M phase would be minimal. Impacts to transportation networks during the decommissioning phase would be similar to those during construction but would occur over a shorter period of time.

Traffic volumes would increase along I-15, the interchange ramps at Exit 64, US 93, North Las Vegas Boulevard, and other access roads. Potential impacts to traffic and the local transportation network would be minimized with the implementation of the mitigation measures described in **Section 3**.

Appendix H

Bird and Bat Conservation Strategy

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Southern Bighorn Solar Projects

BIRD AND BAT CONSERVATION STRATEGY

TABLE OF CONTENTS

LIST OF APPENDICES

LIST OF ACRONYMNS AND ABBREVIATIONS

AC	alternating current
AF	acre-feet
APLIC	Avian Power Line Interaction Committee
BBCS	Bird and Bat Conservation Strategy
BCC	Birds of Conservation Concern
BESS	battery energy storage system
BGEPA	Bald and Golden Eagle Protection Act
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
CFR	Code of Federal Regulations
DC	direct current
EIS	Environmental Impact Statement
ESA	Endangered Species Act
ESMSP	Eagle Shadow Mountain Solar Project
GPS	global positioning system
gen-tie	transmission generation interconnection
I-15	Interstate 15
IWMP	Integrated Weed Management Plan
kV	kilovolt
LE	listed endangered
LT	listed threatened
MBTA	Migratory Bird Treaty Act
Moapa Band	Moapa Band of Paiute Indians
MSHCP	Multiple Species Habitat Conservation Plan
MWac	megawatts alternating current
NNHP	Nevada Natural Heritage Program
O&M	operation and maintenance
PV	photovoltaic
Reservation	Moapa River Indian Reservation
ROW	right-of-way
SBSP I	Southern Bighorn Solar Project I
SBSP II	Southern Bighorn Solar Project II
SCADA	Supervisory Control and Data Acquisition
U.S.	United States

U.S.C.	United States Code
USFWS	United States Fish and Wildlife Service
WEAP	Worker Environmental Awareness Program

1.0 INTRODUCTION

300MS 8me, LLC and 425LM 8me, LLC (Applicants), both subsidiaries of 8minute Solar Energy, have each entered into agreements with the Moapa Band of Paiute Indians (Moapa Band) to lease two adjacent sections of land for up to 50 years on the Moapa River Indian Reservation (Reservation) for the purposes of constructing, operating and maintaining, and eventual decommissioning of solar photovoltaic (PV) electricity generation facilities (referred to as the solar fields) and battery energy storage system (BESS). The two solar projects include the solar fields, access roads, and collector lines and are referred to as the Southern Bighorn Solar Project I (SBSP I) and Southern Bighorn Solar Project II (SBSP II). The two projects are collectively referred to as the Projects and/or SBSPs. The SBSPs would generate a combined capacity of up to 400 megawatts alternating current (MWac) of electricity: 300 MWac for the SBSP I and 100 MWac for the SBSP II.

This Bird and Bat Conservation Strategy (BBCS) is a voluntary, project-specific document that outlines a plan to reduce the risks and mortality that result from bird and bat interactions with implementation of the Proposed Action. This plan may be updated prior to and during implementation of the Projects to refine specific conservation strategies and adapt to design criteria, schedule, and conditions.

The statutory authority for addressing effects to birds stems primarily from the Migratory Bird Treaty Act (MBTA), the Bald and Golden Eagle Protection Act (BGEPA), and the Endangered Species Act (ESA). There are currently no bat species in Clark County, Nevada protected under the ESA (U.S. Fish and Wildlife Service [USFWS] 2020), though some bat species are protected under the state of Nevada regulations (Nevada Natural Heritage Program [NNHP] 2020) and as Bureau of Land Management (BLM) sensitive species (BLM 2017). The only portion of the Projects where protection of BLM Sensitive Species and Nevada State Listed Species is applicable is on the six acres of existing access road and three acres of existing transmission generation interconnection (gen-tie) line right-of-way (ROW) on BLM lands, however there would be no new disturbance on these lands.

1.1 Purpose

This BBCS has been prepared in compliance with State and federal regulations, as applicable, to outline project-specific practices and measures for reducing avian and bat impacts resulting from construction, operation and maintenance (O&M), and decommissioning of the SBSPs.

1.2 Goals

The goal of this BBCS is to reduce bird and bat mortality (USFWS 2012) throughout the construction, O&M, and decommissioning of the Projects. The goals specific to this BBCS are to:

1. Identify and isolate where avian and bat mortality has the potential to occur.
2. Identify mitigation measures to reduce the potential for avian and bat mortality.
3. Design overhead power lines to be avian safe in accordance with Avian Power Line Interaction Committee (APLIC) design standards (APLIC 2006, 2012) by minimizing electrocution and collision risk.
4. Establish an avian and bat reporting system to document incidents of electrocution and collision mortality.

2.0 LAW, REGULATIONS, AND CULTURAL TRADITIONS

Native birds in Nevada are protected primarily under three pieces of legislation: the ESA, MBTA, and BGEPA. Native bats are protected under the ESA, as BLM sensitive species, and as species protected under the state of Nevada. The Moapa Band does not have tribal guidance or regulations concerning birds and bats.

2.1 Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (16 United States Code [U.S.C.] §§ 703–712) is administered by the USFWS (1998) and is the cornerstone of migratory bird conservation and protection in the U.S. The Act authorizes the Secretary of the Interior to regulate the taking of migratory birds and provides that it shall be unlawful, except as permitted by regulations, “to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird” (16 U.S.C. § 703). The list of species protected by the Act was updated in 2020 (Title 50 Part 10.13) and includes almost all bird species that are native to the U.S. The updated memorandum to the MBTA, M-37050 (U.S. Department of the Interior Office of the Solicitor 2017), and subsequent guidance memorandum to M-37050 (USFWS 2018) conclude that “the take of birds resulting from an activity is not prohibited by the MBTA when the underlying purpose of that activity is not to take birds.” Therefore, incidental take (takings and/or killings that directly and foreseeably result from, but are not the purpose of, an activity) of migratory bird species is not strictly prohibited by the MBTA. The ESA and BGEPA are not changed by M-37050.

2.2 Endangered Species Act

The ESA provides a program for the conservation of threatened and endangered plants and animals and the habitats in which they are found. The law requires that federal agencies, in consultation with the USFWS, ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species. The law also prohibits everyone, private person and federal agency alike, from "taking" endangered and threatened wildlife. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct. “Harm” is further defined by USFWS to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. “Harass” is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering (USFWS 1998). Any activity that may result in the “incidental take” of threatened or endangered species requires permission from the USFWS under ESA Sections 7 or 10.

2.3 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act of 1940 (16 U.S.C. § 668, as amended) prohibits the take, disturbance or possession of bald and golden eagles with limited exceptions. Take, in the Act, is defined as “to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.” Disturb is defined in the Act as “to agitate or bother a bald or golden eagle to a degree that causes or is likely to cause, based on the best scientific information available, 1) injury to an eagle; 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior; or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.” Important eagle-use areas include eagle nests, foraging areas, or roost sites that eagles rely on for breeding, sheltering, or feeding, and the landscape features surrounding such nests, foraging areas, or roost sites that are essential for the continued viability of the site for breeding, feeding, or sheltering eagles.

3.0 PROPOSED PROJECT

3.1 Project Area Description

The solar fields would be constructed on up to approximately 2,600 acres for SBSP I and 1,000 acres for SBSP II (3,600 acres combined) within a lease option area of approximately 6,355 acres of tribal trust land within the Reservation. **Figure H-1** shows the general location of the Project area. The Projects would be located approximately 30 miles northeast of Las Vegas in Clark County, Nevada, west of Interstate 15 (I-15) and east of U.S. Highway 93. The Projects would be located in Township 16 South, Range 4 East that includes all or parts of Sections 12–14, 22–27, and 33–36; Township 16 South, Range 5 East, Sections 4–9, 16–18, 30, and 31; and Township 17 South, Range 6 East, Sections 10–12, Mount Diablo Baseline and Meridian, Nevada. This land was set aside by the Moapa Band exclusively for the Projects.

The infrastructure for the Projects would include approximately 10 miles of electric collector lines (7 miles for SBSP I and 3 miles for SBSP II) that would connect the Projects to the substations within the boundaries of the previously approved Eagle Shadow Mountain Solar Project ([ESMSP] see **Figure H-2**). From there, the electricity generated would connect to the existing 230-kilovolt (kV) gen-tie line within a designated utility corridor, which would deliver the electricity to the regional grid at NV Energy's Reid Gardner Substation.

The Project area is located in the Mojave Warm Desert and Mixed Desert Scrub habitat (Wildlife Action Plan Team 2012), which includes the creosotebush, Joshua tree forest, and tall and short blackbrush plant communities. The Projects are situated in the north end of the Dry Lake Valley, Nevada. The site consists primarily of low-profile bajada slopes and ephemeral washes, which drain to Dry Lake, a closed basin playa, and California Wash.

The general ecological setting of the Projects is consistent with Mojave Desert scrub vegetation. The area is dominated by open stands of creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*). Desert saltbush (*Atriplex* spp.) scrub habitat and cactus-yucca scrub are also present and concentrated within ephemeral washes habitat (Wildlife Action Plan Team 2012). A more detailed description of the Project area can be found in the Environmental Impact Statement for the Projects.

The Projects are estimated to result in approximately 501 acres of permanent disturbance for SBSP I and 297 acres of permanent disturbance for SBSP II, as well as 2,141 acres of temporary disturbance for SBSP I and 794 acres of temporary disturbance for SBSP II. Permanent disturbance areas would be those areas where the surface of the ground is not restored to its existing condition after construction, such as those relating to foundations or new access roads. Temporary disturbance areas include those where construction activity would take place but where restoration of the surface would be possible, such as those relating to temporary work areas, pull sites, solar fields, and laydown yards. In some places, areas of temporary disturbance would overlap with areas previously disturbed. A portion of the new access roads that would be constructed would be required for both Projects, and the associated disturbance is included in the calculations for both Projects.

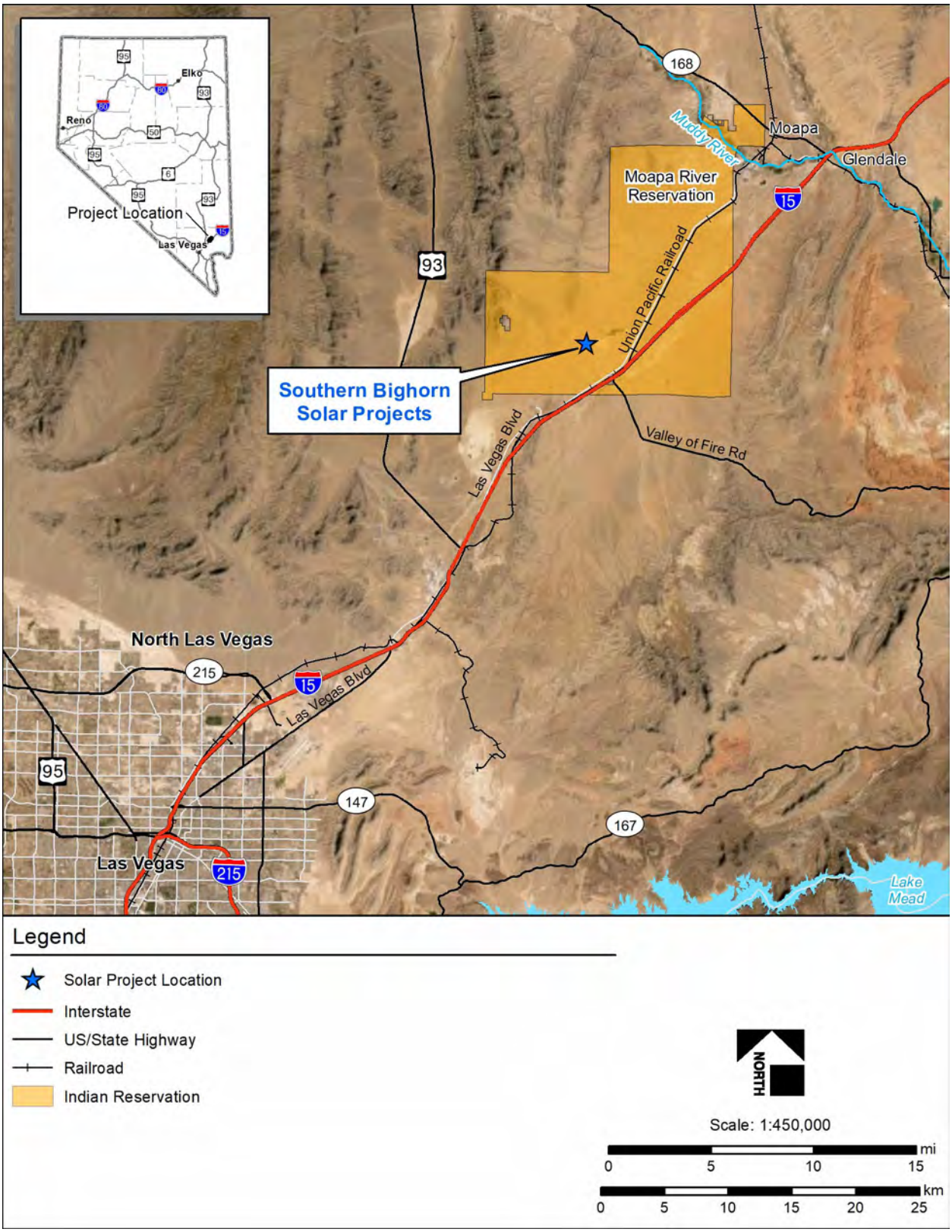

Figure H-1. Location of Projects

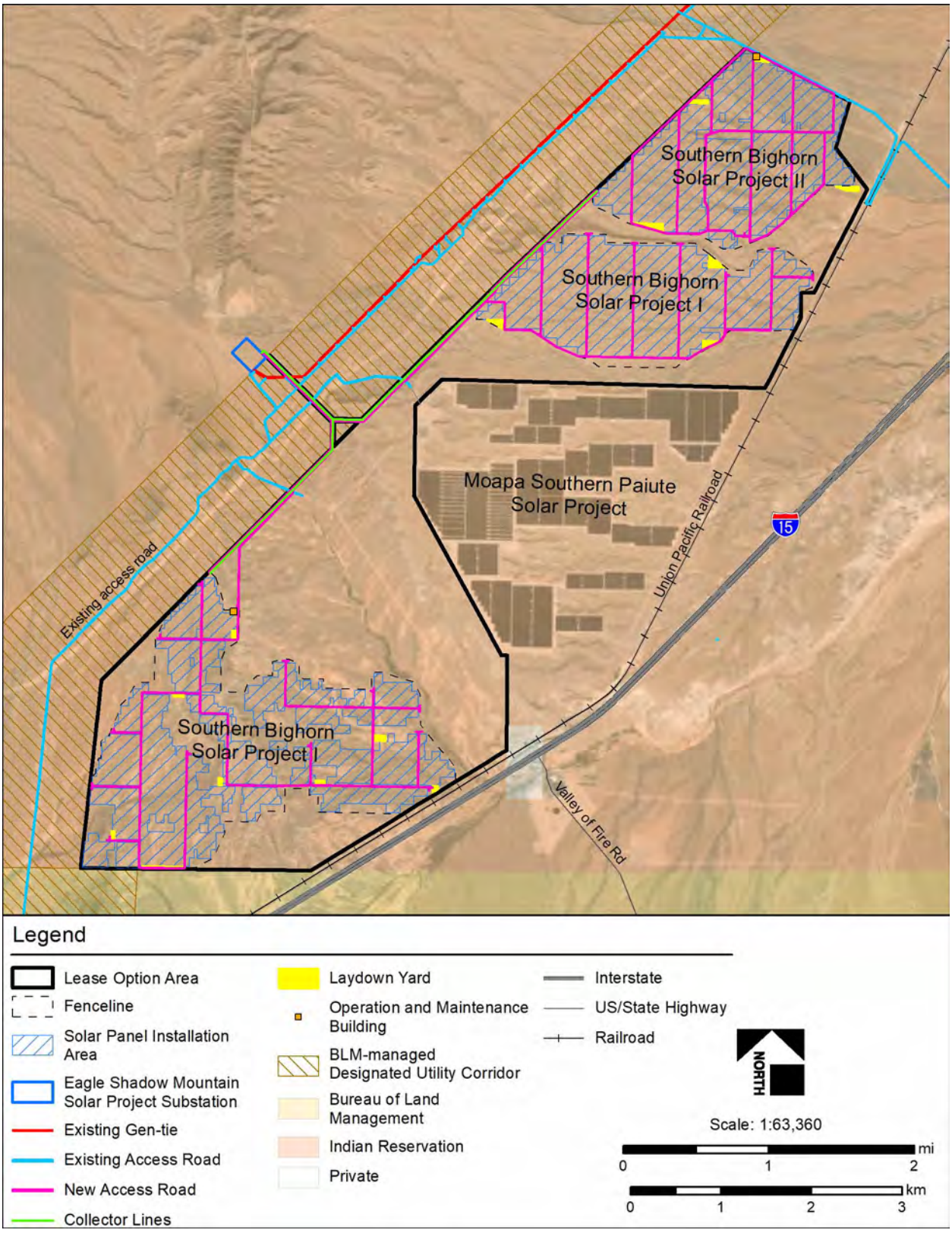

Figure H-2. Solar Field Site Plan for the Southern Bighorn Solar Projects

3.2 Project Components

The Projects would include the following main components.

3.2.1 Solar Blocks

The solar fields for each of the Projects include solar blocks consisting of mounted PV solar panels, inverter stations, and transformers. The electricity generated from the solar panels (direct electrical current [DC]) would be delivered through underground cables to an inverter station where the DC is converted to alternating electrical current [AC]. Solar panels would be installed on rows of single-axis trackers that would rotate to follow the sun over the course of the day. The solar panels would be up to 20 feet above ground at their highest point, which would occur during the morning and evening hours when the trackers are tilted at their maximum angle. Each solar block would be powered by a low-voltage electric drive motor. The motors would typically be operated for a few seconds every 5 to 10 minutes during daylight conditions to move the panels in approximately one-degree increments.

3.2.2 Operations and Maintenance Buildings

The solar fields may include an O&M building with onsite parking for each of the Projects. The O&M building would be steel framed with metal siding and roof panels and would be approximately 80 feet long by 20 feet wide by 20 feet high.

The O&M building for each Project could include offices, repair facility/parts storage, a control room, and restrooms. A septic tank and leach field may be installed for collection, treatment, and disposal of sanitary waste. If a septic system were not installed, portable toilets would be used.

Additional components of the O&M building would include aboveground water storage tanks, signage, a flagpole, trash containers, and Supervisory Control and Data Acquisition (SCADA) system. The O&M building and components would be equipped with exterior lighting, as approved by the Moapa Band and Bureau of Indian Affairs (BIA). Minimal lighting would be used and would be directed downward and away from wildlife habitat. Each of the O&M buildings and parking areas would occupy up to 6 acres.

3.2.3 Water Supply

The water supply required for the Projects would be leased from the Moapa Band and drawn from the Moapa Band's existing water rights. The use of the Moapa Band's water proposed by the Projects would help the Moapa Band affirm and sustain its rights to the water. Water would be brought in using trucks and stored in water storage tanks. This water would be used for dust control, human use, and washing of solar panels. During construction, up to 400 acre-feet (AF) of water (200 AF for each Project) would be required for dust control. Water use during O&M would not exceed 20 AF per year for each Project. This water would be used for solar panel washing and dust control.

3.2.4 Lighting

The lighting systems for the Projects would provide O&M personnel with illumination for both normal and emergency conditions near the main entrance and the Project substations. Lighting would be designed to provide the minimum illumination needed to achieve safety and security objectives and would be downward facing and shielded to focus illumination on the desired areas only. There would be no lighting in the solar fields. If lighting at individual solar panels or other equipment is needed for night maintenance, portable lighting would be used.

3.2.5 Communication Systems Infrastructure

Telecommunications systems would be installed at the transformers, consisting of a remote terminal unit, communications line (i.e., T-1 line), microwave receiver, and miscellaneous communication cables and link equipment, as required. A meter would be installed to measure the energy output of the Projects. The microwave receiver would be mounted on an existing 130-foot-tall lattice structure, constructed as part of the ESMSP, to facilitate wireless communications and provide a back-up option for site telecommunications.

The Projects would include a SCADA system that would allow for the remote monitoring and control of inverters and other Project components. The SCADA system would be able to monitor Project output and availability and to run diagnostics on the equipment. This equipment would be in the O&M building and would connect to the communications system.

3.2.6 Collector Lines

Energy generated from the solar blocks would be transferred through collector lines from inverters within each solar field to each Project's substation, located in the previously approved ESMSP high-voltage area. Approximately three sets of collector lines would connect SBSP I to the SBSP I substation in the ESMSP high-voltage area, and approximately one set of collector lines would connect SBSP II to the SBSP II substation in the ESMSP high-voltage area; see **Figure H-2**). At the Projects' substations, the electricity would be stepped up to 230 kV for delivery to NV Energy's Reid Gardner Substation using the gen-tie constructed for the ESMSP. The Applicants intend to install the collector lines and fiber optic communication lines entirely underground, although sections of the lines may be installed overhead where they cross through the BLM-managed designated utility corridor in order to avoid conflicts with existing underground utilities. The locations of overhead collector line installation can only be determined during construction; therefore, the Proposed Action includes overhead and underground construction where collector lines cross the BLM-managed designated utility corridor.

Underground collector lines would be installed in trenches up to 4 feet deep and 10 feet wide. A total of 10 miles of collector lines (7 miles for SBSP I and 3 miles for SBSP II) consisting of four separate lines (three for SBSP I and one for SBSP II) would be constructed. Of this, up to 4 miles (3 miles for SBSP I and 1 mile for SBSP II) may be installed overhead where the collector lines cross the BLM-managed designated utility corridor. The collector lines would be constructed within approximately 33 acres of ROW for SBSP I (13 acres within the BLM-managed utility corridor and 20 acres on the Reservation) and 21 acres of ROW for SBSP II (7 acres within the BLM-managed utility corridor and 14 acres on the Reservation).

Overhead collector lines, if necessary, would include the construction of up to 57 support structures for SBSP I and 20 support structures for SBSP II across up to 2 linear miles for SBSP I (constructed as three parallel collector lines) and 1 linear mile for SBSP II (constructed as a single collector line), all within the BLM-managed designated utility corridor. The structures would be up to 50 to 75 feet above ground and spaced approximately 150 to 300 feet apart. The poles would be buried at 10 percent of the pole height, plus 2 feet. The collector line ROW and permanent disturbance areas are expected to remain the same whether the collector lines are constructed overhead or underground.

3.2.7 Battery Energy Storage System

The Projects would include one or more BESSs which consist of modular and scalable battery packs and battery control systems that conform to national safety standards. The BESSs would be in pad-mounted, stackable metal structures (approximately 40 feet long by 8 feet wide by 8 feet high) or a separate building in compliance with applicable regulations. The maximum height of a building, if used, would not exceed 25 feet. The total acreage

of the BESSs would not exceed 12 acres for each Project. The dimensions and number of BESSs would vary depending on the application, supplier, chosen configuration, and applicable building standards. The BESSs would be located in the high-voltage area established as part of the previously approved ESMSP.

3.2.8 Site Fencing

Each of the Project sites would be enclosed within a chain link perimeter fence, potentially with barbed wire, measuring up to 8 feet in height (from finished grade). The fence would have controlled access points, lighting, and possibly security alarms, security camera systems with remote monitoring, and security guard vehicle patrols to deter trespassing and/or unauthorized activities. The fence would have a 6- to 8-inch opening at the bottom of the fence to allow for the movement of desert tortoises into and through the site during O&M. The O&M facilities would be surrounded by fencing that does not include the desert tortoise opening due to safety issues. There would be up to 80,000 linear feet of fencing for SBSP I and up to 17,000 linear feet for SBSP II, following the perimeters of the properties.

3.2.9 Access Roads

Within the solar fields, access roads would be built between the solar blocks to provide vehicle access to the solar equipment (e.g., solar panels, inverter stations, transformers). The internal access roads would occupy approximately 55 acres (35 acres for SBSP I and 20 acres for SBSP II). Turnarounds would be constructed at the terminus of the roads to facilitate vehicle and equipment turn-around. The existing soil surface of all access roads would be leveled with a road grader. In addition to grading, access roads that lead to inverter stations would be compacted and graveled with onsite materials.

The primary access routes to the Projects would utilize existing roads. Access would be via I-15 and North Las Vegas Boulevard, and then along existing access roads on the Reservation. These existing roads on the Reservation include the access road for the existing Southern Paiute Solar Project facility, roads providing access to an existing tribal aggregate operation and water wells in the vicinity of the Projects, an access road within and adjacent to the BLM-managed designated utility corridor, and an unnamed road that connects to the town of Ute, Nevada. No major upgrades to these existing roads are anticipated; minor maintenance may be required during construction, O&M, and decommissioning.

The Projects also include the construction of new access roads that connect the existing Southern Paiute Solar Project facility roads to the SBSP I and SBSP II solar fields, and a new access road within the proposed collector line ROW. **Figure H-2** shows the location of the existing roads that would be used and the new access roads that would be constructed.

The Projects would include 67 acres of access roads. Of this, 58 acres are existing access road (6 acres on BLM lands, 42 acres within the BLM-managed designated utility corridor, and 10 acres on Reservation lands). The Projects would require 8 acres of new access roads on Reservation land; of this, 4 acres of new access roads would be used by both Projects, 3 acres would access SBSP I only, and 1 acre would access SBSP II only.

4.0 SPECIES OF CONCERN

The Project area for the SBSPs supports suitable nesting and/or foraging habitat for several avian species and potentially suitable foraging habitat for several species of bat. The following section describes the known and predicted occurrences of avian and bat resources in and around the Projects.

4.1 Bat Species

No bats are currently listed by the USFWS as threatened or endangered in Clark County, Nevada (USFWS 2020) though there are several bats listed under the NNHP as threatened, protected, and sensitive (NNHP 2020) and as BLM sensitive species (BLM 2017). From these lists, 11 species of bat could occur within the SBSPs (**Table H-1**). These species are only expected to be present during nocturnal foraging. There are no known or expected roosting locations or hibernacula within or in the immediate vicinity of the Projects. BLM policy is to provide these bat species with the same level of protection as is provided for ESA candidate species in BLM Manual 6840.06 C, that is to "ensure that actions authorized, funded, or carried out do not contribute to the need for the species to become listed." The sensitive species designation is used for species that occur on BLM-administered lands for which BLM has the capability to significantly affect the conservation status of the species through management.

Table H-1. Bat Species with the Potential to Occur in the Project Area

Scientific Name	Common Name	Status	Potential to Occur in Project Area	Habitat
Antrozous pallidus	Pallid bat	NNHP, BLM Sensitive	Low potential. Reliance on tree roosts.	Arid deserts and grasslands. Shallow caves and crevices, rock outcrops buildings, and tree cavities.
Corynorhinus townsendii	Townsend's big-eared bat	NNHP, BLM Sensitive	Low potential. Mine and cave obligates. Foraging habitat not present.	Salt desert scrub, sagebrush and pinyon juniper, mahogany. Will not live in extreme desert environments
Euderma maculatum	Spotted bat	NNHP, BLM Sensitive	Low potential, prefers riparian areas for foraging.	Desert scrub to forest habitats. Roosts in caves and crevices.
Idionycteris phyllotis	Allen's lappet-eared bat	NNHP, BLM Sensitive	Low potential. Prefers high coniferous forest.	Uses a variety of habitats including Mojave desert scrub, coniferous forests, and riparian woodlands.
Lasiurus blossevillii	Western red bat	NNHP, BLM Sensitive	Low potential. No suitable habitat.	Woodland habitats, Muddy River area.
Mactrous californicus	California leaf-nosed bat	NNHP, BLM Sensitive	Low potential. Occurs at lower elevations.	Inhabits low deserts, caves, mines, buildings.
Myotis californicus	California myotis	BLM Sensitive	Moderate potential. Common, may forage within the Project area.	Semiarid deserts and grasslands, forests, coastal forests and montane forests.
Myotis thysanodes	Fringed myotis	NNHP, BLM Sensitive	Low potential. Reliance on cave roosts.	Low desert scrub to high elevation coniferous forests.

Scientific Name	Common Name	Status	Potential to Occur in Project Area	Habitat
Myotis velifer	Cave myotis	BLM Sensitive	Low potential. Rare.	Cave dwelling; will roost in rock or wall crevices, old buildings and under bridges.
Nyctinomops macrotis	Big free-tailed bat	BLM Sensitive	Low potential. Rare.	Inhabits rocky terrain, roosts in rocky cliffs, weather rock fissures including desert shrubs.
Pipistrellus hesperus	Western pipistrelle	BLM Sensitive	Moderate potential. Common.	Desert habitats of blackbrush, creosote bush, salt desert shrub, and sagebrush
Tadarida brasiliensis	Brazilian free-tailed bat	NNHP, BLM Sensitive	Moderate potential. Abundant in Nevada.	Roosts in caves, manmade structures. Found from low desert to high mountains.

Abbreviations: BLM = Bureau of Land Management; NNHP = Nevada Natural Heritage Program

Source: Altenbach et al 2002, NNHP 2020

4.2 Special Status Avian Species

The golden eagle is protected under the BGEPA, which includes the September 11, 2009 Eagle Rule (Rule) 50 Code of Federal Register (CFR) Parts 13 and 22, as well as the MBTA. Periodic helicopter surveys by the Nevada Department of Wildlife indicate that suitable nesting and remnant nests occur approximately three miles west of the Projects. The entire Project area is considered suitable foraging habitat for golden eagles and the species is likely to occasionally forage within the SBSPs. No suitable nesting habitat is present in the Project area and no known active nests occur closer than three miles from the Projects. The construction and O&M of the Projects is not expected to result in take. However, the potential for collision would be increased by the construction of these Projects if proper precautions are not taken.

Multiple bird species are listed under the ESA, as BLM sensitive species, and protected under the State of Nevada Natural Heritage Program. **Table H-2** addresses these special status species that could be found in the Project area, the protection afforded these species, their associated habitat, and the likelihood of occurrence.

Table H-2. Special Status Bird Species with the Potential to Occur in the Project Area

Scientific Name	Common Name	Status	Potential to Occur in Project Area	Habitat
Aquila chrysaetos	Golden eagle	NNHP, BLM Sensitive, BGEPA, MSHCP	Low potential to occur. Foraging habitat within the Project area. No breeding habitat present, with nearest 3 miles to the west of the Projects.	Prefers open country, especially around mountains, hills, and cliffs; uses a variety of habitats ranging from arctic to desert, including tundra, shrublands, grasslands, farmland, and areas along rivers and streams.
Athene cunicularia hypugaea	Western burrowing owl	NNHP, BLM Sensitive, MSHCP	High potential to be present within or near Project area. Nesting and foraging habitat present.	Open habitats, sparse vegetation such as prairie, pastures, desert or shrub-steppe, and airports. Associated with prairie dogs and ground squirrels, whose burrows they use for nests.

Scientific Name	Common Name	Status	Potential to Occur in Project Area	Habitat
Auriparus flaviceps	Verdin	NNHP	High potential foraging and nesting habitat within and near the Project area. Potential nesting habitat along ephemeral washes.	Inhabits desert regions of the U.S. and northern Mexico. Found wherever thorny scrub vegetation is present and prefer to nest in acacias (*Acacia* spp.), paloverde (*Cercidium* spp.), smoke tree (*Dalea spinosa*), mesquite (*Prosopis* spp.), or desert lavender (*Hyptis emoryi*).
Buteo regalis	Ferruginous hawk	NNHP, BLM Sensitive, MSHCP	Low potential, little suitable habitat present.	Open grasslands, sagebrush flats, low foothills, and fingers of pinyon-juniper habitat
Buteo swainsoni	Swainson's hawk	NNHP, BLM Sensitive	Low potential. No suitable habitat.	Agricultural valleys with cotton, elm, or other suitable nest trees.
Charadrius alexandrines nivosus	Western snowy plover	NNHP, BLM sensitive	Low potential. No suitable habitat.	Beaches, dry mud or salt flats, sandy shores of rivers, lakes, and ponds.
Coccyzus americanus	Yellow-billed cuckoo	ESA LT, NNHP, BLM Sensitive, MSHCP	Low potential. No suitable habitat.	Open woodland, parks, deciduous riparian woodland; nests in tall cottonwood and willow riparian woodland.
Empidonax traillii extimus	Southwestern willow flycatcher	ESA LE, NNHP, BLM Sensitive, MSHCP	Low potential. No suitable habitat.	Thickets, scrubby and brushy areas, open second growth, swamps, and open woodland with perennial water source.
Falco peregrinus	Peregrine falcon	NNHP, BLM sensitive, MSHCP	Low potential. Little suitable foraging habitat and no breeding habitat.	Mountains, open forested regions, and human population centers.
Gymnorhinus cyanocephalus	Pinyon jay	BLM Sensitive	Low potential. No suitable habitat.	Pinyon-juniper woodland, less frequently pine, also occurs in scrub oak and sagebrush.
Hailiaeetus leucocephalus	Bald eagle	BLM Sensitive, BGEPA	Low potential. No suitable habitat.	Large bodies of water for feeding. Mature trees for roosting.
Ixobrychus exilis	Least bittern	NNHP, BLM Sensitive	Low potential. No suitable habitat.	Fresh marshes, reedy ponds. Mostly freshwater but also brackish, in areas with tall, dense vegetation standing in water.
Lanius ludovicianus	Loggerhead shrike	NNHP, BLM Sensitive	High potential. foraging and nesting habitat within and near the Project area.	Open country with short vegetation and well-spaced shrubs or low trees, with spines or thorns; frequents agricultural fields, pastures, old orchards, riparian areas, desert scrub, savannas, prairies, golf courses, and cemeteries. Prefers open habitat with perches for hunting and dense shrubs for nesting.

Scientific Name	Common Name	Status	Potential to Occur in Project Area	Habitat
Melanerpes lewis	Lewis' woodpecker	NNHP, BLM Sensitive	Low potential. No suitable habitat.	Open forest and woodland, often logged or burned, including oak, coniferous forest.
Phainopepla nitens	Phainopepla	NNHP, BLM Sensitive, MSHCP	Moderate potential to occur within or near the Project area. Could nest in the desert wash and mesquite bosque habitats in the vicinity of the Projects.	Desert, riparian woodlands, and chaparral. Depend on fruiting desert mistletoe (*Phoradendron californicum*), which parasitizes the same trees used for nesting, and produces a stable, long-lasting supply of berries.
Psiloscops flammeolus	Flammulated owl	BLM Sensitive	Low potential. No suitable habitat.	Open pine forests in mountains. Nests typically in ponderosa pine in cool, fairly dry zones. In some areas favors aspen groves. Can be found in dense thickets at lower elevations.
Rallus obsoletus yumanensis	Yuma Ridgway's rail	ESA LE, NNHP, BLM Sensitive	Low potential. No suitable habitat present, though species may migrate over Projects.	Freshwater marshes containing dense stands of cattails and bulrushes.
Spizella breweri	Brewer's sparrow	NNHP, BLM Sensitive	Low potential. Little suitable habitat present.	Strongly associated with sagebrush in areas with scattered shrubs and short grass.
Toxostoma bendirei	Bendire's thrasher	NNHP, BLM Sensitive	High potential to occur within or near the Project area, nesting habitat occurs within Project area.	Found in desert habitats, especially areas of tall vegetation, cholla cactus, creosotebush, and yucca, and in juniper woodland.
Toxostoma crissale	Crissal thrasher	BLM Sensitive	Moderate potential to occur and nest within or near the Project area. Suitable habitat occurs in Project area.	Dense brush along desert streams, mesquite thickets. Habitat varies from dense mesquite along washes to sparse brush in open areas. Also in chaparral, manzanita, and other scrub.
Toxostoma lecontei	LeConte's thrasher	NNHP, BLM Sensitive	Moderate potential to occur and nest within or near the Project area. Suitable habitat occurs in Project area.	Found in desert scrub, mesquite, tall riparian brush, and chaparral. Rarely occurs in habitats consisting of predominantly creosotebush.

Abbreviations: BGEPA = Bald and Golden Eagle Protection Act; BLM = Bureau of Land Management; ESA = Endangered Species Act; LE = Listed Endangered; LT = Listed Threatened; MSHCP = Multiple Species Habitat Conservation Plan for Clark County (https://www.biologicaldiversity.org/programs/public_lands/deserts/nevada/pdfs/cc-appa.pdf); NNHP = Nevada Natural Heritage Program

Source: NNHP Species List tool for Clark County, Nevada (http://heritage.nv.gov/species/lists.php)

5.0 AREAS OF RISK

This section outlines potential risks to birds and bats resulting from implementation of the Projects. **Section 6** describes measures that will be implemented should the Projects be approved to avoid or minimize these risks associated with Project design, construction, and O&M. **Section 7** addresses how the Applicants will monitor and prevent avian and bat species mortality, and **Section 8** outlines Adaptive Management.

5.1 Collision Risk

Vulnerability to collision depends on many factors including bird and bat behavior and maneuverability, topography, weather, and power line design and placement. Bird collision with power lines has been documented for decades, and risk of collision is considered highest in areas where birds congregate, such as power lines that bisect daily flight paths to meadows, wetlands, and river valleys (APLIC 2006).

Birds may have significant "blind spots," increasing risk of collision even during daylight hours. Scanning below for prey or roost sites can render them blind to objects in the direction of travel (Martin and Shaw 2010). Overhead collector lines are the Project components that present the greatest risk of avian collision. Given that the collector lines would only be constructed overhead within the BLM-managed designated utility corridor, and that this corridor is currently populated with multiple electric transmission lines ranging in size from 230 kV to 500 kV, the addition of small sections of additional overhead power line (up to three miles for both Projects) would be unlikely to increase the frequency of in-air collisions. The existing lines have been in place for many years and foraging flight patterns have most likely adapted to the vast size of the utility infrastructure.

5.2 Electrocution

Power lines are present in many wildlife habitats and may result in the electrocution of raptors and other bird species (APLIC 2006; Lehman et al. 2010). The potential for electrocutions depends on the arrangement and spacing of energized and grounded components of poles and towers that are sometimes used for perching, nesting, and other activities (APLIC 2006, 2012). The Projects include three miles of overhead collector lines (two miles for SBSP I and one mile for SBSP II) which represent a potential risk of electrocution or injury to birds.

5.3 Territory Abandonment and Nest Disturbance

Neither the Moapa Band, the BIA, nor the BLM have regulations quantitatively limiting noise generation from projects. If the Projects result in generation of noise levels and ground vibration in excess of standards established in applicable federal, State, and local general plans or noise ordinances, the noise and vibration could affect sensitive species.

There is the potential for some bird species to use the Project area for foraging and nesting. Birds would be susceptible to noise disturbance, potentially resulting in alteration of foraging and/or nesting behaviors. Noise generation, vibration, vegetation removal, and ground-disturbing construction activities may result in nest destruction, nest abandonment, and loss of eggs and young. This impact would be greatest to ground-nesting and burrow-nesting birds such as western burrowing owl. Known golden eagle nesting areas are located three miles west of the Project. It is not expected that noise and other construction activity would affect nesting behavior of these known nests at this distance.

Impacts to vegetation and presence of humans and machinery would deter most birds from within the solar facilities and therefore noise impacts to wildlife would be focused upon species immediately adjacent to the

facilities. Given the location of the facilities, it is assumed that only short-term impacts would occur from noise and vibration during construction, O&M, and decommissioning. Bird species may return to the area after construction.

5.4 Habitat Loss and Fragmentation

An estimated 798 acres (501 acres for SBSP I and 297 acres for SBSP II) would be permanently disturbed by the Projects and 2,872 acres (2,141 acres for SBSP I and 731 acres for SBSP II) would be temporarily disturbed by the Projects. The temporary and permanent disturbance areas are considered suitable foraging habitat for golden eagles and other avian/bat species discussed in this BBCS. Loss of foraging habitat could impact foraging behaviors of these avian and bat species, though the permanent impact of 798 acres of this habitat is very small (0.4 percent, assuming 10-mile foraging area) in comparison to available habitat within the area.

The Project area currently supports suitable nesting and foraging habitat for some avian species, and foraging habitat for some bats. These species could potentially be adversely affected during construction and O&M activities. Bird nesting could also occur in the limited vegetation in the Project area and in ground burrows in or near the Project area. In the vicinity of the Projects, the avian nesting season for most bird species is from late February to early July. The human activity at the SBSPs could attract undesired species, such as ravens, that could affect the ability of other species to nest in the area. Workers will be trained to avoid activities that attract ravens and other scavengers/predators such as coyotes (*Canis latrans*) to the Project area, per the Projects' Raven Control Plan (**Appendix K** of the Environmental Impact Statement [EIS]).

Bat roosts or nursery colonies can occur in a variety of natural substrates or manmade structures that provide specific thermal properties and protection from predators. Typically, these are large, stable structures, uninhabited or with minimal use by humans, such as buildings, barns, bridges, or caves, mines, and trees. Likewise, aquatic features that produce insects can be an important resource for foraging bats. No bat roosting habitat currently exists for sensitive bat species within or near the Projects, but the site provides bat foraging habitat.

Direct habitat loss will occur from the Projects, and habitat fragmentation may reduce the functionality of this area for birds and bats. However, because an abundance of similar lands are available in the vicinity to provide habitat for any individuals displaced from the Projects, and since the Projects are not located in a sensitive, unique, or significant area of ecological importance to bird or bat species, the impacts are likely to be small and have no significant population level effects on any bird or bat species in the area.

5.5 Artificial Lighting

Additional artificial light sources associated with O&M of the SBSPs could attract insects, which may result in concentrated foraging by avian and bat species that feed on insects nocturnally. Artificial lighting also has the potential to negatively affect migration patterns of migratory birds and bats that move through the area. Lighting impacts would be reduced by focusing light sources downward. If lighting at individual solar panels or other equipment is needed for night maintenance, portable lighting will be used.

5.6 Ongoing Human Disturbance

Maintenance would consist of dust control and grounds upkeep, cleaning and repair of PV modules, repair and upkeep of all transformers, inverters and wiring collection systems, control systems upkeep, building maintenance and water treatment, and permanent storm water controls and maintenance.

Routine preventative maintenance activities would be scheduled in accordance with the frequencies outlined in the original equipment manufacturer specifications. O&M would require the use of vehicles and equipment including but not limited to welding, re-fueling, lubricating, and panel washing equipment, forklifts, manlifts, and chemical sprayers for weed abatement. Flatbed trucks and pick-up trucks as well as utility vehicles would be used on a daily basis during construction at the facility.

Major equipment maintenance and overhauls would be completed at intervals of approximately 5–10 years. Replacement of non-functioning equipment may require the use of heavy transport equipment and large overhead cranes. Noise and activity disturbance would occur as a result of the O&M activities, but the impacts would be minor and intermittent in nature and are expected to have little or no added impacts to birds or bats in the area.

6.0 MITIGATION MEASURES

As discussed in **Section 4**, the Project area supports suitable habitat for bird species, thereby creating a potential for impacts to these species from construction and O&M activities. The potential for impacts to bats is low because they are not known to breed in the Project area.

The following construction, O&M, and decommissioning measures will be implemented to minimize potential impacts on avian and bat species.

6.1 Electrocution

To protect avian species from electrocution, APLIC has established guidelines for electric power line design (APLIC 2006, 2012). Incorporating appropriate design standards into the construction of overhead collector lines will minimize electrocution risk.

The overhead collector lines (if constructed) will have clearances between electrical components in accordance with the *Suggested Practices for Avian Protection on Power Lines: the State of the Art in 2006* (APLIC 2006) and *Reducing Avian Collisions with Power Lines* (APLIC, 2012). In situations where particular hardware would present an electrocution risk (e.g., jumpers, cutouts, arrestors, transformers, etc.), perch guards and/or insulators will be installed, per APLIC guidelines, to minimize electrocution risk.

All aspects of the substations, switching stations, transformers and power lines would be constructed utilizing avian-safe practices as suggested by APLIC, using industry standards (APLIC 2006). Any potential electrocution caused mortality to avian or bat species will be captured under the reporting system (**Appendix A**).

6.2 Anti-perching and Nesting

To reduce perching along segments of the overhead collector lines (if constructed), perch deterrents may be installed during construction. Anti-perching and anti-nesting devices, where appropriate, are important tools for reducing the risk of avian electrocution, protecting desert tortoise from increased predation, and keeping the entire electrical system running smoothly. If necessary, perch deterrents will be used primarily to eliminate the use of transmission lines and transmission line towers as hunting perches for raptor species. Deterring this kind of perching will limit the predation of other avian species or animals which use surrounding vegetation for foraging and nesting.

Inspections of lines and other areas where raptors or corvids (crows and ravens) might nest along the collector lines will be conducted monthly during the breeding season (February 15 to August 31) for the first 3 years of operation. Inactive nests are not protected by MBTA, and removal will be conducted prior to the next breeding season. Should nesting activity become a long-term issue, alternate measures to discourage nesting activities should be implemented. Prior to removing or relocating any nests, facility personnel will consult with USFWS and, when necessary, proper USFWS permits will be obtained. Reporting of nests and nest relocation will be completed using forms found in **Appendix B**. Removal of inactive nests discovered by O&M staff will occur throughout the life of the Projects.

Any hollow mine claim markers discovered onsite will also be removed to prevent birds from becoming entrapped.

6.3 Habitat Loss and Fragmentation

Construction of the overhead collector lines would have a temporary effect on vegetation, but these areas will be allowed to revegetate, except within a 10-foot radius around poles for prevention of fire ignition. Wildlife species would be able to utilize these areas for habitat and foraging. Use of the existing gen-tie utility corridor for access largely restricts this impact to a previously impacted area, and aids in reduction of impacts to historically undisturbed areas within the Reservation and on BLM-managed lands.

An Integrated Weed Management Plan (IWMP) has been prepared and submitted to the BIA, BLM, and the Moapa Band for review and approval (**Appendix F** of the EIS). Methods of noxious weed and invasive species identification, prevention, and treatment for the Projects are outlined in the IWMP. The IWMP recognizes the Projects' impact on vegetation and defines the expected treatments and activities necessary to maintain the desired conditions for the vegetation communities within the Project area for the SBSPs.

6.4 Lighting

Lighting will be designed to provide minimum illumination needed to achieve O&M objectives and not emit excessive light to the night sky, This will be accomplished by installing light absorbing shields on top of all light fixtures and by focusing desired light in a downward direction (Reed et al. 1985). This will reduce the visibility of the lights to migratory birds traveling through the area. Downward facing lights will also reduce the number of insects attracted to lights resulting in a decrease of potential concentrated feeding areas for bats. Any additional lighting needed to perform activities such as repairs will be kept to a minimum and only used when these actions are in progress.

6.5 Nest Disturbance and Territory Abandonment

Vegetation clearing and ground-disturbing activities will be conducted outside the migratory bird nesting season, when practical. If ground-disturbing activities cannot be avoided during this time period, pre-construction nest surveys shall be conducted by a qualified biological monitor within 3 days prior to the initiation of ground-disturbing activities. For all non-raptor bird species, surveys will cover all potential nesting habitat in and within 300 feet of the area to be disturbed. Any disturbance or harm to active nests will be reported within 48 hours to the USFWS and the BLM, if on BLM lands. The biological monitor will halt work if it is determined that active nests are being disturbed by construction activities and the appropriate agencies will be consulted.

If vegetation clearing is proposed to begin during the breeding season, a qualified biologist will conduct pre-construction nest surveys within 3 days prior to any vegetation clearing activities to identify all active nests within the construction area, and the vegetation and habitat type in which each nest is found will be recorded. Nest locations will be marked using handheld global positioning system (GPS) devices (but not marked in the field in order to avoid attracting potential nest predators); an avoidance area will be clearly marked on the ground in order to prevent equipment from impacting the nest. Environmental monitors will be in place during vegetation clearing activities during the construction period to minimize impacts to natural resources (see **Section 7** below for more details on monitoring). During clearing activities associated with construction, qualified biologists will destroy bird nests only after young have fledged and will perform any mitigation measures necessary to reduce or eliminate negative effects on avian species inhabiting the construction area. Activities associated with the removal of nests or relocation of western burrowing owls are regulated by the USFWS under the MBTA.

If construction is scheduled to commence during the breeding season, a qualified biologist will conduct pre-construction surveys within suitable habitat for western burrowing owls within 30 days prior to construction and the breeding season. All areas within 250 feet of the Projects will be surveyed, per USFWS 2007 Burrowing Owl Guidance. If an active nest is identified, there will be no construction activities within 250 feet of the nest location to prevent disturbance until the chicks have fledged or the nest has been abandoned, as determined by a qualified biologist. The occurrence and location of any western burrowing owl will be documented by biological monitors in daily reports and submitted to the qualified biologist on a daily basis. The qualified biologist will report all incidents of disturbance or harm to western burrowing owls within 48 hours to the USFWS and report any incidence of mortality on the proper form (**Appendix A**).

When removal of occupied burrows is unavoidable, the following mitigation measures shall be implemented outside of the breeding season:

- Passive relocation methods are to be used by the biological monitors to move the owls out of the impact zone. This includes covering or excavating all unoccupied burrows and installing one-way doors into occupied burrows. This will allow any animals inside to leave the burrow but will exclude any animals from re-entering the burrow. A period of at least 48 hours is required after the relocation effort to allow the birds to leave the impacted area before excavation of the burrow can begin. The burrows should then be excavated and filled in to prevent their reuse.

6.6 Litter Disposal and Removal

To minimize activities that attract prey and predators during construction and O&M, garbage will be placed in approved containers with lids and removed promptly when full to avoid creating attractive nuisances for birds and bats. Open containers that may collect rainwater will also be removed or stored in a secure or covered location so as not to attract birds.

7.0 MONITORING

7.1 Pre-construction Avian Monitoring

Prior to Project construction and where appropriate, monitors will flag the boundaries of areas where activities will need to be restricted to protect the species of concern discussed in this BBCS as well as other plant and animal species not listed.

7.2 Construction Avian Monitoring

During construction, biological monitors will be assigned to the Projects in areas of sensitive biological resources. The monitors will be responsible for ensuring that impacts to special status species, native vegetation, wildlife habitat, or unique resources will be avoided to the fullest extent possible. Areas identified during pre-construction monitoring that are flagged and restricted will be monitored by the biological monitors to ensure species protection during construction.

7.3 Post-construction Mortality Monitoring

Post-construction monitoring is not proposed for these Projects. The Moapa Southern Paiute Solar Project (formerly the K-Road Solar Project) is located on the reservation adjacent to and within the same habitat types as the SBSPs. Avian mortality surveys have been conducted for the Moapa Southern Paiute Solar facility since January 2017. Surveys from January 2017–July 2019 (29 months) have found only nine total avian mortalities at the solar site, four of which were determined to be caused by collision, and all were common species. No post-construction mortality monitoring will be necessary at the SBSPs because this current data from the nearby existing project shows there are no issues related to avian mortalities at this location and within these habitat types. Following construction, O&M staff will be required to participate in the Worker Environmental Awareness Program (WEAP) training described below which will include a reporting protocol if avian mortalities are incidentally found during regular O&M activities.

7.4 Permit Compliance

The Applicants may find it necessary in some situations to obtain federal and State permits related to avian and bat species, including nest removal or relocation permits (depredation permit). In such situations, the Applicants may seek to obtain the relevant permit by working with the federal and State resource agencies to determine which permits are necessary. Under no circumstances will the Applicants perform any activity requiring a permit without first obtaining the proper permit or authorization to do so.

7.5 Training

A WEAP will be prepared and implemented. All construction crews and contractors will be required to participate in WEAP training prior to starting work on the Projects. This training will 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.

7.6 Reporting

Bird mortalities observed during construction of the Projects will be documented and reported to the USFWS within 48 hours. The Mortality Reporting Data Form found in **Appendix A** will be used to report bird mortalities.

8.0 ADAPTIVE MANAGEMENT

This BBCS is a "living" document. Adaptive management will ensure an ongoing open communication between the Applicants and the agencies. The parties will cooperatively evaluate issues if they arise. The Applicants will work collaboratively with the BIA, BLM and USFWS to comply with legal requirements as well as the requirements contained within this BBCS.

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APPENDIX A MORTALITY REPORTING DATA FORM

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SOUTHERN BIGHORN SOLAR PROJECTS
MORTALITY REPORTING FORM

DATE: _____ TIME: _____ OBSERVER: _____

PROXIMAL TO PROJECT COMPONENT: _____

CARCASS POSITION

GPS COORDINATES East: _____North: _____

BEARING (degrees) to PROJECT COMPONENT: _____

DISTANCE (meters) to PROJECT COMPONENT: _____

CARCASS DESCRIPTION

SPECIES: _____

SEX (*circle*): M F U AGE (*circle*): A J U Tag/Band Number: _____

CONDITION (*circle*): intact scavenged dismembered feather spot injured

ESTIMATED TIME SINCE DEATH/INJURY (no. of days): <1 1 2 3 4 5 6 7 7+

CAUSE OF DEATH:

_____

_____

_____

OBSERVABLE INJURIES:

_____

_____

_____

SUBSTRATE/GROUND COVER (*at carcass location)*:_____

DISPOSITION OF CARCASS[1] (*circle*): left in place removed collected for trials collected for other:

_____

SHIPPED TO:

[name of institution]

_____

[physical address]

_____

[phone/email]

_____

WEATHER CONDITIONS

AIR TEMPERATURE (degrees Fahrenheit): _____

PRECIPITATON (last 24 hours, *circle*): none light rain rain heavy rain hail snow

CLOUD COVER (*circle*): clear mostly clear partly cloudy mostly cloudy cloudy

WIND DIRECTION: _____ SPEED (mph, *circle*): 0-10 10-20 20-30 30+ gusty

NOTES (describe noteworthy weather conditions since last search, including high wind, fog, precipitation, and storm events):

_____

_____

_____

_____

_____

PHOTOGRAPHS[2]:

Close Up: Photo 1 _____ Photo 2 _____

Landscape: Photo 3 _____ Photo 4 _____

PHOTO NOTES:

_____

_____

NOTIFICATION[3]:

DATE: _____ TIME: _____

NAME: _____ AGENCY/ASSOCIATION: _____

NOTES:

_____

_____

_____

_____

_____

_____

[1] Permit required to handle bird carcasses.

[2] At least four photographs should be taken. Two should be close-in shots of the carcass and should be taken from at least two different angles. Two should be shots taken farther away showing the landscape (project components, surrounding habitat, etc.) and should be taken from at least two different angles).

[3] Indicate who was notified of the event, date, time, etc.

APPENDIX B NEST REPORTING DATA FORM

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SOUTHERN BIGHORN SOLAR PROJECTS

NEST REPORTING FORM

DATE: _____TIME: _____ OBSERVER: _____

PROXIMAL TO PROJECT COMPONENT: _____

NEST POSITION

GPS COORDINATES East: _____ North:_____

BEARING (degrees) to PROJECT COMPONENT: _____

DISTANCE (meters) to PROJECT COMPONENT: _____

NEST DESCRIPTION

SPECIES: _____

SEX OF INDIVIDUALS AT NEST (*circle all that apply*): M F U

AGE (*circle all that apply*): A J U

ESTIMATED NUMBER OF EGGS/CHICKS (IF APPLICABLE) _____

GENERAL DESCRIPTION OF NEST SITE

Substrate (e.g., cliff or outcrop [rock type], tree/shrub [species, live/dead], ground, artificial structure [type]):

_____

Estimated height of substrate: _____(m) Estimated height of nest above ground: _____(m)

Nest type and location on substrate (e.g., stick nest in upper/lower canopy stick nest on/in ledge, pothole, or crevice; scrape on/in ledge, pothole, or crevice; stick nest on artificial platform mounted in tree; tree cavity; burrow; etc.):

_____

Protection from weather (YES/NO; describe nature of protection, e.g., tree canopy, cliff backdrop, pothole/crevice, burrow, etc.):

_____

Approximate compass direction of exposure to elements (wind, sun, etc.): _____

Nest size—indicate whether estimated or measured: _____

Height (top to bottom)_____ Width (left to right)_____ Depth (back to front)_____ (meters)

Known or probable alternative nests within territory and associated nest #'s:

_____

_____

_____

PHOTOGRAPHS[1]:

Close Up: Photo 1 _____ Photo 2_____

Landscape: Photo 3 _____ Photo 4_____

PHOTO NOTES:

_____

_____

NOTIFICATION[2]:

DATE: _____ TIME: _____

NAME: _____ AGENCY/ASSOCIATION: _____

NOTES:

_____

_____

_____

_____

[1] At least four photographs should be taken. Two should be close-in shots of the nest and should be taken from at least two different angles. Two should be shots taken farther away showing the landscape (project components, surrounding habitat, etc.) and should be taken from at least two different angles).

[2] Indicate who was notified of the event, date, time, etc.

Appendix I

Raven Control Plan

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Southern Bighorn Solar Projects

RAVEN CONTROL PLAN

TABLE OF CONTENTS

LIST OF ACRONYMS AND ABBREVIATIONS

APLIC	Avian Power Line Interaction Committee
BESS	battery energy storage system
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
EIS	Environmental Impact Statement
ESMSP	Eagle Shadow Mountain Solar Project
Gen-tie	generation interconnection line
I-15	Interstate 15
kV	kilovolt
MBTA	Migratory Bird Treaty Act
Moapa Band	Moapa Band of Paiute Indians
mph	miles per hour
MWac	megawatts alternating current
O&M	operations and maintenance
PV	photovoltaic
Reservation	Moapa River Indian Reservation
RCP	Raven Control Plan
ROW	right-of-way
SCADA	Supervisory Control and Data Acquisition
SBSP I	Southern Bighorn Solar Project I
SBSP II	Southern Bighorn Solar Project II
US 93	U.S. Highway 93
USFWS	U.S. Fish and Wildlife Service

1.0 INTRODUCTION

1.1 Background

This Raven Control Plan (RCP) lists procedures two solar projects will follow, if the projects are approved, for the protection of wildlife species, such as the desert tortoise, from predation by other species that may be attracted to the projects as a result of construction or operation activities. The two projects are the Southern Bighorn Solar Project I (SBSP I) and Southern Bighorn Solar Project II (SBSP II), collectively referred to as the Projects and/or SBSPs.

The RCP is being submitted to the U.S. Fish and Wildlife Service (USFWS) and Bureau of Indian Affairs (BIA) for approval prior to implementation. Once approved, the Applicants will be responsible for implementing the plan for the entire Projects. This RCP addresses activities that will occur during construction and operation of the Projects regarding control of ravens as a nuisance species.

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

Avian predators such as the common raven, loggerhead shrike (*Lanius ludovicianus*), and American kestrel (*Falco sparverius*) may be drawn to the Project area due to the increase in food sources (such as refuse and garbage cans) and an increase in nesting/perching areas (such as overhead collector lines). The solar generating facilities provide suitable habitat for the desert tortoise. Avian predators drawn to the Projects may forage nearby. An increase in avian predators within a project area is known to have an indirect negative effect on the desert tortoise (USFWS 2011). Implementing this RCP is intended to reduce this potential impact.

1.2 Purpose of this Plan

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

1.3 Project Description

300MS 8me, LLC and 425LM 8me, LLC (Applicants), both subsidiaries of 8minute Solar Energy, have each entered into agreements with the Moapa Band of Paiute Indians (Moapa Band) to lease two adjacent sections of land for up to 50 years on the Moapa River Indian Reservation (Reservation) for the purposes

of constructing, operating and maintaining, and eventual decommissioning of solar photovoltaic (PV) electricity generation facilities (referred to as the solar fields) and battery energy storage system (BESS).

The infrastructure for the Projects would include approximately 10 miles of electric collector lines (7 miles for SBSP I and 3 miles for SBSP II) that would connect the Projects to a substation for each Project within the boundaries of the previously approved Eagle Shadow Mountain Solar Project (ESMSP). From there, the electricity generated would connect to the existing 230-kilovolt (kV) transmission generation interconnection (gen-tie) line within a designated utility corridor which would deliver the electricity to the regional grid at NV Energy's Reid Gardner Substation. The primary access routes to the Projects would utilize existing roads. Access would be via Interstate (I-15), U.S. Highway 93 (US 93), and North Las Vegas Boulevard, and then along existing access roads on the Reservation.

1.3.1 Project Area

The Projects would be located approximately 30 miles northeast of Las Vegas in Clark County, Nevada, west of I-15 and east of US 93. The solar fields would be constructed on up to approximately 2,600 acres for SBSP I and 1,000 acres for SBSP II (3,600 acres combined) within a lease option area of approximately 6,355 acres of tribal trust land within the Reservation. The Projects would be located in Township 16 South, Range 64 East that includes all or parts of Sections 12–14, 22–27, and 33–36; Township 16 South, Range 65 East, Sections 4–9, 16–18, 30, and 31; and Township 17 South, Range 64 East, Sections 10–12, Mount Diablo Baseline and Meridian, Nevada . (**Figure I-1**). This land was set aside by the Moapa Band exclusively for the Projects.

The Project area is located in the Mojave Warm Desert and Mixed Desert Scrub habitat (Wildlife Action Plan Team 2012), which includes the creosotebush, Joshua tree forest, and tall and short blackbrush plant communities. The area is dominated by open stands of creosote bush (Larrea tridentata) and white bursage (Ambrosia dumosa). Desert saltbush (Atriplex spp.) scrub habitat and cactus-yucca scrub are also present and concentrated within ephemeral washes habitat (Wildlife Action Plan Team 2012). A more detailed description of the Project area can be found in the Environmental Impact Statement for the Projects.

1.3.2 Proposed Action

The following sections describe the major features of the Proposed Action. For a comprehensive description of the Proposed Action, refer to the associated Environmental Impact Statement (EIS). **Figure I-2** shows the conceptual site plan for the Projects.

The Projects would utilize PV solar panels to generate a combined capacity of up to 400 megawatts alternating current (MWac) of electricity: 300 MWac for SBSP I and 100 MWac for SBSP II. Mounted PV solar panels, inverter stations, and transformers would be combined to form solar blocks which would be repeated to create electrical energy.

The solar fields may include an O&M building with onsite parking for each of the Projects. Additional components of the O&M building would include aboveground water storage tanks, signage, a flagpole, trash containers, and Supervisory Data Control and Acquisition (SCADA) system. Each of the Projects would be enclosed within a chain link perimeter fence measuring up to 8 feet in height (from finished grade) with a 6- to 8-inch opening at the bottom of the fence to allow for the movement of desert tortoises into and through the site during O&M. The O&M facilities would be surrounded by fencing that does not include the desert tortoise opening due to safety issues.

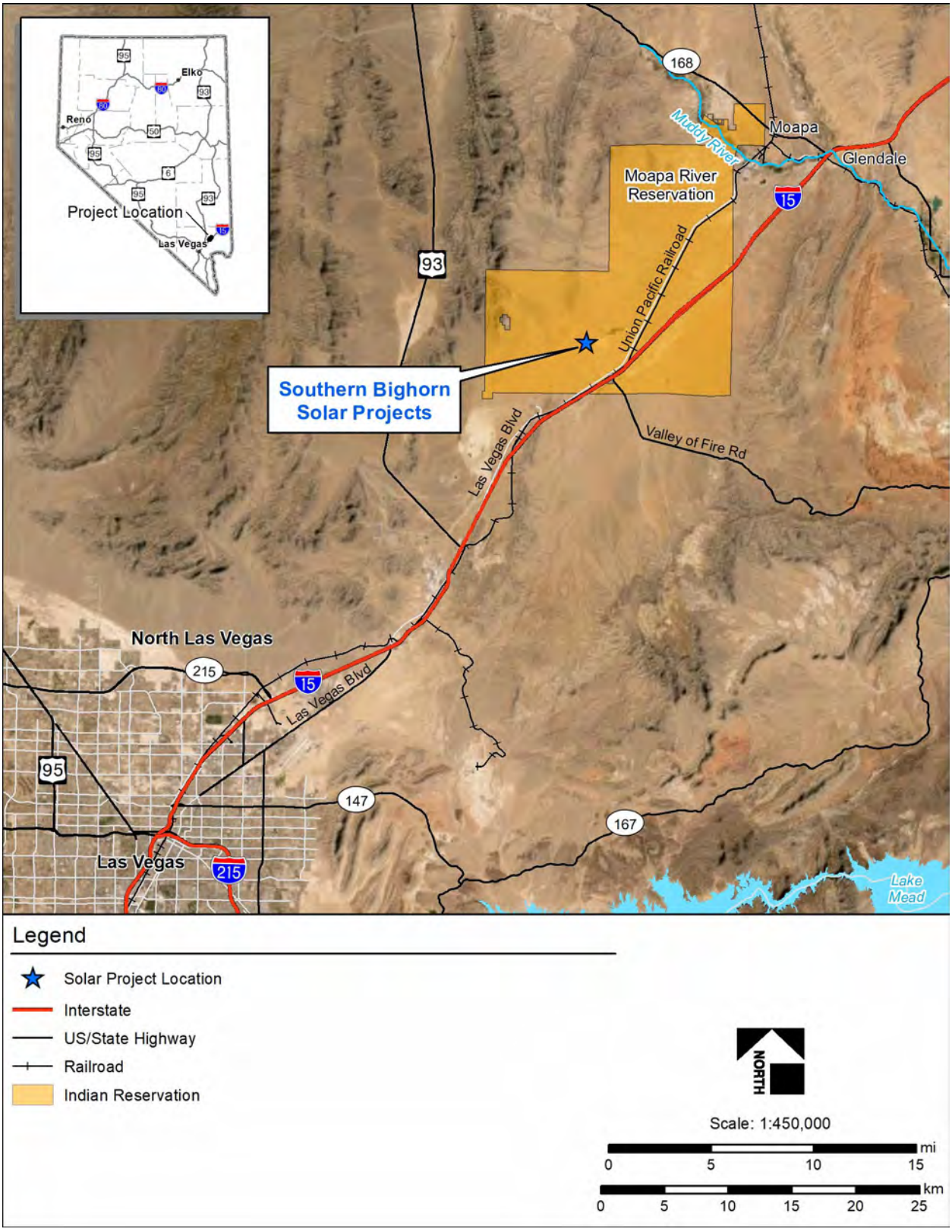

Figure I-1. Project Vicinity

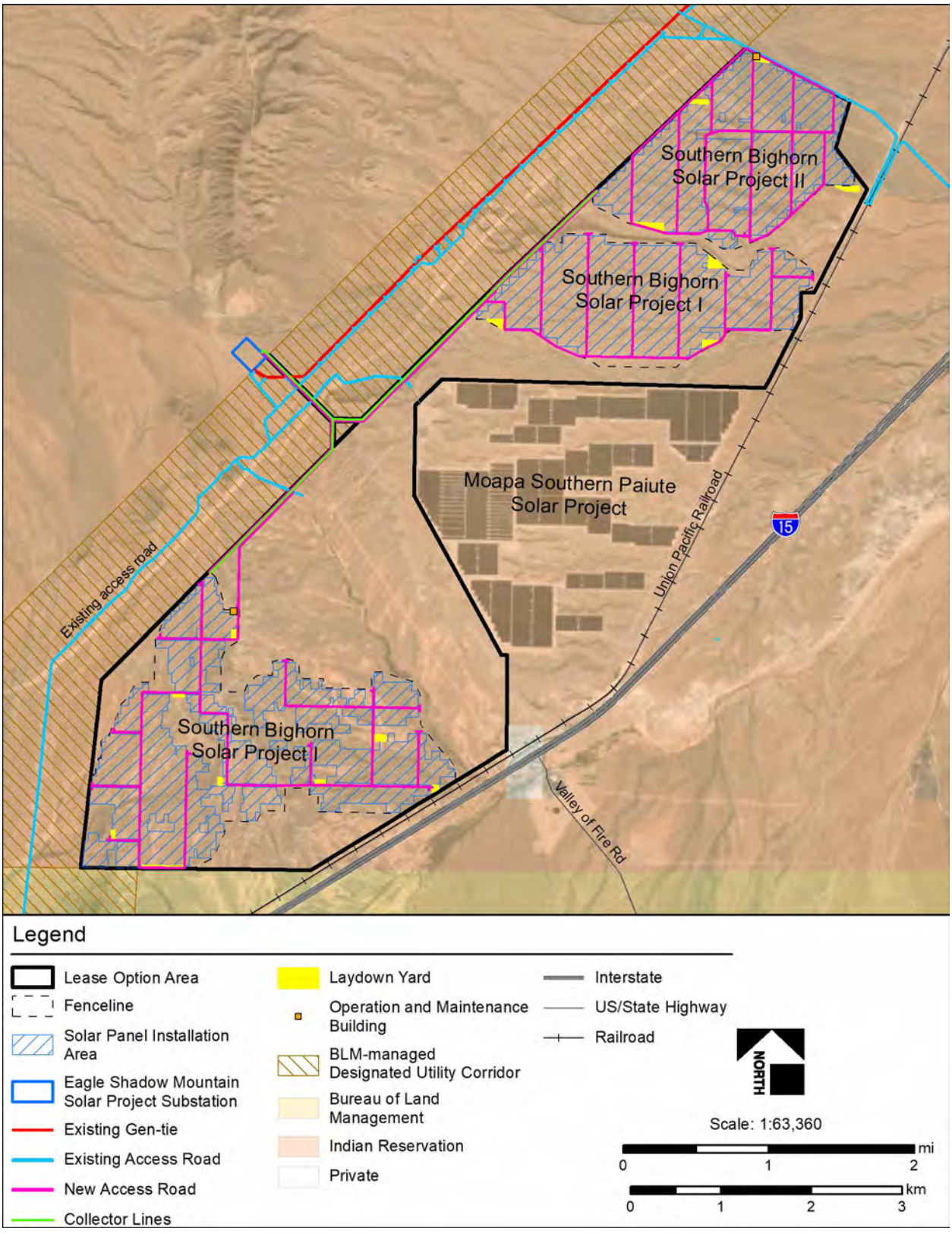

Figure I-2. Project Layout

Energy generated from the solar blocks would be transferred through collector lines from inverters within each solar field to each Project's substation, located in the previously approved ESMSP high-voltage area. The Projects include 10 miles of collector lines (7 miles for SBSP I and 3 miles for SBSP II) consisting of four separate lines (three for SBSP I and one for SBSP II). The Applicants intend to install the collector lines entirely underground, however, up to 4 miles (3 miles for SBSP I and 1 mile for SBSP II) may be installed overhead where the collector lines cross the Bureau of Land Management (BLM)-managed designated utility corridor to avoid conflicts with existing underground utilities.

2.0 RAVEN MANAGEMENT

2.1 Introduction

The raven management measures provided in this section were designed to discourage the presence of common ravens and other avian scavengers by limiting the availability of additional food and water resources, as well as roost and nest site opportunities on the SBSPs. Implementing the raven management measures will be the responsibility of the Project owners and the Environmental and Construction managers. The Worker Environmental Awareness Program will be implemented during construction, O&M, and decommissioning, which will include review of all the raven management measures described below. References to "ravens" in this RCP should be interpreted to mean ravens and other avian scavengers.

2.2 Reduce Access to Food and Water Resources

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

Project construction activities are likely to attract ravens. To prevent the addition of food and water subsidies, as well as to avoid attracting ravens to the Project area, the Applicants will implement the following measures.

2.2.1 Garbage Management

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

2.2.2 Prohibitions on Intentionally Feeding Ravens

Project personnel will be prohibited from intentionally feeding ravens and other wildlife on and in the vicinity of the Projects. The Worker Environmental Awareness Program will inform Project personnel that they are prohibited from intentionally feeding ravens and will explain why feeding wildlife is detrimental to wildlife, including sensitive species, in and around the Project area.

2.2.3 Limit Availability of Water

Water is a valuable resource in the desert and natural sources are limited during the late spring and summer. In order to ensure that Project activities do not create an unnatural water source during construction, O&M, and decommissioning, water will be used in a manner that does not result in ponding or puddling, excluding storm water detention/retention basins, which will be designed to eliminate standing water within the basins within several days after even the worst expected storm events. Truck cleaning areas will be kept free of standing water during construction, O&M, and

decommissioning. Water used for dust suppression will be applied at a rate that does not result in ponding or puddling. If PV solar panel washing is necessary, it will be conducted in a manner that avoids ponding or puddling of water during times that ravens are active (early morning and late afternoon).

2.3 Discourage Nesting

To discourage nesting on Project structures, the Applicants will implement the following measures:

1. **Limiting Raptor Enhancement Measures.** Utility pole design and construction will meet Avian Power Line Interaction Committee (APLIC) guidelines (APLIC 2006, 2012) intended to prevent avian mortality and discourage or eliminate the potential for raptor nests that could also be used by ravens.
2. **Utility and building structures.** Acquire a Migratory Bird Treaty Act (MBTA) Depredation Permit in order to remove any raven nests that are found on Project infrastructure. USFWS will be consulted on any nest removal.
3. **Hazing**. Unless implemented properly, hazing could have unintended consequences. Therefore, hazing will be implemented only under the direction of USFWS in situations where it is considered the best course of action.
4. **Structure removal.** Elevated structures including utility poles will be removed during decommissioning.
5. **Perch deterrents.** To reduce perching along overhead segments of the collector lines (if applicable), perch deterrents may be installed during construction. Anti-perching and nesting devices are important tools for reducing the risk of avian electrocution and keeping the entire electrical system running smoothly. These deterrents also eliminate the use of power lines and power line towers as hunting perches for raptor species, limiting the predation of other avian species or animals that use surrounding vegetation for foraging and nesting. Exact locations of perch deterrent poles will be determined in consultation with wildlife agencies prior to construction of the collector lines.
6. **Annual inspections.** Inspections of utility lines and other areas where raptors or corvids (crows and ravens) might nest will be conducted annually during the breeding season. Inactive nests are not protected by MBTA, and removal will be conducted prior to the next breeding season. Should nesting activity become a long-term issue, alternate measures to discourage nesting activities should be implemented. Prior to removing or relocating any nests, facility personnel will consult with USFWS and, when necessary, proper permissions from USFWS will be obtained. Nests will be removed for the life of the Projects. More details on inspections, monitoring, and reporting are provided below in Section 3.0.

2.4 Discourage Roosting

Collector line structures or substations can provide roosting opportunities in areas where roosting opportunities are otherwise limited. Elevated roost locations offer ravens a view of their surroundings and prey below. If ravens are strongly attracted to the Project area by available food and/or water sources, it will be difficult to eliminate or control perching on Project structures or other nearby structures, such as existing transmission line towers. Ravens can be very persistent, and even if Project design features effectively discourage perching in the Project area, ravens attracted to the area will likely find other perching opportunities immediately adjacent to the Project area. Anti-perching

activities, therefore, are more focused on preventing activities that will attract ravens to the Projects (Boarman 2002), which include:

- **Roost prevention as a contingency.** To avoid the introduction of new roost and nest locations for ravens (and consequently, non-target avian species), the Applicants will ensure perch enhancements are not installed. The SBSPs will be monitored to identify frequently used locations. Contingency measures will be implemented on a case-by-case basis, in consultation with BIA, when it becomes apparent that a particular location is favorable for daytime perches or evening roosting. This could include, for example, installation of triangles, plastic owls, and/or spikes to discourage nesting, per APLIC Guidelines (APLIC 2006).
- **Structure removal.** All Project-related elevated structures will be removed when the Projects are decommissioned.
- **Limit speed limits to under 25 miles per hour (mph).** This will reduce the potential for roadkill, which attracts birds and increases roosting.

3.0 RAVEN MONITORING AND REPORTING

3.1 Monitoring

Raven monitoring will be conducted following the construction of the SBSPs. The objective of the surveys will be to identify raven presence in the vicinity of the Projects and to monitor frequency of occurrence and behavior in those areas over time. The purpose of the surveys will be to identify the local sources of human-created resources and raven activity relative to the Projects.

Raven monitoring will consist of driving surveys. Project roads will be driven slowly (<10 mph). Binoculars and spotting scopes will be used to observe raven activity within 2 kilometers of the Project area. All raven observations will be documented, including date, time, location, habitat, number of individuals, and behavior, as well as locations of occupied and potential nests. Survey visits will occur once monthly during the breeding season (February to August) during construction and for 3 years following completion of construction, and then once annually thereafter for the duration of facility operations and decommissioning. Each survey visit will last two days. Each day the survey route will be driven once in the early morning (starting 30 minutes prior to sunrise), a second time in the midday (starting between noon and 2 p.m.), and a third time in the evening (completed within one hour following sunset) (BLM 2014).

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

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

3.2 Reporting

The Applicants will submit monitoring summary reports to the BIA and USFWS on an annual basis. The report will include:

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

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

3.3 Adaptive Management

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

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Appendix J

Gila Monster Reporting Protocol

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NEVADA DEPARTMENT OF WILDLIFE
SOUTHERN REGION

3373 Pepper Lane, Las Vegas, Nevada 89120
Phone: 702-668-3839 or 702-486-5127; Fax: 702-486-5133

5 February 2020

GILA MONSTER STATUS, IDENTIFICATION AND REPORTING PROTOCOL FOR OBSERVATIONS

Status

- The **Gila monster (*Heloderma suspectum*) is** secretive, difficult to detect, and seemingly rare relative to other species. These attributes led the **State of Nevada** decades ago to classify the species as **Protected** (Nevada Administrative Code 503.080). Their populations are also vulnerable to poaching, the cumulative effects of habitat loss, fragmentation and degradation, and climate changes (Wildlife Action Plan Team 2012).

- Therefore, a person shall not hunt or take any protected wildlife, or possess any part thereof, without first obtaining the appropriate license, permit or written authorization from the Nevada Department of Wildlife (Nevada Administrative Codes 503.090 and 503.093).

- The USDI Bureau of Land Management has recognized this lizard as a sensitive species since 1978 and is to manage public lands in a manner to avoid the necessity of higher federal protections (BLM Manual 6840 – Special Status Species).

- In Clark County's Multiple Species Habitat Conservation Plan (MSHCP), the Gila monster is an *Evaluation Species*, meaning inadequate information exists to determine if mitigation from MSHCP implementation would demonstrably cover conservation actions necessary to ensure its persistence without additional protective intervention as provided under the federal Endangered Species Act.

- While the Gila monster is the only venomous lizard endemic to the United States, its behavioral disposition is somewhat docile and avoids confrontation. But it will readily defend itself if threatened. Most bites are considered *illegitimate*, not caused by Gila monster aggression, but resulting from human harassment or careless handling. Gila monsters are not dangerous unless molested or inappropriately handled and should never be harmed or killed.

- The Nevada Department of Wildlife (NDOW) has ongoing management studies for greatly improving our understanding specific to Nevada's banded Gila monster populations; hence, **additional sightings and descriptions for this species distribution, habitat, and biological information is of utmost interest**.

- In assistance to gathering additional information about Nevada's Gila monsters, **NDOW will be notified whenever a Gila monster is encountered or observed**, and under what circumstances (see Reporting Protocol below).

Identification

The banded Gila monster (*H. s. cinctum*) is the only wild subspecies occurring in Nevada, and is restricted to Clark, Lincoln, and Nye counties. Found mainly below 5,000 feet elevation, its geographic range approximates that of the desert tortoise (*Gopherus agassizii*) in Nevada. Gila monster habitat requirements center on complex rocky landscapes of upland desert scrub overlapping desert wash, spring, and riparian habitats, often characteristic of alluvial fans (bajadas) and adjacent rocky fields. Gila monster habitat overlaps that of both the desert tortoise and chuckwalla (*Sauromalus ater*).

Gila monsters are recognizable by a striking black and orange-pink coloration and bumpy, or beaded, skin. In keeping with its name, the banded Gila monster (shown left) retains a black chain-link, banded pattern into adulthood. Sometimes other non-venomous lizards are mistaken for the Gila monster. Of these, the western banded gecko (*Coleonyx variegatus*) and the chuckwalla are the most frequent. All three share similar habitats.

To untrained eyes, the color pattern and finely granular skin of the western banded gecko (right) may have the looks of a baby or juvenile Gila monster. But gecko heads are more pointed at the snout and the relatively large eyes have *vertical* pupils befitting their nighttime habits. Gila monsters may be both nocturnal and diurnal; the smallish eyes have *round* pupils. Snouts are bluntly rounded. Newly hatched Gila monsters vary in length at 5-7 inches with a vivid orange and black, banded pattern. Western banded geckos are generally smaller than 4 inches with cream to yellow background colors and brown to purple banded patterns.

Chuckwalla adults (left) and juveniles have a body shape somewhat suggestive of the Gila monster, but they lack the coarsely beaded skin and showy black and orange-pink body pattern. While juvenile chuckwallas can have orange and black banded tails, this colorful banding fades as chuckwallas mature. From nose to tail tip, adult chuckwallas may reach 17 inches long, rivaling that of the Gila monster. Chuckwallas are herbivorous. When alarmed, they are fast movers seeking cracks and crevices into which they can wedge themselves by inflating their bodies with air. Chuckwallas are diurnal and rock dwellers.

Reporting Protocol

Field workers (e.g. construction foremen, bio-monitors) must at least know how to: (1) identify a Gila monster by distinguishing it from other lizards like the chuckwalla and western banded gecko (see **Identification** above); (2) Report any Gila monster observation to the NDOW; (3) Be aware of the consequences of a Gila monster bite resulting from carelessness or unnecessary harassment; and, (4) Be advised of protective measures provided under state law and federal management policies.

1) Live Gila monsters found in harm's way in the construction site will be captured and then detained by the project biologist or equivalent personnel in a cool (≤85°F), shaded environment (air-conditioned vehicle or trailer is okay) until a NDOW biologist can arrive for biological documentation prior to its release Although a Gila monster is venomous and can inflict a serious bite, its relatively slow gate allows for it to be easily coaxed or carefully lifted into an open bucket or box using a long handled instrument like a snake hook, tongs, or shovel (*Note: it is not the intent to request unreasonable action to facilitate captures; additional coordination with NDOW will clarify logistical points*). For safe detainment, an unused or sterile 5-gallon plastic bucket with a secure, vented lid; an 18"x18"x4" plastic sweater box having a secure, vented lid; or, a tape-sealed cardboard box of similar dimension may be used. And, written information identifying the mapped capture location, Global Positioning System (GPS) coordinates in Universal Transverse Mercator (UTM) using North American Datum (NAD) 83 Zone 11 along with date, time, and circumstances (e.g. biological survey, construction monitoring) and habitat description (e.g. vegetation, slope, aspect, substrate) will also be provided to NDOW.

2) Injuries to Gila monsters may occur during excavation, blasting, road grading, or other construction activities. In the event a Gila monster is injured, it should be transferred to a veterinarian proficient in reptile medicine for evaluation of appropriate treatment. Therapy or euthanasia expenses will not be covered by NDOW. However, NDOW will be immediately notified of any injury to a Gila monster and which veterinarian is providing care for the animal. If an animal is killed or found dead, the carcass will be immediately frozen and transferred to NDOW with a complete written description of the discovery and circumstances, date, time, habitat, and mapped location (GPS coordinates in UTM using NAD 83 Z 11).

3) Should NDOW's assistance be delayed, biological or equivalent acting personnel on site should detain the Gila monster out of harms way until NDOW personnel can respond. **The Gila monster should be detained until NDOW biologists have responded**. Should NDOW not be immediately available to respond for photo-documentation, a digital camera (≥5 mega-pixels) will be used to take good quality images of the Gila monster *in situ* at the location of live encounter or dead salvage. The pictures will be provided to NDOW at the address above or the email address below along with specific location information including GPS coordinates in UTM using NAD 83 Z 11, date, time and habitat description. Pictures will show the following information: (1) Encounter location (landscape with Gila monster in clear view); (2) a clear overhead shot of the entire body with a ruler next to it for scale (Gila monster should fill camera's field of view and be in sharp focus); and, (3) a clear, overhead close-up of the head (head should fill camera's field of view and in sharp focus).

Please Remember: Gila monsters are considered sensitive species and sharing of observation information to sources outside of NDOW or other permitting agencies may result in adverse conservation or administrative consequences.

Contact NDOW Biologist Jason L. Jones at 702.668.3938 (office), 208-240-0194 (cell; leave message or text), 702.486.5127 (front desk) or by e-mail at jljones@ndow.org for additional information regarding these protocols.

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Appendix K

BLM Sensitive and Nevada State Listed Species

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Southern Bighorn Solar Projects

BLM SENSITIVE SPECIES AND NEVADA STATE-LISTED SPECIES

The following table was compiled using species lists from the four previous environmental impact statements (EISs) for solar projects on the Reservation (Southern Paiute Solar Project [Bureau of Indian Affairs (BIA) 2012: pages 3-47 through 3-51]; Moapa Solar Energy Center [BIA 2014: pages 3-33 through 3-36 and 3-43 through 3-46]; Aiya Solar Project [BIA 2016: pages 3-28 through 3-43], and Eagle Shadow Mountain Solar Project [BIA 2019: pages 3-24 through 3-35]), the Nevada Natural Heritage Program (NNHP) Species List tool (http://heritage.nv.gov/species/lists.php), the NNHP Plant and Animal Watch List (NNHP 2020a), and the NNHP At-Risk Plant and Animal Tracking List (NNHP 2020b). Only species with the potential to occur within the Project area for the Southern Bighorn Solar Projects (SBSPs) are included in **Table K-1**.

Table K-1. Nevada State-listed and BLM Sensitive Plants and Wildlife

Scientific Name	Common Name	Status	Potential to Occur in Project Area	Habitat
Birds				
Aquila chrysaetos	Golden eagle	NNHP, BLM Sensitive, BGEPA, MSHCP	Low potential to occur. Foraging habitat within the Project area. No breeding habitat present, with nearest 3 miles to the west of the Projects.	Prefers open country, especially around mountains, hills, and cliffs; use a variety of habitats ranging from arctic to desert, including tundra, shrublands, grasslands, farmland, and area along rivers and streams.
Athene cunicularia hypugaea	Western burrowing owl	NNHP, BLM Sensitive, MSHCP	High potential to be present within or near Project area. Nesting and foraging habitat present.	Open habitats, sparse vegetation such as prairie, pastures, desert or shrub-steppe, and airports. Associated with prairie dogs and ground squirrels, whose burrows they use for nests.
Auriparus flaviceps	Verdin	NNHP	High potential foraging and nesting habitat within and near the Project area. Potential nesting habitat along ephemeral washes.	Inhabits desert regions of the U.S. and northern Mexico. Found wherever thorny scrub vegetation is present and prefer to nest in acacias (*Acacia* spp.), paloverde (*Cercidium* spp.), smoke tree (*Dalea spinosa*), mesquite (*Prosopis* spp.), or desert lavender (*Hyptis emoryi*).
Buteo regalis	Ferruginous hawk	NNHP, BLM Sensitive, MSHCP	Low potential, little suitable habitat present.	Open grasslands, sagebrush flats, low foothills, and fingers of pinyon-juniper habitat
Buteo swainsoni	Swainson's hawk	NNHP, BLM Sensitive	Low potential. No suitable habitat.	Agricultural valleys with cotton, elm, or other suitable nest trees.

Scientific Name	Common Name	Status	Potential to Occur in Project Area	Habitat
Charadrius alexandrines nivosus	Western snowy plover	NNHP, BLM Sensitive	Low potential. No suitable habitat.	Beaches, dry mud or salt flats, sandy shores of rivers, lakes, and ponds.
Falco peregrinus	Peregrine falcon	NNHP, BLM Sensitive, MSHCP	Low potential. Little suitable foraging habitat and no breeding habitat.	Mountains, open forested regions, and human population centers.
Gymnorhinus cyanocephalus	Pinyon jay	BLM Sensitive	Low potential. No suitable habitat.	Pinyon-juniper woodland, less frequently pine, also occurs in scrub oak and sagebrush.
Hailiaeetus leucocephalus	Bald eagle	BLM Sensitive, BGEPA	Low potential. No suitable habitat.	Large bodies of water for feeding. Mature trees for roosting.
Ixobrychus exilis	Least bittern	NNHP, BLM Sensitive	Low potential. No suitable habitat.	Fresh marshes, reedy ponds. Mostly freshwater but also brackish, in areas with tall, dense vegetation standing in water.
Lanius ludovicianus	Loggerhead shrike	NNHP, BLM Sensitive, MSHCP	High potential. Foraging and nesting habitat within and near the Project area.	Open country with short vegetation and well-spaced shrubs or low trees, with spines or thorns; frequents agricultural fields, pastures, old orchards, riparian areas, desert scrub, savannas, prairies, golf courses, and cemeteries. Prefers open habitat with perches for hunting and dense shrubs for nesting.
Melanerpes lewis	Lewis' woodpecker	NNHP, BLM Sensitive	Low potential. No suitable habitat.	Open forest and woodland, often logged or burned, including oak, coniferous forest.
Phainopepla nitens	Phainopepla	NNHP, BLM Sensitive, MSHCP	Moderate potential to occur within or near the Project area. Could nest in the desert wash and mesquite bosque habitats in the vicinity of the Projects.	Desert, riparian woodlands, and chaparral. Depend on fruiting desert mistletoe (*Phoradendron californicum*), which parasitizes the same trees used for nesting, and produces a stable, long-lasting supply of berries.
Psiloscops flammeolus	Flammulated owl	BLM Sensitive	Low potential. No suitable habitat.	Open pine forests in mountains. Nests typically in ponderosa pine in cool, fairly dry zones. In some areas favors aspen groves. Can be found in dense thickets at lower elevations.
Spizella breweri	Brewer's sparrow	NNHP, BLM Sensitive	Low potential. Little suitable habitat present.	Strongly associated with sagebrush in areas with scattered shrubs and short grass.

Scientific Name	Common Name	Status	Potential to Occur in Project Area	Habitat
Toxostoma bendirei	Bendire's thrasher	NNHP, BLM Sensitive, MSHCP	High potential to occur within or near the Project area, nesting habitat occurs within Project area.	Found in desert habitats, especially areas of tall vegetation, cholla cactus (*Cylindropuntia* spp.), creosotebush (*Larrea tridentata*), and yucca (*Yucca* spp.), and in juniper woodland.
Toxostoma crissale	Crissal thrasher	BLM Sensitive	Moderate potential to occur and nest within or near the Project area. Suitable habitat occurs in Project area.	Dense brush along desert streams, mesquite thickets. Habitat varies from dense mesquite along washes to sparse brush in open areas. Also in chaparral, manzanita, and other scrub.
Toxostoma lecontei	LeConte's thrasher	NNHP, BLM Sensitive, MSHCP	Moderate potential to occur and nest within or near the Project area. Suitable habitat occurs in Project area.	Found in desert scrub, mesquite, tall riparian brush, and chaparral. Rarely occurs in habitats consisting of predominantly creosotebush.
Mammals				
Antrozous pallidus	Pallid bat	NNHP, BLM Sensitive	Low potential to occur. Reliance on tree roosts.	Arid deserts and grasslands. Shallow caves and crevices, rock outcrops buildings, and tree cavities.
Corynorhinus townsendii	Townsend's big-eared bat	NNHP, BLM Sensitive	Low potential to occur. Mine and cave obligates. No suitable habitat.	Salt desert scrub, sagebrush and pinyon juniper, mahogany. Will not live in extreme desert environments.
Euderma maculatum	Spotted bat	NNHP, BLM Sensitive	Low potential to occur, prefers riparian areas for foraging.	Desert scrub to forest habitats. Roosts in caves and crevices.
Idionycteris phyllotis	Allen's lappet-eared bat	NNHP, BLM Sensitive	Low potential to occur. Prefers high coniferous forest.	Uses a variety of habitats including Mojave desert scrub, coniferous forests, and riparian woodlands.
Lasiurus blossevillii	Western red bat	NNHP, BLM Sensitive	Low potential to occur. No suitable habitat.	Woodland habitats, Muddy River area.
Mactrous californicus	California leaf-nosed bat	NNHP, BLM Sensitive	Low potential to occur. Occurs at lower elevations.	Inhabits low deserts, caves, mines, buildings.
Myotis californicus	California myotis	BLM Sensitive	Moderate potential to occur. Common, may forage within the Project area.	Semiarid deserts and grasslands, forests, coastal forests, and montane forests.
Myotis thysanodes	Fringed myotis	NNHP, BLM Sensitive	Low potential to occur. Reliance on cave roosts.	Low desert scrub to high elevation coniferous forests.
Myotis velifer	Cave myotis	BLM Sensitive	Low potential to occur. Rare.	Cave dwelling; will roost in rock or wall crevices, old buildings, and under bridges.

Scientific Name	Common Name	Status	Potential to Occur in Project Area	Habitat
Nyctinomops macrotis	Big free-tailed bat	BLM Sensitive	Low potential to occur. Rare.	Inhabits rocky terrain, roosts in rocky cliffs in weathered rock fissures and crevices. Also roost in buildings and plants including pines and desert shrubs.
Pipistrellus hesperus	Western pipistrelle	BLM Sensitive	Moderate potential to occur. Common.	Desert habitats of blackbrush, creosotebush, salt desert shrub, and sagebrush.
Tadarida brasiliensis	Brazilian free-tailed bat	NNHP, BLM Sensitive	Moderate potential to occur. Abundant species in southern Nevada.	Roosts in caves, manmade structures. Found from low desert to high mountains.
Vulpes macrotis	Desert kit fox	NNHP, BLM Sensitive	Moderate potential to occur. Suitable habitat is present.	Widely distributed throughout the arid southwest and can be found in a variety of habitat types. Kit foxes rely on dens throughout the year for rest sites, shelter against harsh weather, as bearing and rearing locations for young, and as an escape from predators. They can dig their own dens but will often enlarge existing dens that were made by badgers or rodents. Also known to use exposed/protected pipes or smaller culverts which provide protection from predators, harsh conditions, and temporary and maternal dens.
Reptiles				
Heloderma suspectum cinctum	Gila monster	NNHP, BLM Sensitive, MSHCP	Moderate potential to occur. Suitable habitat is present.	Occurs in Clark, Lincoln, and Nye counties in Nevada. Found mainly below 5,000 feet, its geographic range approximates that of the desert tortoise and is coincident to the Colorado River drainage. Occurs in desert wash, spring, and riparian habitats that inter-digitate primarily with complex rocky landscapes of upland desert scrub. They will use and are occasionally encountered out in gentler terrain of alluvial fans (bajadas). Gila monsters are secretive and difficult to locate, spending greater than 95 percent of their lives underground.
Dipsosaurus dorsalis	Desert iguana	NNHP, BLM Sensitive	Moderate potential to occur. Suitable habitat is present.	Inhabits creosotebush scrub from below sea level to 3,300 feet. It prefers hummocks of loose sand and patches of firm ground with scattered rocks, as well as desert washes.

Scientific Name	Common Name	Status	Potential to Occur in Project Area	Habitat
Plants				
Arctomecon merriamii	White bear poppy	NNHP, BLM Sensitive	Low potential to occur based on habitat models (Hamilton and Kokos 2011).	An evergreen perennial herb that blooms from April through July. Found in Nevada from Clark, Nye, and Lincoln counties on a wide variety of dry to sometimes moist basic soils, including alkaline clay and sand, gypsum, calcareous alluvial gravels, and carbonate rock outcrops in chenopod scrub and rocky Mojave Desert communities from 1,600 to 6,280 feet. Suitable habitat for this species is limited to the badland soil types.
Astragalus geveri var. triquetrus	Three corner milkvetch	NNHP, BLM Sensitive	Low potential to occur based on habitat models (Hamilton and Kokos 2011). Deep sandy soil or dunes are not present.	Short, spindly, but upright annual forb with pinnately divided leaves. Requires open, deep sandy soil or dunes, generally stabilized by vegetation and/or a gravel veneer and is dependent on sand dunes or deep sand in Nevada.
Astragalus nyensis	Nye milkvetch	NNHP	Moderate potential to occur. Suitable habitat is present.	Found in the foothills of desert mountains, calcareous outwash fans and gravelly flats, and sometimes in sandy soil. Associated plants are creosotebush, white bursage, and cheesebush.
Eriogonum corymbosum var. nilesii	Las Vegas buckwheat	NNHP, BLM Sensitive	Low potential to occur. Nearest potentially suitable habitat based off Hamilton 2019 models is 0.6 mile south of the SBSPs.	Found in sandy substrates comprised mainly of gypsum. In 2008, the USFWS considered protecting the Las Vegas buckwheat under the ESA but determined it does not warrant protection. GIS models to understand distribution of plant and suitable habitat (gypsiferous soils) were developed (Hamilton and Kokos 2011; Hamilton 2019).
Eriogonum viscidulum	Sticky buckwheat	NNHP, BLM Sensitive	Low potential to occur within the Project area. No suitable habitat.	A tall, erect, and spreading annual, 1.6 to 13.1 feet (0.5 to 4 meters) high and minutely viscid. Leaves are basal with leaf blades being elliptic to broadly ovate. This buckwheat is found in Clark and Lincoln counties, Nevada and northwestern Arizona (NNHP 2001). Populations occur along the Muddy River from Weiser Wash to its confluence with the Virgin River and within the Virgin River drainage. This species overlaps with three-corner milkvetch over much of its range. Requires sandy soil or dunes.

Scientific Name	Common Name	Status	Potential to Occur in Project Area	Habitat
Pediomelum castoreum	Beaver Dam breadroot	NNHP, BLM Sensitive	Low potential to occur based on habitat models (Hamilton and Kokos 2011).	Beaver Dam breadroot has been recorded in Nevada at elevations from 1,280 to 5,000 feet and is found in sand or sandy gravel in open areas and along roadsides (NNHP 2001).
Penstemon bicolor ssp. Roseus	Rosy two-tone beardtongue	NNHP, BLM Sensitive	Moderate potential to occur. Suitable habitat is present.	Perennial herb known in Nevada from Clark and Nye counties. Found on rocky, calcareous, granitic, or volcanic soils in washes, roadsides, scree at outcrop bases, rock crevices, or similar places receiving enhanced runoff in creosote-bursage, blackbrush, mixed-shrub, Joshua tree woodland, and Mojave Desert communities from 1,800 to 4,084 feet.
Yucca schidigera	Mojave yucca	NAC 527	High potential to occur within the Project area. Common in the area.	Common in creosote desert flats. Provides browse for several wildlife species during spring, summer, and fall. Flower stalks and foliage are palatable to rodents and some wild ungulates during much of the year (USDA 2020) and it provides shelter and shade for many mammals, birds, and reptiles. There is an obligate, mutualistic relationship between the Mojave yucca and the small white yucca moth (*Tegeticula yuccasella*).

Abbreviations: BCC = BGEPA = Bald and Golden Eagle Protection Act; BLM = Bureau of Land Management; ESA = Endangered Species Act; MSHCP = Multiple Species Habitat Conservation Plan ; NAC 527 = Nevada Administrative Code 527, Protection and Preservation of Timbered Lands, Trees, and Flora; NNHP = Nevada Natural Heritage Program; USDA = U.S. Department of Agriculture Forest Service

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U.S. Department of Agriculture (USDA) Forest Service. 2020. "Fire Effects Information System." Accessed October 2020 at: https://www.fs.fed.us/database/feis/plants/shrub/yucsch/all.html.

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Appendix L

Cultural Consultation Letters

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United States Department of the Interior
BUREAU OF INDIAN AFFAIRS
Western Regional Office
2600 North Central Avenue
Phoenix, Arizona 85004-3008

IN REPLY REFER TO:
Environmental Quality Services
MS620-EQS

Honorable Tamra Borchardt-Slayton
Chairwoman, Paiute Indian Tribe of Utah
440 North Paiute Drive
Cedar City, Utah 84720-2613

Dear Chairwoman Borchardt-Slayton:

As Agency Official for purposes of Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA), the Western Regional Office of the Bureau of Indian Affairs (BIA) wishes to consult with the Paiute Indian Tribe of Utah (PITU) about the proposed project: **approval of two leases and concomitant rights-of-way (ROWs) for the Southern Bighorn Solar Project (Project No. 2019-124)**, on the Moapa River Indian Reservation. The undertaking can be characterized as the construction of a 400-megawatt solar photovoltaic electricity generation facility on the Moapa River Indian Reservation. The ground lease for the solar facility would encumber up to 6,308 acres on land of the Moapa Band of Paiute Indians. The proposed undertaking would require right-of-way approval by the Bureau of Land Management (BLM) for an associated transmission line and access road.

The BIA is serving as Lead Federal Agency as described at 36 CFR 800.2(a)(2) for the project. Consulting parties identified to date for this undertaking include the Moapa Band of Paiute Indians, Nevada State Historic Preservation Office, 8minute Solar Energy (project proponent), BLM Las Vegas Field Office, and the National Park Service (NPS). A cultural resource inventory report will be prepared for the proposed area of potential effects (APE).

Following provisions of the NHPA, we are seeking counsel with your office regarding the proposed undertaking to identify any concerns about historic properties; advice on our identification efforts and evaluation of historic properties; articulate views on the undertaking's effects; and participate in the resolution of any adverse effects. We specifically are asking to be advised if your community attaches religious and cultural significance to any historic properties in the APE.

We look forward to your views on this project and other efforts we may employ to satisfy our responsibilities as prescribed by the NHPA.

If there are any questions, please contact Mr. Garry J. Cantley, Regional Archeologist, at (602) 379-6750 extension 1256 or by email at Garry.Cantley@bia.gov.

Sincerely,

RODNEY MCVEY

Digitally signed by RODNEY MCVEY
Date: 2020.06.12 11:56:17 -07'00'

Rodney McVey
Deputy Regional Director - Trust Services

Enclosures

cc: Superintendent, Southern Paiute Agency
Attn: Environmental Coordinator
Chairman, Moapa Business Council
Chairperson, Moapa Cultural Committee
Cultural Resources Director, PITU (w/enc)
Field Manager, Las Vegas Field Office, BLM
Cultural Resource Specialist, Nat'l Trails System-Intermtn. Reg., NPS
Manager, Siting & Permitting, 8minute Solar Energy
Regional Realty Officer, WRO

United States Department of the Interior
BUREAU OF INDIAN AFFAIRS
Western Regional Office
2600 North Central Avenue
Phoenix, Arizona 85004-3008

IN REPLY REFER TO:
Environmental Quality Services
MS620-EQS

Honorable Curtis Anderson
Chairman, Las Vegas Band of Paiute Indians
One Paiute Drive
Las Vegas, Nevada 89106

Dear Chairman Anderson:

As Agency Official for purposes of Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA), the Western Regional Office of the Bureau of Indian Affairs (BIA) wishes to consult with the Las Vegas Band of Paiute Indians about the proposed project: **approval of two leases and concomitant rights-of-way (ROWs) for the Southern Bighorn Solar Project (Project No. 2019-124)**, on the Moapa River Indian Reservation. The undertaking can be characterized as the construction of a 400-megawatt solar photovoltaic electricity generation facility on the Moapa River Indian Reservation. The ground lease for the solar facility would encumber up to 6,308 acres on land of the Moapa Band of Paiute Indians. The proposed undertaking would require right-of-way approval by the Bureau of Land Management (BLM) for an associated transmission line and access road.

The BIA is serving as Lead Federal Agency as described at 36 CFR 800.2(a)(2) for the project. Consulting parties identified to date for this undertaking include the Moapa Band of Paiute Indians, Nevada State Historic Preservation Office, 8minute Solar Energy (project proponent), BLM Las Vegas Field Office, and the National Park Service (NPS). A cultural resource inventory report will be prepared for the proposed area of potential effects (APE).

Following provisions of the NHPA, we are seeking counsel with your office regarding the proposed undertaking to identify any concerns about historic properties; advice on our identification efforts and evaluation of historic properties; articulate views on the undertaking's effects; and participate in the resolution of any adverse effects. We specifically are asking to be advised if your community attaches religious and cultural significance to any historic properties in the APE.

We look forward to your views on this project and other efforts we may employ to satisfy our responsibilities as prescribed by the NHPA.

If there are any questions, please contact Mr. Garry J. Cantley, Regional Archeologist, at (602) 379-6750 extension 1256 or by email at Garry.Cantley@bia.gov.

Sincerely,

RODNEY MCVEY

Digitally signed by RODNEY MCVEY
Date: 2020.06.12 11:52:52 -07'00'

Rodney McVey
Deputy Regional Director - Trust Services

Enclosures

cc: Superintendent, Southern Paiute Agency
Attn: Environmental Coordinator
Chairman, Moapa Business Council
Chairperson, Moapa Cultural Committee
Field Manager, Las Vegas Field Office, BLM
Cultural Resource Specialist, Nat'l Trails System-Intermt. Reg., NPS
Manager, Siting & Permitting, 8minute Solar Energy
Regional Realty Officer, WRO

United States Department of the Interior
BUREAU OF INDIAN AFFAIRS
Western Regional Office
2600 North Central Avenue
Phoenix, Arizona 85004-3008

IN REPLY REFER TO:
Environmental Quality Services
MS620-EQS

Honorable Damon R. Clarke
Chairman, Hualapai Tribe
P.O. Box 179
Peach Springs, Arizona 86434

Dear Chairman Clarke:

As Agency Official for purposes of Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA), the Western Regional Office of the Bureau of Indian Affairs (BIA) wishes to consult with the Hualapai Tribe about the proposed project: **approval of two leases and concomitant rights-of-way (ROWs) for the Southern Bighorn Solar Project (Project No. 2019-124**), on the Moapa River Indian Reservation. The undertaking can be characterized as the construction of a 400-megawatt solar photovoltaic electricity generation facility on the Moapa River Indian Reservation. The ground lease for the solar facility would encumber up to 6,308 acres on land of the Moapa Band of Paiute Indians. The proposed undertaking would require right-of-way approval by the Bureau of Land Management (BLM) for an associated transmission line and access road.

The BIA is serving as Lead Federal Agency as described at 36 CFR 800.2(a)(2) for the project. Consulting parties identified to date for this undertaking include the Moapa Band of Paiute Indians, Nevada State Historic Preservation Office, 8minute Solar Energy (project proponent), BLM Las Vegas Field Office, and the National Park Service (NPS). A cultural resource inventory report will be prepared for the proposed area of potential effects (APE).

Following provisions of the NHPA, we are seeking counsel with your office regarding the proposed undertaking to identify any concerns about historic properties; advice on our identification efforts and evaluation of historic properties; articulate views on the undertaking's effects; and participate in the resolution of any adverse effects. We specifically are asking to be advised if your community attaches religious and cultural significance to any historic properties in the APE.

We look forward to your views on this project and other efforts we may employ to satisfy our responsibilities as prescribed by the NHPA.

If there are any questions, please contact Mr. Garry J. Cantley, Regional Archeologist, at (602) 379-6750 extension 1256 or by email at Garry.Cantley@bia.gov.

Sincerely,

RODNEY MCVEY

Digitally signed by RODNEY MCVEY
Date: 2020.06.12 11:49:31 -07'00'

Rodney McVey
Deputy Regional Director - Trust Services

Enclosures

cc: Superintendent, Southern Paiute Agency
Attn: Environmental Coordinator
Chairman, Moapa Business Council
Chairperson, Moapa Cultural Committee
Tribal Historic Preservation Officer, Hualapai Tribe (w/enc)
Field Manager, Las Vegas Field Office, BLM
Cultural Resource Specialist, Nat'l Trails System-Intermtn. Reg., NPS
Manager, Siting & Permitting, 8minute Solar Energy
Regional Realty Officer, WRO

United States Department of the Interior
BUREAU OF INDIAN AFFAIRS
Western Regional Office
2600 North Central Avenue
Phoenix, Arizona 85004-3008

IN REPLY REFER TO:
Environmental Quality Services
MS620-EQS

Honorable Timothy L. Nuvangyaoma
Chairman, Hopi Tribe
P.O. Box 123
Kykotsmovi, Arizona 86039

Dear Chairman Nuvangyaoma:

As Agency Official for purposes of Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA), the Western Regional Office of the Bureau of Indian Affairs (BIA) wishes to consult with the Hopi Tribe about the proposed project: **approval of two leases and concomitant rights-of-way (ROWs) for the Southern Bighorn Solar Project (Project No. 2019-124)**, on the Moapa River Indian Reservation. The undertaking can be characterized as the construction of a 400-megawatt solar photovoltaic electricity generation facility on the Moapa River Indian Reservation. The ground lease for the solar facility would encumber up to 6,308 acres on land of the Moapa Band of Paiute Indians. The proposed undertaking would require right-of-way approval by the Bureau of Land Management (BLM) for an associated transmission line and access road.

The BIA is serving as Lead Federal Agency as described at 36 CFR 800.2(a)(2) for the project. Consulting parties identified to date for this undertaking include the Moapa Band of Paiute Indians, Nevada State Historic Preservation Office, 8minute Solar Energy (project proponent), BLM Las Vegas Field Office, and the National Park Service (NPS). A cultural resource inventory report will be prepared for the proposed area of potential effects (APE).

Following provisions of the NHPA, we are seeking counsel with your office regarding the proposed undertaking to identify any concerns about historic properties; advice on our identification efforts and evaluation of historic properties; articulate views on the undertaking's effects; and participate in the resolution of any adverse effects. We specifically are asking to be advised if your community attaches religious and cultural significance to any historic properties in the APE.

We look forward to your views on this project and other efforts we may employ to satisfy our responsibilities as prescribed by the NHPA.

If there are any questions, please contact Mr. Garry J. Cantley, Regional Archeologist, at (602) 379-6750 extension 1256 or by email at Garry.Cantley@bia.gov.

Sincerely,

RODNEY MCVEY

Digitally signed by RODNEY MCVEY
Date: 2020.06.12 11:57:51 -07'00'

Rodney McVey
Deputy Regional Director - Trust Services

Enclosures

cc: Superintendent, Southern Paiute Agency
Attn: Environmental Coordinator
Chairman, Moapa Business Council
Chairperson, Moapa Cultural Committee
Tribal Historic Preservation Officer, Hopi Tribe (w/enc)
Field Manager, Las Vegas Field Office, BLM
Cultural Resource Specialist, Nat'l Trails System-Intermtn. Reg., NPS
Manager, Siting & Permitting, 8minute Solar Energy
Regional Realty Officer, WRO

United States Department of the Interior
BUREAU OF INDIAN AFFAIRS
Western Regional Office
2600 North Central Avenue
Phoenix, Arizona 85004-3008

IN REPLY REFER TO:
Environmental Quality Services
MS620-EQS

Honorable Timothy Williams
Fort Mojave Indian Tribe
500 Merriman Avenue
Needles, California 92363

Dear Chairman Williams:

As Agency Official for purposes of Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA), the Western Regional Office of the Bureau of Indian Affairs (BIA) wishes to consult with the Fort Mojave Indian Tribe about the proposed project: **approval of two leases and concomitant rights-of-way (ROWs) for the Southern Bighorn Solar Project (Project No. 2019-124)**, on the Moapa River Indian Reservation. The undertaking can be characterized as the construction of a 400-megawatt solar photovoltaic electricity generation facility on the Moapa River Indian Reservation. The ground lease for the solar facility would encumber up to 6,308 acres on land of the Moapa Band of Paiute Indians. The proposed undertaking would require right-of-way approval by the Bureau of Land Management (BLM) for an associated transmission line and access road.

The BIA is serving as Lead Federal Agency as described at 36 CFR 800.2(a)(2) for the project. Consulting parties identified to date for this undertaking include the Moapa Band of Paiute Indians, Nevada State Historic Preservation Office, 8minute Solar Energy (project proponent), BLM Las Vegas Field Office, and the National Park Service (NPS). A cultural resource inventory report will be prepared for the proposed area of potential effects (APE).

Following provisions of the NHPA, we are seeking counsel with your office regarding the proposed undertaking to identify any concerns about historic properties; advice on our identification efforts and evaluation of historic properties; articulate views on the undertaking's effects; and participate in the resolution of any adverse effects. We specifically are asking to be advised if your community attaches religious and cultural significance to any historic properties in the APE.

We look forward to your views on this project and other efforts we may employ to satisfy our responsibilities as prescribed by the NHPA.

If there are any questions, please contact Mr. Garry J. Cantley, Regional Archeologist, at (602) 379-6750 extension 1256 or by email at Garry.Cantley@bia.gov.

Sincerely,

RODNEY MCVEY

Digitally signed by RODNEY MCVEY
Date: 2020.06.12 11:47:42 -07'00'

Rodney McVey
Deputy Regional Director - Trust Services

Enclosures

cc: Superintendent, Southern Paiute Agency
Attn: Environmental Coordinator
Chairman, Moapa Business Council
Chairperson, Moapa Cultural Committee
Director, Aha Makav Cultural Society (w/enc)
Field Manager, Las Vegas Field Office, BLM
Cultural Resource Specialist, Nat'l Trails System-Intermtn. Reg., NPS
Manager, Siting & Permitting, 8minute Solar Energy
Regional Realty Officer, WRO

United States Department of the Interior
BUREAU OF INDIAN AFFAIRS
Western Regional Office
2600 North Central Avenue
Phoenix, Arizona 85004-3008

IN REPLY REFER TO:
Environmental Quality Services
MS620-EQS

Honorable Dennis Patch
Chairman, Colorado River Indian Tribes
26600 Mohave Road
Parker, Arizona 85344-7737

Dear Chairman Patch:

As Agency Official for purposes of Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA), the Western Regional Office of the Bureau of Indian Affairs (BIA) wishes to consult with the Colorado River Indian Tribes (CRIT) about the proposed project: **approval of two leases and concomitant rights-of-way (ROWs) for the Southern Bighorn Solar Project (Project No. 2019-124)**, on the Moapa River Indian Reservation. The undertaking can be characterized as the construction of a 400-megawatt solar photovoltaic electricity generation facility on the Moapa River Indian Reservation. The ground lease for the solar facility would encumber up to 6,308 acres on land of the Moapa Band of Paiute Indians. The proposed undertaking would require right-of-way approval by the Bureau of Land Management (BLM) for an associated transmission line and access road.

The BIA is serving as Lead Federal Agency as described at 36 CFR 800.2(a)(2) for the project. Consulting parties identified to date for this undertaking include the Moapa Band of Paiute Indians, Nevada State Historic Preservation Office, 8minute Solar Energy (project proponent), BLM Las Vegas Field Office, and the National Park Service (NPS). A cultural resource inventory report will be prepared for the proposed area of potential effects (APE).

Following provisions of the NHPA, we are seeking counsel with your office regarding the proposed undertaking to identify any concerns about historic properties; advice on our identification efforts and evaluation of historic properties; articulate views on the undertaking's effects; and participate in the resolution of any adverse effects. We specifically are asking to be advised if your community attaches religious and cultural significance to any historic properties in the APE.

We look forward to your views on this project and other efforts we may employ to satisfy our responsibilities as prescribed by the NHPA.

If there are any questions, please contact Mr. Garry J. Cantley, Regional Archeologist, at (602) 379-6750 extension 1256 or by email at Garry.Cantley@bia.gov.

Sincerely,

RODNEY MCVEY

Digitally signed by RODNEY MCVEY
Date: 2020.06.12 11:46:15 -07'00'

Rodney McVey
Deputy Regional Director - Trust Services

Enclosures

cc: Superintendent, Southern Paiute Agency
Attn: Environmental Coordinator
Chairman, Moapa Business Council
Chairperson, Moapa Cultural Committee
Tribal Historic Preservation Officer, CRIT (w/enc)
Field Manager, Las Vegas Field Office, BLM
Cultural Resource Specialist, Nat'l Trails System-Intermtn. Reg., NPS
Manager, Siting & Permitting, 8minute Solar Energy
Regional Realty Officer, WRO

United States Department of the Interior
BUREAU OF INDIAN AFFAIRS
Western Regional Office
2600 North Central Avenue
Phoenix, Arizona 85004-3008

IN REPLY REFER TO:
Environmental Quality Services
MS620-EQS

Honorable Charles F. Wood
Chairman, Chemehuevi Tribal Council
P.O. Box 1976
Havasu Lake, California 92363

Dear Chairman Wood:

As Agency Official for purposes of Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA), the Western Regional Office of the Bureau of Indian Affairs (BIA) wishes to consult with the Chemehuevi Indian Tribe about the proposed project: **approval of two leases and concomitant rights-of-way (ROWs) for the Southern Bighorn Solar Project (Project No. 2019-124)**, on the Moapa River Indian Reservation. The undertaking can be characterized as the construction of a 400-megawatt solar photovoltaic electricity generation facility on the Moapa River Indian Reservation. The ground lease for the solar facility would encumber up to 6,308 acres on land of the Moapa Band of Paiute Indians. The proposed undertaking would require right-of-way approval by the Bureau of Land Management (BLM) for an associated transmission line and access road.

The BIA is serving as Lead Federal Agency as described at 36 CFR 800.2(a)(2) for the project. Consulting parties identified to date for this undertaking include the Moapa Band of Paiute Indians, Nevada State Historic Preservation Office, 8minute Solar Energy (project proponent), BLM Las Vegas Field Office, and the National Park Service (NPS). A cultural resource inventory report will be prepared for the proposed area of potential effects (APE).

Following provisions of the NHPA, we are seeking counsel with your office regarding the proposed undertaking to identify any concerns about historic properties; advice on our identification efforts and evaluation of historic properties; articulate views on the undertaking's effects; and participate in the resolution of any adverse effects. We specifically are asking to be advised if your community attaches religious and cultural significance to any historic properties in the APE.

We look forward to your views on this project and other efforts we may employ to satisfy our responsibilities as prescribed by the NHPA.

If there are any questions, please contact Mr. Garry J. Cantley, Regional Archeologist, at (602) 379-6750 extension 1256 or by email at Garry.Cantley@bia.gov.

Sincerely,

RODNEY MCVEY

Digitally signed by RODNEY MCVEY
Date: 2020.06.12 11:41:44 -07'00'

Rodney McVey
Deputy Regional Director - Trust Services

Enclosures

cc: Superintendent, Southern Paiute Agency (w/enc)
Attn: Environmental Coordinator
Chairman, Moapa Business Council (w/enc)
Chairperson, Moapa Cultural Committee (w/enc)
Director, Cultural Center, Chemehuevi Indian Tribe (w/enc)
Field Manager, Las Vegas Field Office, BLM (w/enc)
Cultural Resource Specialist, Nat'l Trails System-Intermtn. Reg., NPS (w/enc)
Manager, Siting & Permitting, 8minute Solar Energy (w/enc)
Regional Realty Officer, WRO (w/enc)

United States Department of the Interior
BUREAU OF INDIAN AFFAIRS
Western Regional Office
2600 North Central Avenue
Phoenix, Arizona 85004-3008

IN REPLY REFER TO:
Environmental Quality Services
MS620-EQS

Honorable Ona Segundo
Chairwoman, Kaibab Band of Paiute Indians
HC 65, Box 2
Fredonia, Arizona 86022

Dear Chairwoman Segundo:

As Agency Official for purposes of Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA), the Western Regional Office of the Bureau of Indian Affairs (BIA) wishes to consult with the Kaibab Band of Paiute Indians about the proposed project: **approval of two leases and concomitant rights-of-way (ROWs) for the Southern Bighorn Solar Project (Project No. 2019-124)**, on the Moapa River Indian Reservation. The undertaking can be characterized as the construction of a 400-megawatt solar photovoltaic electricity generation facility on the Moapa River Indian Reservation. The ground lease for the solar facility would encumber up to 6,308 acres on land of the Moapa Band of Paiute Indians. The proposed undertaking would require right-of-way approval by the Bureau of Land Management (BLM) for an associated transmission line and access road.

The BIA is serving as Lead Federal Agency as described at 36 CFR 800.2(a)(2) for the project. Consulting parties identified to date for this undertaking include the Moapa Band of Paiute Indians, Nevada State Historic Preservation Office, 8minute Solar Energy (project proponent), BLM Las Vegas Field Office, and the National Park Service (NPS). A cultural resource inventory report will be prepared for the proposed area of potential effects (APE).

Following provisions of the NHPA, we are seeking counsel with your office regarding the proposed undertaking to identify any concerns about historic properties; advice on our identification efforts and evaluation of historic properties; articulate views on the undertaking's effects; and participate in the resolution of any adverse effects. We specifically are asking to be advised if your community attaches religious and cultural significance to any historic properties in the APE.

We look forward to your views on this project and other efforts we may employ to satisfy our responsibilities as prescribed by the NHPA.

If there are any questions, please contact Mr. Garry J. Cantley, Regional Archeologist, at (602) 379-6750 extension 1256 or by email at Garry.Cantley@bia.gov.

Sincerely,

RODNEY MCVEY

Digitally signed by RODNEY MCVEY
Date: 2020.06.12 11:51:05 -07'00'

Rodney McVey
Deputy Regional Director - Trust Services

Enclosures

cc: Superintendent, Southern Paiute Agency
Attn: Environmental Coordinator
Chairman, Moapa Business Council
Chairperson, Moapa Cultural Committee
Director, Cultural Resources, Kaibab Band of Paiute Indians (w/enc)
Field Manager, Las Vegas Field Office, BLM
Cultural Resource Specialist, Nat'l Trails System-Intermtn. Reg., NPS
Manager, Siting & Permitting, 8minute Solar Energy
Regional Realty Officer, WRO

United States Department of the Interior
BUREAU OF INDIAN AFFAIRS
Western Regional Office
2600 North Central Avenue
Phoenix, Arizona 85004-3008

IN REPLY REFER TO:
Environmental Quality Services
MS620-EQS

Honorable Paul Ostapuk
President, Old Spanish Trail Association
P.O. Box 3532
Page, Arizona 86040

Dear President Ostapuk:

As Agency Official for purposes of Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA), the Western Regional Office of the Bureau of Indian Affairs (BIA) wishes to consult with the Old Spanish Trail Association (OSTA) about the proposed project: **approval of two leases and concomitant rights-of-way (ROWs) for the Southern Bighorn Solar Project (Project No. 2019-124)**, on the Moapa River Indian Reservation. The undertaking can be characterized as the construction of a 400-megawatt solar photovoltaic electricity generation facility on the Moapa River Indian Reservation. The ground lease for the solar facility would encumber up to 6,308 acres on land of the Moapa Band of Paiute Indians. The proposed undertaking would require right-of-way approval by the Bureau of Land Management (BLM) for an associated transmission line and access road.

The BIA is serving as Lead Federal Agency as described at 36 CFR 800.2(a)(2) for the project. Consulting parties identified to date for this undertaking include the Moapa Band of Paiute Indians, Nevada State Historic Preservation Office, 8minute Solar Energy (project proponent), BLM Las Vegas Field Office, and the National Park Service (NPS). A cultural resource inventory report will be prepared for the proposed area of potential effects (APE).

Following provisions of the NHPA, we are seeking counsel with your office regarding the proposed undertaking to identify any concerns about historic properties; advice on our identification efforts and evaluation of historic properties; articulate views on the undertaking's effects; and participate in the resolution of any adverse effects. We specifically are asking to be advised if your community attaches religious and cultural significance to any historic properties in the APE.

We look forward to your views on this project and other efforts we may employ to satisfy our responsibilities as prescribed by the NHPA.

If there are any questions, please contact Mr. Garry J. Cantley, Regional Archeologist, at (602) 379-6750 extension 1256 or by email at Garry.Cantley@bia.gov.

Sincerely,

RODNEY MCVEY

Digitally signed by RODNEY MCVEY
Date: 2020.06.12 11:54:33 -07'00'

Rodney McVey
Deputy Regional Director - Trust Services

Enclosures

cc: Superintendent, Southern Paiute Agency
Attn: Environmental Coordinator
Chairman, Moapa Business Council
Chairperson, Moapa Cultural Committee
Executive Director, Old Spanish Trail Association (w/enc)
Field Manager, Las Vegas Field Office, BLM
Cultural Resource Specialist, Nat'l Trails System-Intertn. Reg., NPS
Manager, Siting & Permitting, 8minute Solar Energy
Regional Realty Officer, WRO

June 26, 2020

Environmental Quality Services MS-620 EQS

Attn: Rodney McVey
Deputy Regional Director-Trust Services
Bureau of Indian Affairs
Western Regional Office
2600 North Central Avenue
Phoenix, Arizona 85004-3008

Garry J. Cantley
Regional Archeologist
Bureau of Indian Affairs
Western Regional Office
2600 North Central Avenue
Phoenix, Arizona 85004-3008
Garry.Cantley@bia.gov

Subject: Environmental Quality Services MS-620 EQS – Proposed Arrow Canyon and Southern Bighorn Solar Projects

Dear Mr. McVey and Mr Cantley,

This letter confirms the interest of the Old Spanish Trail Association (OSTA)[1] as a consulting party regarding the proposed approval of a lease for the Arrow Canyon Solar Project (Project No. 2019-109), and approval of two leases and concomitant rights-of-way (ROWs) for the Southern Bighorn Solar Project (Project No. 2019-124). Both of these projects are on the Moapa River Indian Reservation.

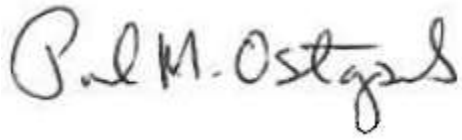
OSTA is an organization directly involved in management of the Old Spanish National Historic Trail (OSNHT) and associated cultural resources. These projects have the potential to impact this national trail corridor. Adverse impacts will need to be addressed and mitigated, as applicable.

We wish to emphasize that federal review of these projects mandate review of the National Historic Trails Act of 1968. The NTSA provisions are important considerations in addition to Section 106 of the National Historic Preservation Act (NHPA). To the greatest extent possible, our organization expects the BIA to manage the OSNHT so as to safeguard the nature and purposes of trail resources and in a manner that protects the values for which the components of the National Trail System Act were designated. This

includes recognizing the nationally significant scenic, historic, cultural, recreation, natural, and other landscape values inherent with the OSNHT trail corridor.

Should these projects gain agency approval, our organization would like to see the stakeholders provide funds for development of interpretive media products that could highlight the cultural significance of historic trails from a native American perspective and in particular give voice to the Moapa River community in this regard. These shared perspectives are important aspects of our national heritage and our organization would be interested in collaborating with others to accomplish this effort.

Thank you for contacting our organization. As the process moves forward, we look forward to contributing as a consulting party to these two proposed solar projects



Paul Ostapuk
President
Old Spanish Trail Association
postapuk@gmail.com
928.614.9655

[1]OSTA is a 501 (c) 3 organization whose mission is to study, preserve and protect, interpret and educate, and promote respectful use of the Old Spanish Trail (OST), the Old Spanish National Historic Trail (OSNHT) and closely related historic routes. OSTA is the designated volunteer organization for the OSNHT, recognized by both the National Park Service and BLM, under Section 11 of The National Trails System Act (NTSA) of 1968, as amended [16 USC 1250].

NEVADA
STATE HISTORIC PRESERVATION OFFICE

Department of Conservation and Natural Resources

Steve Sisolak, Governor
Bradley Crowell, Director
Rebecca L. Palmer, Administrator, SHPO

July 1, 2020

Rodney McVey
Deputy Regional Director – Trust Services
Bureau of Indian Affairs
Western Regional Office
2600 North Central Avenue
Phoenix, Arizona 85004-3008

Re: Southern Bighorn Solar Projects I and II on the Moapa River Indian Reservation, Clark County, Nevada (BIA Project # 2020-124/Environmental Quality Services/MS620-EQS)
UT 2020-6377

Dear Mr. McVey:

The Nevada State Historic Preservation Office (SHPO) has reviewed the subject documents received June 2, 2020 (electronic submission), June 15, 2020 (hard copy submission), and June 30, 2020 in accordance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended.

Area of Potential Effect (APE)
The Bureau of Indian Affairs (BIA) is considering a direct physical APE of 3,600 acres, within a 6,300-acre lease option and area for study/inventory for this undertaking.

Furthermore, the BIA is considering a visual APE of a 5-mile buffer or to the visual horizon, whichever is closer, around the direct physical APE. The proposed 5-mile buffer is based upon the results of the visual analyses completed for the Aiya Solar (UT #2015-3616) and the Eagle Shadow Mountain Solar (UT#2019-5682) projects, which are within the same geographic area as the current undertaking. This undertaking also proposes to use some of the existing infrastructure built for the Eagle Shadow Mountain Solar project.

The SHPO agrees with the BIA that the APE under consideration for the Bighorn Solar Project I and II is in keeping with 36 CFR §800.4(a)(1) and 36 CFR §800.16(d).

The SHPO looks forward to receipt of a formal BIA determination establishing the APE for this undertaking pursuant to 36 CFR §800.4(a)(1) and 36 CFR §800.16(d). The SHPO assumes that this determination will include documentation in support of the established APE similar to the documentation (e.g., project layout plans and visual analysis report with photo-documentation)

that the SHPO received for the Aiya Solar (UT #2015-3616) and the Eagle Shadow Mountain Solar (UT#2019-5682) projects.

Native American Consultation
The SHPO notes that consultation with the affected Native American tribes has been initiated per 36 CFR §800.2(c)(2)(i)(B). If this consultation results in the identification of properties of religious and/or cultural significance that could be affected by the undertaking, the SHPO looks forward to consulting with the BIA on the National Register eligibility and possible effects of the undertaking on these historic properties per 36 CFR §800.4(c) and 36 CFR §800.4(d). In order to maintain a complete and accurate record of consultation, please forward a brief narrative summary of the results of this consultation to our office so this may be added to the administrative record for this undertaking.

Consulting Parties and Public Consultation
The SHPO notes that consultation with the public and representatives of organizations that have a demonstrated interest in historic properties (e.g., the Old Spanish Trail Association [OSTA] and the National Park Service -Intermountain Trails Office [NPS]) has been initiated in keeping with 36 CFR Part §800.2(c)(5). If this consultation results in the identification of historic properties that could be affected by the undertaking, the SHPO looks forward to consulting with the BIA concerning the National Register eligibility and possible effects of the undertaking on these historic properties. In order to maintain a complete and accurate record of consultation, please forward a brief narrative summary of the results of this consultation to our office so this may be added to the administrative record for this undertaking.

Should you have any questions concerning this correspondence, please contact Jessica Axsom at (775) 684-3445 or by e-mail at jaxsom@shpo.nv.gov.

Sincerely,

Robin K. Reed
Deputy State Historic Preservation Officer

NEVADA
STATE HISTORIC PRESERVATION OFFICE

Department of Conservation and Natural Resources

Steve Sisolak, Governor
Bradley Crowell, Director
Rebecca L. Palmer, Administrator, SHPO

October 23, 2020

Bryan Bowker
Regional Director
U.S. Department of the Interior
Bureau of Indian Affairs
Western Regional Office
2600 North Central Avenue
Phoenix, Arizona 85004-3008

Re: Southern Bighorn Solar Projects I and II on the Moapa River Indian Reservation, Clark County, NV (Project #2020-124/ Undertaking #2020-6377)

Dear Mr. Bowker:

The Nevada State Historic Preservation Office (SHPO) has reviewed the subject documents received August 24, 2020 in accordance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended.

Project Description
The SHPO understands this undertaking to be for the lease of 7,112 acres for the Southern Bighorn Solar Projects I and II with the option to develop up to 3,600 acres, including the construction of the project (e.g., 400-megawatt solar energetic generating facility and associated infrastructure), maintenance, and ultimately decommissioning of the facility.

Area of Potential Effect (APE)
The Bureau of Indian Affairs (BIA) has determined that all direct physical effects as a result of this undertaking will be contained within a 7,112-acre area.

Furthermore, the BIA has determined that the indirect (e.g., visual) APE of a 5-mile buffer or to the visual horizon, whichever is closer, around the direct physical APE. The proposed 5-mile buffer is based upon the results of the visual analyses completed for the Aiya Solar (UT #2015-3616) and the Eagle Shadow Mountain Solar (UT#2019-5682) projects, which are within the same geographic area as the current undertaking. This undertaking also proposes to use some of the existing infrastructure built for the Eagle Shadow Mountain Solar project.

However, the current submission does not include documentation in support of the established APE similar to the documentation (e.g., project layout plans) that the SHPO received for the Aiya Solar (UT #2015-3616) and the Eagle Shadow Mountain Solar (UT#2019-5682) projects. This

information was identified as necessary in the SHPO letter dated July 1, 2020. Please send this information at your earliest convenience.

Identification and Evaluation of Historic Properties

Direct Physical APE:

Approximately 7,112 acres were intensively surveyed for cultural resources. This cultural inventory resulted in the identification of cultural resources (discussed below).

Eighteen (18) individual segments of the Old Spanish National Historic Trail/Morgan Wagon Road were identified within the direct physical APE during this survey effort. The Old Spanish National Historic Trail (NPS # 01000863/26CK3536/26CK3848) is listed in the National Register of Historic Places (NRHP) under the Secretary's Significance Criteria A and D. In addition to understanding the BIA's determination that all 18 segments are non-contributing, the SHPO needs copies of the comments provided by National Park Service -Intermountain Trails Office (NPS) and Old Spanish Trail Association (OSTA). NPS and OSTA have specialized expertise and knowledge of the Old Spanish National Historic Trail/Mormon Wagon Road (26CK6115/26CK3848/26CK3536/NPS #01000863) that is critical to informing the NRHP evaluation of these 18 segments of Trail.

The SHPO **concurs** with the BIA's determination that 26CK10795 is **not eligible** for listing in the NRHP under any of the Secretary's Significance Criteria (i.e., A-D, inclusive). The site form for 26CK10795 is missing from the subject documents. Please provide a hard copy of this document at your earliest convenience.

The previously identified prehistoric artifact, 26CK4585, was **not relocated** during the current survey effort.

Indirect Effects (Visual, Auditory, and Atmospheric):

The BIA also conducted a literature search as part of its effort to identify historic properties that could be visually affected by this undertaking. The literature search included a review of records at the Nevada Cultural Resource Inventory System (NVCRIS), the Southern Nevada Archaeological Archives, historic maps, aerial photographs, General Land Office (GLO) records, and tribal consultation. This effort resulted in the identification of 197 cultural resources within this APE (See Table 2, on page 14 of the *Indirect Effects' Analysis of the Proposed Southern Bighorn Solar Project, Clark County, Nevada*, Appendix E).

- Of the 197 cultural resources identified within this APE, it was determined that 49 of these were not visible, previously determined not eligible for listing in the NRHP, or were excavated (e.g., previously mitigated).
- Of the 197 cultural resources identified within this APE, it was determined that an additional 142 resources were only eligible under the Secretary's Significance Criterion D or

the view from the historic property faced away or was blocked from viewing the undertaking. The BIA is not requesting the SHPO's concurrence on NRHP-eligibility.

- The remaining six (6) historic properties and unevaluated cultural resources had additional fieldwork to assess NRHP-eligibility and possible visual effects (discussed below).
- A member of the Moapa Band recommended adding a previously undocumented prehistoric trail and rock shelter, 26CK10796, to the list of unevaluated cultural resources within this APE.

Within the indirect APE, the Old Spanish National Historic Trail/Mormon Wagon Road (26CK6115/26CK3848/26CK3536/NPS #01000863) was relocated for this undertaking. Contributing, unevaluated, and non-contributing segments of this listed property were identified within the established indirect APE. The BIA has left these segments of the Old Spanish Trail unevaluated for NRHP-eligibility under the Secretary's Significance Criteria A and D. The BIA is treating them as eligible for listing in the NRHP for the purpose of compliance with NHPA.

The Tiffany Mill Site (26CK4348) was previously determined eligible for listing in the NRHP under the Secretary's Significance Criteria A and D.

The San Pedro, Los Angeles, and Salt Lake Railroad/Union Pacific Railroad (26CK4429/26CK5685) has been determined eligible for listing in the NRHP under the Secretary's Significance Criteria A and D. Contributing, unevaluated, and non-contributing segments of this historic property were identified within the established indirect APE. The BIA has left these segments of the railroad unevaluated for NRHP-eligibility under the Secretary's Significance Criteria A and D. The BIA is treating them as eligible for listing in the NRHP for the purpose of compliance with NHPA.

Highway 91/Arrowhead Trail/Arrowhead Highway (26CK4958/26CK4369/26CK7793) has been determined eligible for listing in the NRHP under the Secretary's Significance Criteria A and D. The only segment of this historic property that has intervisibility to the current undertaking has been subsumed by Interstate 15 (I-15). I-15 is exempt from further Section 106 consideration pursuant to the *Section 106 Exemption Regarding Effects to the Interstate Highway System* issued by the Advisory Council on Historic Preservation in 2005.

The archaeological site, 26CK5019 a Railroad Construction Camp, was previously determined eligible for listing in the NRHP under the Secretary's Significance Criteria A and D.

BIA is **deferring** a determination of NRHP-eligibility for S2160 (Relay Tower) pending additional research. BIA will treat this unevaluated cultural resource as eligible for listing in the NRHP for the purpose of compliance with NHPA.

The SHPO **concurs** with BIA's determination that 26CK10796 is **eligible** for listing in the NRHP under the Secretary's Significance Criterion D. It was determined during the field visit that the

prehistoric trail and rock shelter, 26CK10796, did not have intervisibility with the current undertaking.

Native American Consultation
The SHPO notes that consultation with the affected Native American tribes has been initiated per 36 CFR §800.2(c)(2)(i)(B). If this consultation results in the identification of properties of religious and/or cultural significance that could be affected by the undertaking, the SHPO looks forward to consulting with the BIA on the National Register eligibility and possible effects of the undertaking on these historic properties per 36 CFR §800.4(c) and 36 CFR §800.4(d). In order to maintain a complete and accurate record of consultation, please forward a brief narrative summary of the results of this consultation to our office so this may be added to the administrative record for this undertaking.

Consulting Parties and Public Consultation
The SHPO notes that consultation with the public and representatives of organizations that have a demonstrated interest in historic properties (e.g., the Old Spanish Trail Association [OSTA] and the National Park Service -Intermountain Trails Office [NPS]) has been initiated in keeping with 36 CFR Part §800.2(c)(5). If this consultation results in the identification of historic properties that could be affected by the undertaking, the SHPO looks forward to consulting with the BIA concerning the National Register eligibility and possible effects of the undertaking on these historic properties. In order to maintain a complete and accurate record of consultation, please forward a brief narrative summary of the results of this consultation to our office so this may be added to the administrative record for this undertaking.

Finding of Effect
In order to continue our review, the SHPO needs the missing APE justification documentation and copies of the comments provided by NPS and OSTA. NPS and OSTA have specialized expertise and knowledge of the Old Spanish National Historic Trail/Mormon Wagon Road (26CK6115/26CK3848/26CK3536/NPS #01000863) that is critical to informing the NRHP-eligibility determination and finding of effect for this undertaking.

The maps provided as part of the *Indirect Effects' Analysis of the Proposed Southern Bighorn Solar Project, Clark County, Nevada* (Appendix E), on pages 109-150, do not have the location of the following historic properties identified: the Old Spanish National Historic Trail/Mormon Wagon Road (26CK6115/26CK3848/26CK3536/NPS #01000863), Tiffany Mill Site (26CK4348), San Pedro, Los Angeles, and Salt Lake Railroad/Union Pacific Railroad (26CK4429/26CK5685), Highway 91/Arrowhead Trail (26CK4958/26CK4369/26CK7793), a Railroad Construction Camp (26CK5019), Relay Tower (S2160), and the prehistoric trail and rock shelter (26CK10796). Furthermore, none of the photographs/Key Observation Points (KOPs) used to document potential visual effects are identified on any of the maps in Appendix E, on pages 109-150. Without the above-noted mapping information for the cultural resources in relation to the undertaking and APE, it is not clear if the

documentation provided in support of the BIA's finding of effect is adequate. Once the SHPO is in receipt of this mapping information, additional simulations may be necessary in order to understand the effect of this undertaking on historic properties. This is dependent on the locations of the simulations that are provided.

In summary, it is not presently clear what the proximity and possible effects of this undertaking are to the historic properties and unevaluated cultural resources that have been identified by the BIA within the APE.

Finally, regarding the *Architectural Documentation of a Segment of the Former San Pedro, Los Angeles, and Salt Lake Railroad, Clark County, Nevada* report that was included with the current submission, the SHPO will offer comments on this mitigation product when the SHPO receives a separate letter from the BIA requesting our review under the *Memorandum of Agreement Among the Bureau of Indian Affairs, Western Regional Office, Moapa Band of Paiute Indians, and the Nevada Historic Preservation Officer Regarding Resolution of Adverse Effects for the Eagle Shadow Mountain Solar Project on the Moapa River Indian Reservation* (MOA), executed 2020 (UT 2019-5682). The BIA's letter is needed to clarify the administrative record for both undertakings. This review will inform how the BIA uses the document to comply with NHPA for the Southern Bighorn Solar Projects.

In order for the SHPO to continue its review of this undertaking, please submit the information requested above to the SHPO for review and comment.

Should you have any questions concerning this correspondence, please contact Jessica Axsom at (775) 684-3445 or by e-mail at jaxsom@shpo.nv.gov.

Sincerely,

Robin K. Reed
Deputy State Historic Preservation Officer

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Western Regional Office
2600 North Central Avenue
Phoenix, Arizona 85004-3008

IN REPLY REFER TO:
Environmental Quality Services
MS620-EQS

Mr. Paul Ostapuk
President, Old Spanish Trail Association
P.O. Box 3532
Page, Arizona 86040

Dear Mr. Ostapuk:

The Bureau of Indian Affairs (BIA) is in receipt of your letter dated September 21, 2020, responding to our inquiry about any concerns the Old Spanish Trail Association (OSTA) may have about the proposed undertakings: approval of leases for the Arrow Canyon Solar Project (Project No. 2019-109) and Southern Bighorn Solar Projects I and II (Project No. 2020-124), on the Moapa River Indian Reservation. We also appreciate the time you took to speak with us beforehand about the proposed project and its relation to the Old Spanish National Historic Trail (Trail).

As thoroughly documented and analyzed in the Draft Environmental Impact Statements prepared for each project, we conclude that the projects will not cause any impact to the Trail. Both distance and intervening topography factor into this conclusion. We have consulted with the National Park Service (NPS) National Trails Office about this issue and that office agrees that the projects will not have any effects on the Trail.

We have forwarded your letter to the Moapa Band of Paiute Indians (Moapa Band) for their due consideration. No doubt the proposed recreational or educational projects listed in the letter would be worthwhile; however, in light of the absence of any impacts to the Trail, suggesting that the Moapa Band and project proponent might choose one or more of these projects as part of the solar projects seems unwarranted. We would support any decision the Moapa Band may make regarding the projects proposed in your letter, but any subsequent activity related to the OSTA projects would be taken independent and totally separate from the present undertakings before BIA.

If there are any questions, please contact Mr. Garry J. Cantley, Regional Archeologist, at (602) 379-6750 extension 1256 or by email at Garry.Cantley@bia.gov.

Sincerely,

RODNEY MCVEY Digitally signed by RODNEY MCVEY
Date: 2020.11.04 13:37:37 -07'00'

Rodney McVey
Deputy Regional Director - Trust Services

cc: Superintendent, Southern Paiute Agency
Attn: Environmental Coordinator
Chairman, Moapa Business Council
Chairperson, Moapa Cultural Committee
Executive Director, OSTA
Field Manager, Las Vegas Field Office, BLM
Cultural Resource Specialist, Nat'l Trails System-Intermtn. Reg., NPS
Director, Solar Development, EDF Renewables
Manager, Siting & Permitting, 8minutenergy
Regional Realty Officer, WRO

United States Department of the Interior
BUREAU OF INDIAN AFFAIRS
Western Regional Office
2600 North Central Avenue
Phoenix, Arizona 85004-3008

IN REPLY REFER TO:
Environmental Quality Services
MS620-EQS

Ms. Rebecca L. Palmer
State Historic Preservation Officer
Nevada State Historic Preservation Office
901 South Stewart Street, Suite 5004
Carson City, Nevada 89701-5248

Dear Ms. Palmer:

The Bureau of Indian Affairs (BIA) is responding to your letter dated October 23, 2020, regarding the proposed undertaking: **approval of two leases and concomitant rights-of-way for the Southern Bighorn Solar Projects I and II (Project No. 2020-124; SHPO Undertaking Number [UT #] 2020-6377).** This undertaking would occur on the Moapa River Indian Reservation of the Moapa Band of Paiute Indians (Moapa Band).

Your letter requested documentation of the established Area of Potential Effect (APE), which you will find in Enclosure 1. We anticipate the project to entail development of up to 3,600 acres of the lease option area of 7,112 acres.

As noted in the email from the National Park Service (NPS) in Enclosure 2a, it is apparent that we need to clarify some confusion regarding the Old Spanish Trail/Mormon Wagon Road (26CK3536 and 26CK3848) and the Congressionally designated trail referred to as the Old Spanish National Historic Trail (Trail) (https://www.nps.gov/olsp/index.htm). Segments of the former (26CK3536 and 26CK3848) are present in the undertaking's direct and indirect APE; however, as described in our previous letter and accompanying report, at least for those segments in the direct APE, the segments have lost all integrity of setting, feeling, and association due to impacts by commercial traffic, off-road vehicular damage, utilities installation, and erosion.

Regarding the Congressionally designated Trail, it is under co-management by the NPS and Bureau of Land Management (BLM). As illustrated in Enclosure 2b, the Trail is minimally located over a mile to the southeast of the proposed undertaking, with intervening topography. Based on the results of our visual assessment provided in Enclosure 2c, and in consultation with the NPS and BLM, we concluded there were no effects to the Trail. We have spoken directly with officers of the Old Spanish Trail Association (OSTA) and afterwards received the enclosed letter from that organization (Enclosure 2d). No doubt the proposed recreational or educational projects listed in the OSTA letter would be worthwhile; however, in light of the absence of any impacts to the Trail, suggesting that the Moapa Band and project proponent might choose one or more of these projects as part of the present undertaking seems unwarranted. We have advised OSTA of this conclusion.

We have forwarded the OSTA letter to the Moapa Band for their due consideration, but any subsequent activity related to the proposed OTSA projects would be taken independent and totally separate from the present undertaking before BIA.

We are pleased that your office concurs with our determination that 26CK10795 is not eligible for listing in the National Register of Historic Places. Enclosure 3 is the requested site form for that site. We also are submitting in Enclosure 4 the requested maps showing the locations for historic properties in the indirect APE: Tiffany Mill Site (26CK4348), San Pedro, Los Angeles, and Salt Lake Railroad/Union Pacific Railroad (26CK4429/26CK5685), Highway 91/Arrowhead Trail (26CK4958/26CK4369/26CK7793), a Railroad Construction Camp (26CK5019), Relay Tower (S2160), and the prehistoric trail and rock shelter (26CK10796). Please note that these maps have the locations for the KOPs which you also requested.

You requested a summary of our tribal consultations for this Project. The BIA is in regular contact with the Moapa Band, which constitutes the landowners and one of the project proponents. We approached eight other Tribes seeking their views on potential effects of the undertaking on historic properties, but have not received any response.

We would appreciate your assistance in helping BIA meet its mandated streamlining directives for the National Environmental Policy Act by providing timely review and response to this letter. We ask for your concurrence with our original determination of no adverse effect.

If there are any questions, please contact Mr. Garry J. Cantley, Regional Archeologist, at (602) 379-6750 extension 1256 or by email at Garry.Cantley@bia.gov.

Sincerely,

RODNEY MCVEY

Digitally signed by RODNEY MCVEY
Date: 2020.11.30 11:21:50 -07'00'

Rodney McVey
Deputy Regional Director - Trust Services

Enclosures

cc: Superintendent, Southern Paiute Agency
Attn: Environmental Coordinator
Chairman, Moapa Business Council (w/enc)
Chairperson, Moapa Cultural Committee
Field Manager, Las Vegas Field Office, BLM (w/enc)
Attn: Archeologist
Cultural Resource Specialist, Nat'l Trails System-Intermtn. Reg., NPS (w/enc)
Manager, Siting & Permitting, 8minutenergy (w/enc)
Regional Realty Officer, BIA WRO

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Appendix M

Biological Assessments

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Biological Assessment

Southern Bighorn Solar I Project

Prepared for:

Bureau of Indian Affairs Western Regional Office

2600 N. Central Avenue

Phoenix, AZ 85004-3050

November 2020

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TABLE OF CONTENTS

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1 INTRODUCTION

The purpose of this Biological Assessment (BA) is to review the Southern Bighorn Solar Project I (SBSP I or Project) and to determine to what extent the Project would affect federally listed threatened or endangered species; species proposed for listing; and/or designated or proposed critical habitat. The Project would use land held in trust by the Bureau of Indian Affairs (BIA) for the benefit of the Moapa Band of Paiutes (Moapa Band) and a designated utility corridor on Reservation lands that is managed by the Bureau of Land Management (BLM).

The proposed Project would be located approximately 30 miles northeast of Las Vegas in Clark County, Nevada (**Figure 1-1**), west of I-15 and east of U.S. Highway 93. The SBSP I would be located on up to 2,599 leased acres on the Reservation in Sections 7, 8, 9, 17, and 18 of Township 16 South, Range 65 East; and Section 12, 13, 25, 26, 27, 34, 35, and 36 of Township 16 South, Range 64 East, Mount Diablo Base Meridian.

The proposed 6-miles of collector lines would be located in Township 16 South, Range 64 East. The northern portion of the collector line would be located adjacent to an existing utility corridor, adjacent to multiple existing linear electric transmission and pipeline utilities, and the southern portion of the line would cross the same corridor and existing utilities. **Figure 1-2** shows the location of the proposed components of the Project and associated facilities. Project components would include onsite facilities, offsite facilities, and temporary facilities needed to construct the Project.

The proposed approximately 2-miles of new access roads would be located in Sections 13, 14, and 23 of Township 16 South, Range 64 East, Mount Diablo Base Meridian.

The majority of the Project is located on Tribal land. A portion of the collector line is located on Tribal land but is within a designated utility corridor that is managed by the BLM. A portion of the existing access road is located on lands administered by the BLM. As such, this BA has been prepared in coordination with both BIA and BLM for submittal to the U.S. Fish and Wildlife Service (USFWS).

1.1 Project Overview

300MS 8me LLC ("Applicant"), a subsidiary of 8minutenergy, proposes to construct, operate, maintain, and decommission the Project, consisting of up to a 300-megawatt (MW) alternating current (AC) solar photovoltaic (PV) power generating facility (two solar fields) on approximately 2,600 acres of land on the Moapa River Indian Reservation (Reservation) in Clark County, Nevada (**Figure 1-1**). Major Project components include the following:

- Solar fields
- Battery Energy Storage System (BESS)
- Collector line
- Site fencing
- Communications systems infrastructure
- Operation and maintenance (O&M) building
- Access roads

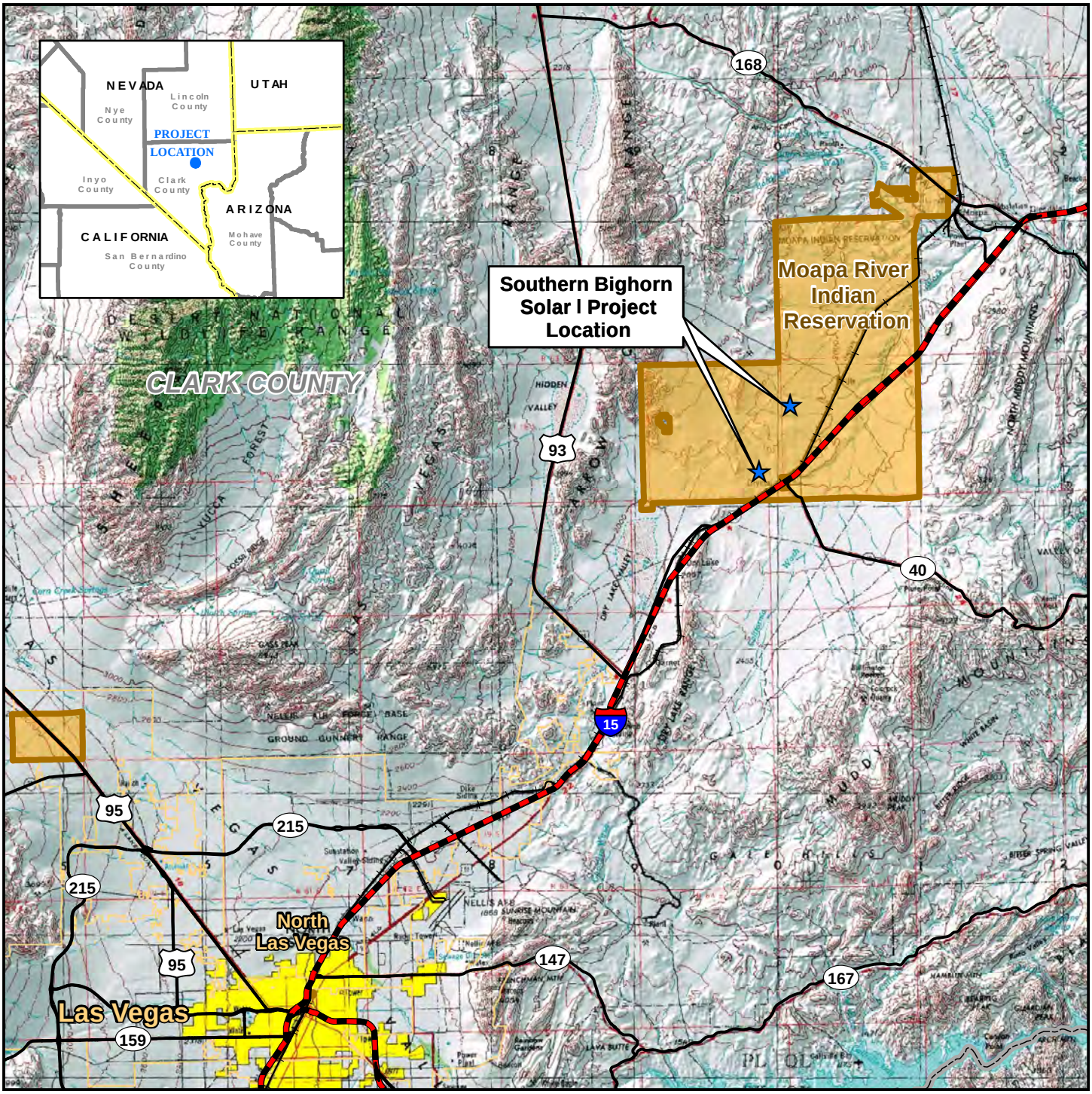
A complete Project description is presented in Chapter 2 of this BA.

Power produced by the Project would be conveyed to the Nevada Power bulk transmission system via the collector line, which would interconnect to the previously approved Eagle Shadow Mountain substation. From there, the electricity generated would connect to the existing 230-kilovolt (kV) transmission generation interconnection (gen-tie) line within a designated utility corridor which would deliver the electricity to the regional grid at NV Energy's Reid Gardner Substation.

1.2 Consultation History

On September 10, 2020, an official list of species that may occur within the Project area was obtained from the USFWS website Information for Planning and Consultation System (IPaC) (Consultation Code: 08ENVS00-2020-SLI-0217)(**Appendix A**); additional species were considered due to proximity to the Project area (USFWS 2020). **Table 1-1** lists these species, their status, critical habitat (if any) and proximity of the same to the proposed Project area, and the recommended effects determination.

The BIA met with USFWS on April 30, 2020, via teleconference, to discuss the Section 7 process, timing, options for Mojave desert tortoise (*Gopherus agassizii*) relocation and potential project designs that would minimize impacts to desert tortoise. Attendees included Glen Knowles (USFWS Las Vegas Field Office), Kelly Barry (USFWS Las Vegas Field Office), Jessica Zehr (USFWS, Las Vegas Field Office), Chip Lewis (BIA) and Patrick Golden (Heritage).



LEGEND

- Solar Project Location
- Interstate
- US/ State Highway
- Railroad
- Municipal Boundary

Jurisdictional Land Ownership

- Indian Reservation

0 2 4 6 8 10

Miles

Universal Transverse Mercator
North American Datum 1983
Zone 11 North, Meters

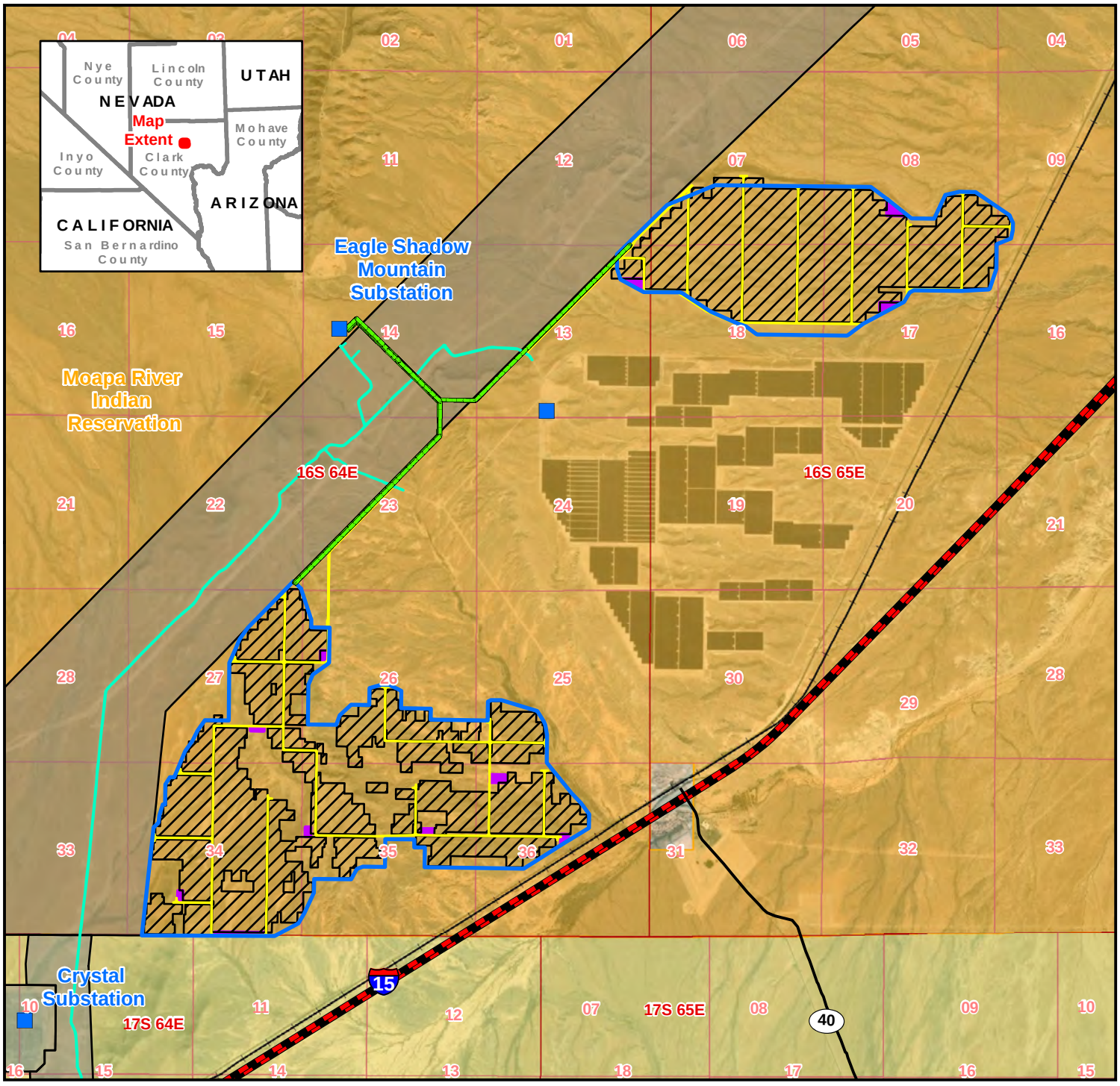
SOUTHERN BIGHORN SOLAR I PROJECT

FIGURE 1-1
PROJECT LOCATION

Map Extent: Clark County, Nevada

Date: 09-11-20		Author: rnc

G:\Southern Bighorn Solar Project/MXD's/Project Location 8.5x11 091120.mxd



Project Components

- Collector Lines
- Existing Access
- New Access
- Lease Area
- Solar Panel Installation Area
- Laydown Yard

General Features

- Existing Substation
- Interstate
- Major Highway
- Railroad
- Designated Utility Corridor
- Township / Range
- Section Line

Jurisdictional Land Ownership

- Bureau of Land Management Land
- Indian Land

0 0.25 0.5 0.75 1

Miles

Universal Transverse Mercator
North American Datum 1983
Zone 12 North, Meters

SOUTHERN BIGHORN SOLAR I PROJECT

Figure 1-2
Project Components

Map Extent: Clark County, Nevada

Date: 09-11-20 | Author: rnc

Table 1-1 - LISTED SPECIES CONSIDERED			
Species	**Status**	**Critical Habitat/Location**	**Recommended Determination of Effects**
Birds			
Yellow-billed cuckoo (*Coccyzus americanus*) Population: Western U.S. Distinct Population Unit	Threatened	USFWS Proposed Critical Habitat approximately 100 miles south of the Project area	*May affect, not likely to adversely affect*
Yuma clapper (Ridgway's) rail (*Rallus longirostris yumanensis*) Population: U.S. only	Endangered	No USFWS Designated Critical Habitat	*May affect, not likely to adversely affect*
Southwestern willow flycatcher (*Empidonax trailii extimus*)	Endangered	USFWS Designated Critical Habitat approximately 20 miles east of the Project area	*May affect, not likely to adversely affect*
Reptiles			
Mojave desert tortoise (*Gopherus agassizii*)	Threatened	USFWS designated Critical Habitat approximately 10 miles west of the Project area	*May affect, likely to adversely affect* *No effect to designated critical habitat*
Fish			
Moapa dace (*Moapa coriacea*)	Endangered	No USFWS Designated Critical Habitat	*May affect, likely to adversely affect*

** Yellow-billed cuckoo and Moapa dace were not included in the USFWS official species letter but are addressed in this BA due to the proximity of the species' ranges to the project area.*

2 DESCRIPTION OF THE PROPOSED ACTION

This chapter provides a detailed description of the proposed Project. It describes the various components of the Project and includes discussions of the proposed construction process, O&M procedures, and decommissioning.

The 2,600-acre solar site would be located entirely on the Reservation. Major onsite facilities include two solar fields comprised of multiple blocks totaling 300MW AC output, a battery energy storage system (BESS), collector lines, site fencing, communications systems infrastructure, O&M building, and access roads. Onsite facilities would impact up to 2,600 acres. The offsite facilities would include an approximately 6-mile largely underground collector line co-located with the new access road and would

be located on the Reservation and BLM-administered utility corridor. 4 miles of the collector line would be on Tribal lands and 2 miles within a Federally-designated utility corridor on the Reservation. These lines would require a ROW width that would vary between 60 and 120 feet. Additional offsite facilities include access roads using existing roads that would provide access to the Project and electric distribution and communication lines; no upgrades to these existing roads are anticipated. Temporary facilities that would be removed at the end of construction include temporary work areas, pull sites, and laydown yards. **Table 2-1** summarizes the principle components of the Project and the associated agency actions.

Power produced by the Project would be conveyed to the regional transmission system via the collector line and interconnection to the Eagle Shadow Mountain Solar Project (ESMSP) substation where it would tie in with NV Energy's existing 230kV Reid Gardner Substation.

Table 2-1

SUMMARY OF AGENCY LANDS / JURISDICTION

PROPOSED SOUTHERN BIGHORNSOLAR I PROJECT

Agency	Project Component	Location	Agency Action	Mileage / Acreage[1]
BIA	Solar Fields	Reservation	Lease[2]	Up to 2,600 acres
	Existing Access Roads	Reservation	ROW	Up to 4 miles / 10 acres
	New Access Roads	Reservation	ROW	Up to 2 miles / 7 acres
	Collector Lines	Reservation	ROW	Up to 4 miles / 20 acres
	TOTAL BIA			10 miles / 2,637 acres
BLM	Existing Access Roads	Designated Utility Corridor on Tribal Lands and managed by BLM	ROW	20 miles / 42 acres
	Existing Access Roads	BLM Lands	ROW	2 miles / 6 acres
	Collector Lines	Designated Utility Corridor on Tribal Lands and managed by BLM	ROW	2 miles / 13 acres
	Gen-tie Line	Designated Utility Corridor on Tribal Lands and managed by BLM	ROW	11 miles / 98 acres
	Gen-tie Line	BLM Lands	ROW	<1 miles / 3 acre
	TOTAL BLM			35 miles / 162 acres

[1] Acreage and mileage are approximate. Collector line acreage is based on a ROW that varies from 60 to 120 feet wide, depending on location. Only a portion of the ROWs would be disturbed. Only a portion of the solar field would be disturbed by the final footprint of the Project.

The total acreage of temporary and permanent disturbance associated with the Project is summarized in **Table 2-2Error! Reference source not found.**. The solar fields contain several major facilities, referred to in this document as onsite facilities. Onsite facilities would impact a portion of the approximately 2,600-acre solar field. Onsite facilities are discussed in detail below. Collector lines and access roads, referred to in this document as offsite facilities, are also discussed in detail below. The Project would implement best management practices (BMPs) and design features to guide design, construction, O&M, and decommissioning to minimize environmental impacts. The BMPs and design features incorporated into the Projects are summarized in **Appendix B** of the DEIS.

Permanent disturbance areas will be those areas where the surface of the ground is not restored to its existing condition after construction, such as foundations or new access roads. Temporary disturbance areas include those where construction activity will take place but where restoration of the surface will be possible, such as temporary work areas, pull sites, and laydown yards. In some places, areas of temporary disturbance will overlap with previously disturbed areas. The Project is estimated to result in approximately 306 acres of permanent disturbance and 2,335 acres of temporary disturbance.

Table 2-2
TEMPORARY AND PERMANENT DISTURBANCE

Project Component	Temporary Disturbance (acres)	Permanent Disturbance (acres)
Solar Field and Ancillary Facilities[1]	2,139	461
Collector Line and Collector Line Access Road	--	33
New Access Roads to Solar Fields	2	7
Total	**2,141**	**501[2]**

[1] The solar field includes all facilities within its boundary including solar arrays, internal site roads, substation, O&M facility, and all associated components.
[2] These acres would be graded and kept free of vegetation for the duration of operations while the remainder would not be graded with vegetation left in place.

2.1 Onsite Facilities

The solar fields include the following onsite facilities discussed in detail below: solar blocks, Battery Energy Storage System (BESS), site fencing, communications systems infrastructure, O&M building, and access roads. **Figure 2-1** shows the conceptual site plan for the solar fields (this figure also depicts offsite facilities including collector lines and access roads which are discussed in detail in Section 2.2).

2.1.1 Solar Blocks

Mounted PV solar panels, inverter stations, and transformers would be combined to form solar blocks which would be repeated to create electrical energy of up to 300 MW (approximately 83 solar blocks; block size and quantity may change based on final design). The electricity generated from the solar panels (direct electrical current [DC]) would be delivered through underground cables to an inverter station where the DC is converted to alternating electrical current [AC]. Inverter stations are generally located in the middle of each solar block. A transformer would then step up the voltage to 35 kV.

The transformers would be contained in steel enclosures. The inverter stations could be contained in an enclosed or canopied metal structure on a skid or concrete mounted pad. The enclosures would be designed to meet National Electric Manufacturers Association (NEMA) 1 or NEMA 3R IP44 standards for electrical enclosures in order to contain any fire, should one occur. The enclosures will be constructed on 6 inches of stone with filter fabric underlay; each enclosure pad would be approximately 350 square feet in size.

Solar panels would be installed in rows of single-axis trackers that would rotate to follow the sun over the course of the day. A typical PV solar panel layout using single-axis trackers is shown on **Figure 2-2**. Depending on the soil conditions within the solar fields, the wind load capacity of the solar panels, and the mounting structure supporting the solar panels, the foundations for the mounting structures would either be embedded driven steel posts or screw anchors (screw anchors would only be used if soil conditions do not support driven posts). The mounting structures would extend approximately 12 feet below ground and may be encased in concrete or a small concrete footing. The layout of the solar blocks would be optimized for the desired energy production while accounting for site characteristics, such as soil conditions, topography, and hydrology. The solar panels would be up to 20 feet above ground at their highest point, which would occur during the morning and evening hours when the trackers are tilted at their maximum angle (**Figure 2-3**). Each solar block would be powered by a low-voltage electric drive

motor. The motors would typically be operated for a few seconds every 5 to 10 minutes during daylight conditions to move the panels in approximately one-degree increments.

Meteorological monitoring stations would be located at multiple locations (up to 7) within the solar blocks to monitor wind speed and communicate with the trackers. This would allow for the trackers to rotate the solar panels to a flat position during high winds. Meteorological stations would be mounted on or around the inverter stations and would not exceed 16 feet in height from the ground.

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Eagle Shadow Mountain Substation

15

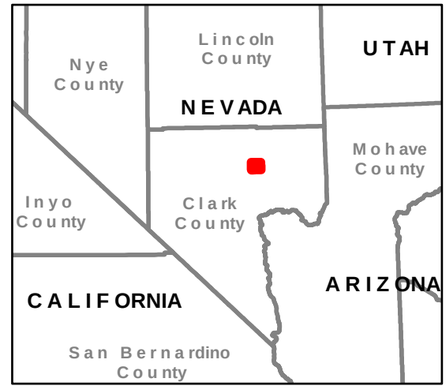
40

Project Components

- Collector Lines
- Existing Access
- New Access
- Lease Area
- Solar Panel Installation Area
- Laydown Yard

General Features

- Existing Substation
- Interstate
- Major Highway
- Railroad
- Designated Utility Corridor



0 0.25 0.5 0.75 1

Miles

North American Datum 1983
State Plane Nevada East Feet

SOUTHERN BIGHORN SOLAR I PROJECT

FIGURE 2-1
CONCEPTUAL SITE PLAN

Map Extent: Clark County, Nevada

Date: 09-11-20 | Author: rnc

G:\MXD's/Project Location_091120.mxd

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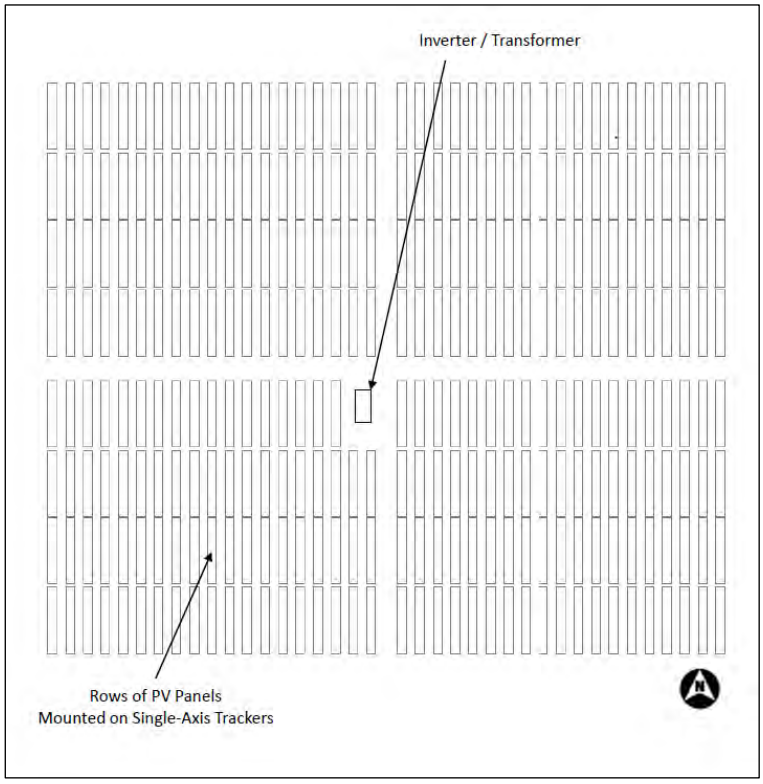

Figure 2-2 – Typical Single-Axis Tracker Array Layout

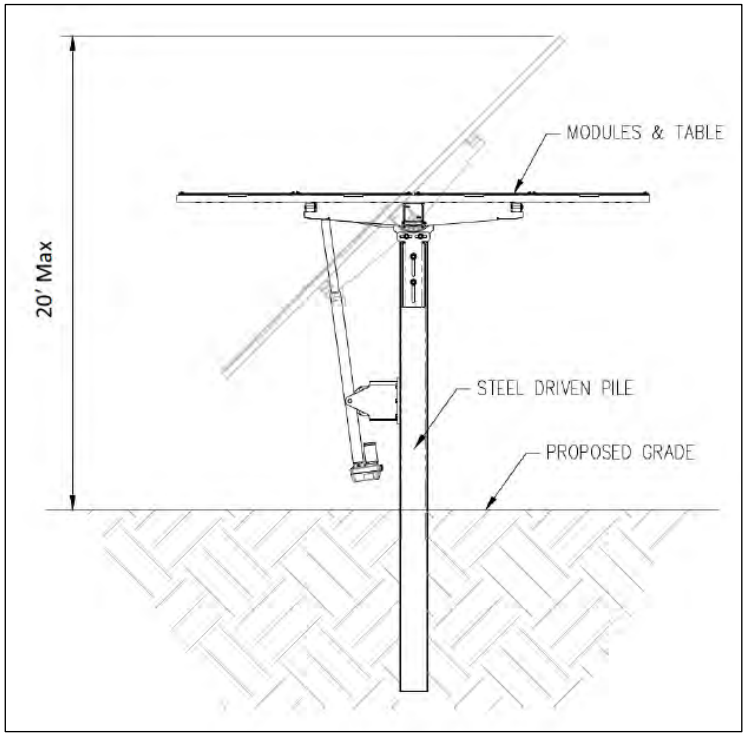

Figure 2-3 – Typical Single-Axis Tracker Cross Sectional View

2.1.1 Battery Energy Storage System

The solar fields would include one or more BESSs. The BESSs would consist of modular and scalable battery packs and battery control systems that conform to national safety standards. The BESSs would be located in pad- or post-mounted, stackable metal structures (approximately 40 feet long by 8 feet wide by 8 feet high) or a separate building in compliance with applicable regulations. The maximum height of a building, if used, would not exceed 25 feet. The total acreage of the BESSs would not exceed 12 acres. The dimensions and number of BESSs would vary depending on the application, supplier, chosen configuration, and applicable building standards. The BESSs would be located in the area of permanent disturbance within the solar field.

2.1.2 Site Fencing

The Project sites would be enclosed within a chain link perimeter fence, potentially with barbed wire, measuring up to 8 feet in height (from finished grade). The fences would have controlled access points, lighting, and possibly security alarms, security camera systems with remote monitoring, and security guard vehicle patrols during operations to deter trespassing and/or unauthorized activities. The fences would have a 6 to 8 inch opening at the bottom to allow for the movement of desert tortoises into and through the site during O&M. The BESSs and O&M facilities would be surrounded by fencing that does not include the desert tortoise opening due to safety issues. There would be up to 78,386 linear feet of fencing following the perimeter of the property.

2.1.3 Communication Systems Infrastructure

Telecommunications systems would be installed at the transformers, consisting of a remote terminal unit, communications line (i.e., T-1 line), microwave receiver, and miscellaneous communication cables and link equipment, as required. Fiber optics would be installed on the collector lines to link the Project to the Reid Gardner Substation. A meter would be installed to measure the energy output of the Project. The microwave receiver may be mounted on the O&M building or on a 100-foot-tall lattice structure within the solar field to facilitate wireless communications and provide a back-up option for site telecommunications.

The Project would include a Supervisory Control and Data Acquisition (SCADA) system that would allow for the remote monitoring and control of inverters and other Project components. The SCADA system would be able to monitor Project output and availability and to run diagnostics on the equipment. This equipment would be located in the O&M building and would connect to the communications system.

2.1.4 Operation and Maintenance Building

The solar field would include an O&M building with onsite parking. The O&M building would be steel framed with metal siding and roof panels and would be approximately 80 feet long by 20 feet wide and approximately 20 feet in height. The O&M building could include offices, repair facility/parts storage, a control room, and restrooms. A septic tank and leach field may be installed for collection, treatment, and disposal of sanitary waste. If a septic system were not installed, portable toilets would be used.

Additional components of the O&M building would include aboveground water storage tanks, signage, a flagpole, trash containers, and SCADA system. The O&M building and components would be equipped with exterior lighting, as approved by the Moapa Band and BIA. Minimal lighting would be used and would be directed downward and away from wildlife habitat. The O&M building and parking area would occupy up to 6 acres.

2.1.5 Access Roads

Within the solar field, access roads would be built between the solar blocks to provide vehicle access to the solar equipment (e.g., solar panels, inverter stations, transformers). The internal access roads would occupy approximately 35 acres. Turnarounds would be constructed at the terminus of the roads to facilitate vehicle and equipment turn-around. The existing soil surface of all access roads would be leveled with a road grader. In addition to grading, access roads that lead to inverter stations would be compacted and graveled with onsite materials.

2.2 Offsite Facilities

2.2.1 Collector Lines

Energy generated from the solar blocks would be transferred from a transformer within the solar field to the ESMSP substation through one underground collector line (**Figure 2-1**). At the ESMSP substation, the electricity would be stepped up to 230 kV for delivery to NV Energy's Reid Gardner Substation. A small section of the lines may be installed overhead where they cross through the BLM-managed designated utility corridor in order to avoid conflicts with existing underground utilities. The locations of overhead collector line installation can only be determined during construction; therefore the Proposed Action includes overhead and underground construction where collector lines cross the BLM-managed designated utility corridor. The collector line and fiber optic communication line would be installed underground in trenches up to 4 feet deep and 10 feet wide. The Project would include approximately 6 miles of primarily underground collector line. The collector line would be constructed within 33 acres of ROW (13 acres within the BLM-managed utility corridor and 20 acres on the Reservation).

Overhead collector lines, if necessary, would include the construction of up to 57 support structures across up to two linear miles for SBSP I (constructed as three parallel collector lines), all within the BLM-managed designated utility corridor. The structures would be up to 50 to 75 feet above ground and spaced approximately 150 to 300 feet apart. The poles would be buried at 10 percent of the pole height plus two feet. The collector line ROW and permanent disturbance areas are expected to remain the same whether the collector lines are constructed overhead or underground.

2.2.2 Access Roads

The primary access route to the Project would utilize existing roads. Access would be via I-15 and North Las Vegas Boulevard, and then along existing access roads on the Reservation. These existing roads on the Reservation include the access road for the Southern Paiute Solar Project facility, roads providing access to an existing tribal aggregate operation and water wells adjacent to the Projects, an access road within and adjacent to the designated utility corridor, and an unnamed road that connects to the town of Ute, Nevada. No upgrades to these existing roads are anticipated; minor maintenance may be required during construction, O&M, and decommissioning.

The Project also includes the construction of new access roads that connect the existing Southern Paiute Solar Project facility roads to the SBSP I solar fields, and a new access road within the proposed collector line ROW. It would include up to 2 miles (7 acres) of new access roads on the Reservation.

The Project would include 58 acres of existing access road (6 acres on BLM lands, 42 acres within the BLM-managed designated utility corridor, and 10 acres on Reservation lands). The Project would require 7 acres of new access roads on Reservation lands.

2.3 Project Construction

Construction of SBSP I is expected to take approximately 14 to 16 months. The Applicant expects that construction would commence in the second quarter of 2021.

2.3.1 Onsite Facilities

Grading, Site Preparation, and Vegetation Removal – Environmental clearance surveys would be performed at the Project site prior to commencement of construction activities. The boundaries of the Project would be delineated and marked prior to grading and site preparation. Where necessary, areas to be avoided in compliance with applicable Minimization Measures (Section 2.6.2) would be flagged with appropriate buffers to prevent impacts. Temporary tortoise exclusion fencing would be installed around the perimeter of the Project site to prevent desert tortoises from moving back into the site during construction. In areas where vegetation would be mowed or trimmed rather than removed, vegetation would be maintained at a height of 18 inches, and the roots would be left intact to facilitate regrowth following the completion of construction. Equipment and vehicles would drive over and crush mowed vegetation during construction, if necessary.

Portions of site would then be graded, and vegetation would be removed or mowed in selected areas, as needed for construction (see below). In some areas, small amounts of explosives may be used to crack and remove rock material that is difficult to grade using other methods. This blasting would occur only after biological monitors have cleared the site (see **Section 2.7.2.1**). Vegetation would be permanently cleared for the new access road and the O&M building. Vegetation would also be mowed and trimmed, as needed, in the solar blocks to create a safe work environment and avoid interference with construction activities.

All grading (i.e., cut and fill) required for the Project would use onsite cut material, and no fill material would be exported or imported. Grading would be required for the O&M building, BESSs, and access roads within the solar field. A small, graded pad would be required within each solar array to accommodate the inverter and transformer unless they are installed on driven piers. The solar field would require a positive natural terrain slope of less than five percent. Grading and associated facilities would permanently disturb up to 461 acres within the solar field.

Gravel/Aggregate/Concrete – Concrete would be trucked in and poured in place for mounting structure and building foundations. Aggregate material would be used for parking areas and access roads, and riprap material may be needed for erosion control. The smallest practicable size riprap material will be used to minimize the likelihood of tortoise entrapment; the applicant will coordinate specific sizes and locations with the USFWS as material availability and engineering constraints are known. A 6-inch-deep layer of aggregate stone would be installed in any low water crossings. This material would be sourced from the Moapa Band's existing gravel materials operation located immediately adjacent to the solar fields, as available. After the O&M building is constructed, the surrounding area would be appropriately surfaced for parking, roads, material storage, and the erection of a temporary office for use during the construction phase of the Project.

Solar Block Assembly and Construction – Construction work within each solar block would generally proceed as follows:

- Install foundations for inverter stations;
- Prepare trenches for underground cables;
- Install underground cable, as required;
- Backfill trenches;
- Install concrete footings for transformers;
- Install inverter station and transformer equipment;
- Install steel posts and tracker assemblies;
- Install solar panels;
- Perform electrical terminations; and
- Inspect, test, and commission equipment.

The solar blocks would be installed with solar panels mounted on steel tracker assemblies which would be supported by steel posts. The structural steel posts may be galvanized to prevent potential damage from corrosive soils, as needed. Trucks would be used to transport the solar panels to the solar field. Final solar field assembly would require small cranes, tractors, and forklifts.

Additional Solar Field Construction **-** Cable trenches within the solar fields would contain electrical conductors for low-voltage power collection and fiber optic cables for equipment communication. Trenches would vary between 2 to 5 feet wide and 2 to 5 feet deep. Trench excavation would be performed with conventional trenching equipment and excavated soil would be placed adjacent to the trench and used as backfill once installation is complete.

Installation of electrical equipment and necessary infrastructure to energize the equipment would consist primarily of the following tasks:

- Equipment—Installation of all electrical equipment including circuit breakers, switches and switchgear, lighting, and control systems, including SCADA equipment.
- Cables—Installation of all cables necessary to energize the equipment. Cables would be routed via cable trays, above-grade conduits, and below-grade conduit.
- Grounding—All equipment and structures would be grounded as necessary.
- Telecommunications—Communication systems including T-1 internet cables, fiber optic, and telephone would be installed during electrical construction.

Laydown Yards – Approximately 11 laydown yards totaling 19 acres would be established within the solar fields. The laydown yards would be used to stage equipment during construction. Vegetation within the laydown yards would be mowed, but these areas would not need to be graded or compacted. Where practical, laydown yards would be developed into solar blocks as construction progresses and the laydown yards are no longer needed.

Support Facilities Construction – Following grading and site preparation, concrete foundations would be poured to support the permanent O&M building located near the solar field entrance. An area adjacent to the building would be developed for parking.

A septic tank and leach field may be constructed for the collection, treatment, and disposal of sanitary waste. Excavation for the septic tank would be completed with the use of backhoe, and excavated soil would be placed adjacent to the septic tank location and used as backfill once installation is complete; excess soil would be reused onsite, if necessary.

A temporary construction office consisting of a trailer or storage container (e.g. Connex Box) would be placed on site during construction. The construction office would be located at the solar field entrance; the temporary office site would be adjacent to the O&M building. Laydown yards, water holding tanks, portable toilets, and generators would also be used during construction. Following construction, permanent fencing would be installed around the solar field perimeter.

The design and construction of the buildings and associated water/wastewater systems would be consistent with Clark County building standards and approved by the Moapa Band and BIA.

2.3.2 Offsite Facilities

Access Roads –Construction of new access roads will involve grading and filling with dirt to create a 15 to 24-foot-wide roadbed. Road berms will also be constructed using fill dirt obtained from the Project area. Any low water crossings will be filled with aggregate stone to a depth of approximately 6 inches. New access roads would be left in place after construction is completed; existing access roads used by the Project would not be upgraded or widened, but some maintenance – including grading and vegetation removal – may be required depending on their condition. All grading (i.e., cut and fill) required for the Project would use onsite cut material, and no fill material would be expected to be exported or imported.

Collector Line Construction – It is estimated that construction of the collector lines would result in permanent disturbance of the entire ROW (33 acres), though the actual permanent disturbance would likely be less than this. A total of 7 miles of collector lines consisting of three separate lines would be constructed. Of this, up to two miles may be installed overhead where the collector lines cross the BLM-managed designated utility corridor.

The primary stages of the underground collector line installation would be trenching, installing conduit, backfilling, and lastly, pulling wire through the conduit. The collector lines and fiber optic lines would be installed in trenches up to 10 feet wide and four feet deep and subsequently backfilled.

The primary stages used to construct the overhead collector lines, if necessary, to avoid conflicts with underground utilities in the BLM-managed designated utility corridor, would be foundation installation, structure installation, and conductor stringing.

Wooden poles used for the overhead collector line structures would be directly embedded into the ground and would be installed by auguring holes and placing the poles into the holes using backhoes or heavy lifter vehicles. A 100-foot by 40-foot area would be needed around each of the wooden poles for construction (57 poles). These areas would be disturbed during construction activities and would be cleared of vegetation only as required for safety and efficiency. The primary equipment used in setting foundations would include concrete trucks, auger rigs, pickup trucks, cranes, and front-end loaders. Excavated spoil material would be spread around the temporary work areas.

After the poles are erected, the conductors and static wires would be strung between the poles and attached. Equipment would pull the conductors and wires into place from designated pull and tensioning sites. These sites would be approximately 120 feet wide by 500 feet long and located within the ROW. Stringing would likely be conducted one conductor at a time, with all equipment in the same location until all lines are in place. Wire stringing is typically completed with heavy-duty trucks equipped with a telescoping boom lift.

2.3.3 Site Stabilization, Protection and Reclamation

Appropriate erosion and dust-control measures would be implemented during construction of the solar fields and collector lines to prevent increased dust and erosion. The Project Applicant has prepared a draft Site Restoration Plan (**Appendix D** of the DEIS) which documents erosion- and dust-control measures to be implemented during and/or immediately after construction for the areas that are temporarily disturbed. This includes soil stabilization measures to prevent soil from being eroded by stormwater runoff; establishment of temporary laydown areas on level ground; avoiding blading in laydown areas; and minimizing and controlling dust generated during construction by applying water and/or agency-approved palliatives.

Soil stabilization measures in the Site Rehabilitation and Restoration Plan include BMPs to protect the soil surface by covering or binding soil particles. Depending on the site preparation technique, organic matter could be worked into the upper soil layers or mulched onsite and redistributed into the fill (except under equipment foundations, trenches and roadways) to aid in dust control. Prior to construction, the construction contractor would also develop and implement an erosion control plan for the Project and incorporate measures required by regulatory agency permits and contract documents as well as other measures selected by the contractor. Project-specific BMPs would also be designed by the contractor to protect the soil surface from erosion and would be included in the Stormwater Pollution Prevention Plan (SWPPP). Disturbed areas would also be seeded and hay, straw mulch, or approved material would be applied to aide in stabilizing disturbed areas.

During construction, up to 200 acre-feet (AF) of water would be required for dust control and would be obtained from the Moapa Band. If needed to control dust during construction, agency-approved palliatives would be applied to newly constructed access roads.

2.3.4 Construction Staff Schedule

Construction staff for the Project would consist of laborers, craftsmen, supervisory personnel, support personnel, and construction management personnel. Construction staff is anticipated to include an average of 300 workers, with a peak not expected to exceed 750 workers at any given time. Most construction staff would commute daily to the jobsite from within Clark County, primarily from the Reservation and the Las Vegas area. The Applicants would prepare a Worker Environmental Awareness Program (WEAP) to address Project-specific safety, health and environmental concerns. All construction staff would be required to complete WEAP training.

Construction generally would occur between 5:00 a.m. and 5:00 p.m., Monday through Friday, but could occur seven days a week. Additional hours could be necessary to make up schedule deficiencies or to complete critical construction activities. For instance, during hot weather, it may be necessary to start work earlier (e.g., at 3:00 a.m.) to avoid work during high ambient temperatures. Further, construction would require some nighttime activity for installation, refueling equipment, staging material for the following day's construction activities, service or electrical connection, or inspection, quality assurance/control, and testing activities. Nighttime activities would be performed with temporary lighting. Some activities may require construction activities 24 hours per day, 7 days per week.

2.4 Operations and Maintenance

2.4.1 Onsite Facilities

The O&M activities for the solar field include regular monitoring, periodic inspections and any needed maintenance. It is anticipated that up to five full time-equivalent (FTE) positions would be required during O&M for the Project. This workforce would include administrative and management personnel, operators, and security and maintenance personnel. Typically, up to three staff would work during the day shift (sunrise to sunset) and the remainder during the night shifts and weekends.

During the first year of operation, inspections would be more frequent to address identified post-construction issues. Periodic routine maintenance would include monthly, quarterly, semi-annual, and annual inspections and service. Major equipment maintenance would be performed approximately every 10 to 15 years.

Solar panel washing would be conducted periodically (likely on foot and by hand) as needed to improve power generation efficiency. Dust would be controlled and minimized by applying water and palliatives. The water requirements would be provided from existing water rights owned by the Moapa Band and leased to the Applicants. Water demand for panel washing and human use during O&M activities would not exceed 20 AF per year. A small water treatment system may be installed to provide deionized water for panel washing.

O&M would require the use of vehicles and equipment including crane trucks for minor equipment maintenance. Additional maintenance equipment would include forklifts, manlifts, and chemical application equipment for weed control. Pick-up trucks would be used daily onsite. No heavy equipment would be used during normal operations.

Vegetation within the solar blocks would be allowed to grow back following construction and would be maintained at a height of 18 inches during O&M. Vegetation would be trimmed as needed using a mower and/or string trimmers.

Safety precautions and emergency systems would be implemented as part of the design and construction of the Projects to ensure safe and reliable operation. Administrative controls would include classroom and hands-on training in O&M procedures, general safety items and a planned maintenance program. These would work with the system design and monitoring features to enhance safety and reliability. The Project would also have a Spill Prevention and Emergency Response Plan (**Appendix E** of the DEIS), which would address potential emergencies including chemical releases, fires, and injuries. All employees would be provided with communication devices (cell phones, and/or walkie-talkies) to provide aid in the event of an emergency.

The Applicant has prepared a draft Integrated Weed Management Plan (**Appendix F** of the DEIS) for the Project as required by BIA and the BLM (BLM 2007; BIA 2014). Herbicides would be used to control noxious and invasive weeds, if required. Pest control may also be required, including control of rodents and insects inside of the O&M facility.

The primary wastes generated during O&M activities would be nonhazardous solid and liquid wastes. Limited quantities of hazardous materials would be used and stored in the solar field. The BESSs would contain lithium-ion batteries that would need replacement periodically; used batteries would be disposed of according to local, State, and Federal regulations. Nonhazardous wastes produced by O&M activities would include defective or broken electrical materials and batteries, empty containers, typical refuse generated by workers and small office operations, and other miscellaneous solid wastes. The Spill

Prevention and Emergency Response Plan (**Appendix E** of the DEIS) prepared by the Applicant addresses waste and hazardous materials management, including BMPs related to storage, spill response, transportation, and handling of materials and wastes. Waste management would emphasize the recycling of wastes where possible and would identify the specific landfills that would receive waste that cannot be recycled.

The fire protection water system would be supplied from the water storage tank(s) located near O&M building. The fire protection water system would have the appropriate fire department connections and would be consistent with Clark County requirements. The Applicant would prepare and implement a Fire Management Plan (**Appendix G** of the DEIS) for O&M activities.

2.4.2 Offsite Facilities

The collector lines would operate continuously throughout the life of the Projects. Operational activities associated with the collector lines would involve periodic inspection and occasional maintenance and repair. Periodic visual inspections would be conducted of the above ground inverter stations for underground collector lines, and insulators, overhead grounds, and structure hardware for overhead collector lines, if installed. Collector line access roads are not expected to require frequent maintenance but could be graded as needed to provide access to structures for maintenance activities.

Maintenance of overhead sections of collector lines would also include removal of all vegetation to bare ground within a 10-foot radius around each structure. This vegetation treatment is called Defensible Space around Poles (DSAP) and protects the poles from fire, prevents fire ignition from electrical equipment that may spark, and provides a safe area for access during inspection and maintenance.

Other O&M activities, as needed, could include insulator washing, periodic aerial inspections, repair or replacement of underground collector lines and overhead conductors and insulators, and response to emergency situations (e.g. outages) to restore power. With the exception of emergency situations and outages, most maintenance work would take place during daylight hours.

2.5 Decommissioning

The anticipated operational life of the Project would be up to 50 years, after which the Project would be taken out of service and associated onsite and offsite facilities would be removed. Decommissioning would involve removal of the solar blocks and other facilities, with some buried components (such as cabling) potentially remaining in place.

To ensure that the permanent closure of the facility does not have an adverse effect, the Applicant has prepared a draft Decommissioning Plan included as **Appendix H** in the DEIS. The final Decommissioning Plan would be developed near the time of decommissioning in coordination with the Moapa Band and BIA, with input from other agencies as appropriate. The final plan would address future land use plans, removal of hazardous materials, impacts and mitigation associated with closure activities, schedule of closure activities, equipment to remain on the site, and conformance with applicable regulatory requirements and resource plans.

The collector line would also be taken out of service in accordance with local, state and federal regulations. Prior to removal, laydown yards would be delineated along the collector lines, as appropriate. It is anticipated that decommissioning of the collector line would be completed withing the boundaries of the existing footprint of the Project.

Following decommissioning, the disturbed areas would be stabilized and allowed to revegetate. Native species would be used for revegetation, if appropriate, and seeding using BLM and BIA recommended seed mixes. Re-seeding would take place during appropriate months for optimal regrowth. Seed would be planted using drilling, straw mulching, or hydromulching, as appropriate.

2.6 Management Plans, Minimization Measures, and Compensatory Mitigation

2.6.1 Management Plans

The Applicant would be required to prepare the following management plans, which would be submitted to the Moapa Band of Paiutes, BIA, BLM, and USFWS (as appropriate) for approval:

- Integrated Weed Management Plan
- Raven Control Plan
- Decommissioning Plan
- Site Restoration Plan
- Dust Abatement Plan
- Spill Prevention and Emergency Response Plan
- Health and Safety Program
- Fire Management Plan
- Hazardous Materials and Waste Management Plan
- Stormwater Pollution Prevention Plan
- Site Drainage Plan
- Traffic Management Plan
- Workers Environmental Awareness Program
- Bird and Bat Conservation Strategy

2.6.2 Minimization Measures

The following proposed minimization measures would be implemented as part of the Project proposed by the Applicant to avoid or reduce environmental impacts associated with the proposed action to federally protected species. Minimization will include the general conservation strategies (i.e., BMPs), as well as adhere to the specific desert tortoise minimization measures and comply with the terms and conditions of the USFWS BO issued for this Project.

2.6.2.1 Construction Minimization Measures

The following measures would be implemented to reduce effects on the desert tortoise and other terrestrial and avian wildlife species during construction, operation, and maintenance:

1. **Construction area flagging.** Work areas will be flagged prior to beginning construction activities and disturbance confined to the work areas. A biological monitor will escort all survey crews on site prior to construction. All survey crew vehicles will remain on existing roads and stay within the flagged areas to the maximum extent practicable. In cases where construction vehicles are required to go off existing roads, a biological monitor (on foot) will precede the vehicles.

2. **Desert tortoise fencing**. Temporary tortoise-proof fencing will be installed around the boundary of the solar facility. Biological monitors under supervision of an authorized biologist (approved by USFWS) will be present during fence installation to relocate all tortoises in harm's way to outside the work area. Additional clearance surveys and activities will be conducted after completion of the tortoise fence to ensure that no tortoises remain fenced inside the construction boundaries.

Fence specifications will be consistent with those approved by USFWS (USFWS 2009b). Tortoise guards will be placed at all road access points where desert tortoise-proof fencing is interrupted to exclude desert tortoises from the Project footprint. Gates or tortoise exclusion guards will be installed with minimal ground clearance and shall deter ingress by desert tortoises. The temporary tortoise-proof fencing will be removed once the Project is commissioned allowing tortoises to re-occupy the site during operations.

During the tortoise activity seasons (April – May, September - October), all new fences will be checked twice a day for the first two weeks after construction, or the first two weeks after tortoises become active if fence construction occurs in the winter, including once each day immediately before temperatures reach lethal thresholds. After the first two weeks, all tortoise exclusion fencing will be inspected monthly during construction, quarterly for the life of the Project, and immediately following all major rainfall events. Any damage to the fence will be repaired within two days of observing the damage.

3. **Field Contact Representative.** The BIA and Applicant will designate a Field Contact Representative (FCR) who will be responsible for overseeing compliance of the Terms and Conditions of the BO. The FCR will be onsite during all active construction activities that could result in the "take" of a desert tortoise. The FCR will have the authority to briefly halt activities that are in violation of the desert tortoise protective measures until the situation is remedied.

4. **Authorized desert tortoise biologist.** All authorized desert tortoise biologists (and monitors) are agents of BIA and USFWS and will report directly to BIA, USFWS, BLM, and the Applicant concurrently regarding all compliance issues and take of desert tortoises; this includes all draft and final reports of non-compliance or take. Authorized desert tortoise biologists, monitors, and the FCR will be responsible for ensuring compliance with all conservation measures for the Project as described in the BO. Prior to starting construction, authorized biologist(s) will submit documentation of authorization from the USFWS and approval of NDOW. Potential authorized desert tortoise biologists will submit their statement of qualifications to USFWS.

An authorized desert tortoise biologist will record each observation of a desert tortoise handled in the tortoise monitoring reports. This information will be provided directly to BIA, USFWS, and BLM.

5. **Biological monitoring.** Under supervision of an authorized biologist, biological monitors will be present at all active construction locations (not including the solar field after it has been fenced with desert tortoise fencing and clearance surveys have been completed). Desert tortoise monitors will provide oversight to ensure proper implementation of protective measures; record and report desert tortoises and tortoise sign observations in accordance with approved protocol; and report incidents of noncompliance in accordance with the BO and other relevant permits. The biological monitor(s) will survey the construction area to ensure that no tortoises are in harm's way. If a tortoise is observed entering the construction zone, work in the immediate vicinity will cease until the tortoise moves out of the area. Tortoises found above ground during construction activities will be moved offsite by an authorized biologist following the protocols described in the Desert Tortoise Translocation Plan.

6. **Desert tortoise clearance surveys and translocation.** After installation of tortoise fencing around the perimeter of the solar facility and prior to surface-disturbing activities, biological monitors and the authorized desert tortoise biologists who supervise them will conduct a clearance

survey to locate and remove all desert tortoises from harm's way including those areas to be disturbed, using techniques that provide full coverage of construction zones (USFWS 2009b).

No surface-disturbing activities shall begin until two consecutive surveys find no live tortoises. In sectors or zones where a live tortoise is found, surveys will be repeated until the two-pass standard is met.

An authorized biologist will excavate burrows potentially containing desert tortoises located in the area to be disturbed with the goal of locating and removing all desert tortoises and desert tortoise eggs. Typical tortoise burrows have a characteristic shape with a flat bottom and arched top similar to a capital letter 'D' with the flat side down. Clearance will include evaluation of caliche caves and dens will also be evaluated, as tortoises are known to shelter there. Caliche is a naturally occurring hardened cemented soil composed of calcium carbonate, gravel, sand, and silt. The practice of excavating every obvious tortoise burrow will not be done as it has shown to be ineffective and inefficient in locating tortoises; instead, all obvious tortoise burrows will be scoped for presence and possible extraction. 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 USFWS-approved guidance (USFWS 2009b). If any active tortoise nests are encountered, USFWS 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 will remain in place to allow for tortoise use during operations. Outside construction work areas, all potential desert tortoise burrows and pallets within 50 feet of the edge of the construction work area will be flagged. If a desert tortoise occupies a burrow during the less-active season, the tortoise may be temporarily penned or will be translocated following USFWS approval, contingent upon weather conditions and health assessment results. No stakes or flagging will be placed on the berm or in the opening of a desert tortoise burrow. Desert tortoise burrows will not be marked in a manner that facilitates poaching. Avoidance flagging will be designed to be easily distinguished from access route or other flagging and will be designed in consultation with experienced construction personnel and authorized biologists. This flagging will be removed following construction completion.

An authorized desert tortoise biologist or biological monitor will inspect areas to be backfilled immediately prior to backfilling. Burrows with the potential to be occupied by tortoises within the construction area will be searched for presence. In some cases, a fiber optic scope will be used to determine presence or absence within a deep burrow.

A translocation plan following the 2019 guidance will be approved by the USFWS prior to the start of construction (USFWS 2019a). The plan identifies potentially suitable recipient locations, control site options, post-translocation densities, procedures for pre-disturbance clearance surveys and tortoise handling, as well as disease testing and post-translocation monitoring and reporting requirements. Tortoises found within 500 meters of the project boundary (fenceline) will be relocated outside of the nearest fence to a location that contains suitable habitat; tortoises found within the interior of the project site (>500 meters from a boundary fence) would be moved to temporary pens for the duration of construction and may be returned to the solar facility interior (as close to the original capture location as possible) as soon as construction activities are complete.

BIA and the Applicant will have an authorized biologist relocate tortoises following the USFWS- approved protocol (USFWS 2009b) and according to the approved translocation plan. If the USFWS releases a revised protocol for handling desert tortoises before initiation of Project activities, the revised protocol will be implemented. The relocation/translocation effort will adhere to the following procedures as well as those stipulated in the BO Terms and Conditions:

Tortoises found within the project area will be relocated outside of the ROW to an area of suitable habitat as directed by the USFWS. Translocation will follow installation of exclusionary tortoise fence, as determined in coordination with the agencies. Translocation events will occur to specific locations outlined in the approved project-specific translocation review package (TRP) and disposition plan, based on construction and translocation timing considerations for each tortoise. The project will employ two strategies for translocating tortoises, depending on the initial capture location of each animal.

1. **Short-distance Relocations:** Tortoises found within 500 meters of the solar site fenceline or within the gen-tie construction area would be relocated to areas immediately outside of the project's temporary exclusion fencing or outside of harm's way in the vicinity of the gen-tie ROW. Following the completion of construction, the exclusion fencing would be removed; the permanent site fencing would be permeable to desert tortoises and existing vegetation on the project site is expected to be left relatively intact during construction and operation of the project. Therefore, the short-distance translocation strategy is designed to allow tortoises to freely re-occupy the site following construction.

2. **Indirect Translocation or return to project site:** Tortoises found in the interior of the solar site fenceline (>500 meters from the exclusion fence) would be moved to temporary pens for the duration of construction and may be returned to the solar facility interior (as close to the original capture location as possible) as soon as construction activities are complete. Penned tortoises may be translocated to an alternate suitable location following construction, as determined on a case-by-case basis through consultation with the USFWS.

- An authorized biologist will perform health assessments and draw blood samples for each tortoise to be relocated. Blood testing will determine whether any desert tortoise suffer from upper respiratory tract disease (URTD).

- Tortoises will be temporarily tagged with combination global positioning system (GPS)/radio-transmitter tags so that the tortoise can be retrieved and handled as directed by the USFWS if the results of blood work indicate that a tortoise is infected with URTD.

- When determining a release location for an individual tortoise, release site preference will be to find a like-for-like shelter resource. Every attempt will be made to find similar cover sites and habitat to that at the location of each individual on the Project site, otherwise all translocatees shall be released at the most appropriate and available unoccupied shelter sites (e.g., soil burrows, caliche caves, rock caves, etc.). Because of the impermanent nature of soil burrows and cave availability, prior to submitting the final Disposition Plan and determining exact areas of release, potential release sites will be re-investigated for existing burrows and caliche or rock caves that can be used for shelter sites. Known active/inactive tortoise burrows discovered during the surveys would be re-investigated for this purpose. If insufficient shelter sites exist in an area to be used for translocation, the Applicant shall coordinate with the agencies to determine the most appropriate course of action, such as reviewing an alternate release site, modifying/improving existing burrows and partial burrows, or artificially creating burrows per USFWS protocols, prior to translocation. The number of artificial burrows per translocated tortoise will be included in the TRP/Disposition Plan, as feasible, and may include more than one burrow per tortoise to increase translocation success (i.e. tortoises remaining within their release locations). The disposition of relocated tortoises will be evaluated and reported on following the Terms and Conditions of the BO.

- If a tortoise voids its bladder while being handled, it will be given the opportunity to rehydrate before release. Tortoises will be offered fluids by soaking in a shallow bath, or an authorized desert tortoise biologist will administer nasal-oral fluid or injectable epicoelomic fluids. Any tortoise hydration support beyond offering water or shallow soaking would only be provided by an authorized biologist who has received advanced training in health assessments and been specifically approved by USFWS for these procedures.

7. **Biological Sample Archiving.** Any samples collected during desert tortoise health assessments that are not used for tests would be archived with UCLA, and appropriate fees would be paid by the Applicant. The fee would be assessed at the time of sample collection and adjusted for inflation using the Bureau of Labor Statistics' consumer price index. As of October 2020, the archiving fee amount was $3,000.

8. **Integrated Weed Management Plan**. Prior to construction, an Integrated Weed Management Plan will be developed that includes measures designed to reduce the propagation and spread of designated noxious weeds, undesirable plants, and invasive plant species, or as determined by the cooperating or reviewing agencies (BIA, BLM, NDOW, etc.). Measures in the plan will include, but are not limited to the following:

- Areas with current weeds will be mapped. Topsoil with the presence of weeds will not be salvaged and reused elsewhere in the Project. The topsoil from such areas will be disposed of properly.

- Inspect heavy equipment for weed seeds before they enter the Project area. Require that such equipment be cleaned first to remove weed seeds before being allowed entry. Clean equipment that has been used in weed infested areas before moving it to another area.

- Any straw or hay wattles are used for erosion control must be certified weed free.

9. **WEAP.** A WEAP will be presented to all personnel onsite during construction. This program will contain information concerning the biology and distribution of the desert tortoise, desert tortoise activity patterns, and its legal status and occurrence in the proposed Project area. The program will also discuss the definition of "take" and its associated penalties, measures designed to minimize the effects of construction activities, the means by which employees limit impacts, and reporting requirements to be implemented when tortoises are encountered. Personnel will be instructed to check under vehicles before moving them as tortoises often seek shelter under parked vehicles. Personnel will also be instructed on the required procedures if a desert tortoise is encountered within the proposed Project area. WEAP training will be mandatory, as such, workers will be required to sign in and wear a sticker on their hardhat to signify that they have received the training and agree to comply.

10. **Access roads.** Construction access will be limited to the Project area and established access roads. Vehicle travel off established internal site access roads will be minimized as practicable.

11. **Speed limits and signage.** Until the desert tortoise fence has been constructed, a speed limit of 15 miles per hour will be maintained during the periods of highest tortoise activity (March 1 through November 1) and a limit of 25 mph during periods of lower tortoise activity. This will reduce

dust and allow for observation of tortoises in the road. Speed-limit and caution signs will be installed along access roads and service roads. After the tortoise proof fence is installed and the tortoise clearance surveys are complete, speed limits within the fenced and cleared areas will be established by the construction contractor and based on surface conditions and safety considerations and remain with limits established by USFWS in the BO.

12. **Trash and litter control.** Trash and food items will be disposed properly in predator proof containers with resealing lids. Trash will be emptied and removed from the Project site on a periodic basis as they become full. Trash removal reduces the attractiveness of the area to opportunistic predators such as ravens, coyotes, and foxes. Measures to reduce the subsidy of ravens and other avian predators/scavengers are discussed in greater detail in the Raven Control Plan (**Appendix K** of the DEIS).

13. **Raptor control.** The applicant will inspect structures annually for nesting ravens and other predatory birds and report observations of nests to the USFWS and BIA. Transmission line support structures and other facility structures will be designed to discourage their use by raptors for perching or nesting (e.g., by use of anti-perching devices) in accordance with the most current APLIC guidelines (APLIC 2006, 2012). In addition to increasing desert tortoise protection, following these guidelines during transmission line construction will reduce the possibility of avian electrocution and other hazards.

14. **Overnight hazards.** No overnight hazards to desert tortoises (e.g., auger holes, trenches, pits, or other steep-sided depressions) will be left unfenced or uncovered; such hazards will be eliminated each day prior to the work crew and monitoring biologists leaving the site. All excavations will be inspected for trapped desert tortoises at the beginning, middle, and end of the workday, at a minimum, but will also be continuously monitored by a biological monitor or authorized biologist. Should a tortoise become entrapped, the authorized biologist will remove it immediately.

When outside of the fenced areas of the Project site, Project personnel will not move construction pipes greater than 3 inches in diameter if they are stored less than 8 inches above the ground until they have inspected the pipes to determine the presence or absence of desert tortoises. As an alternative, the Applicant may cap all such structures before storing them outside of the fenced area.

15. **Blasting.** If blasting is required in desert tortoise habitat, detonation will only occur after the area has been surveyed and cleared by an authorized desert tortoise biologist no more than 24 hours prior. A 200-foot radius buffer area around the blasting site will be surveyed and all desert tortoises above ground within this 200-foot buffer of the blasting site will be moved 500 feet from the blasting site, placed in unoccupied burrow, and temporarily penned to prevent tortoises that have been temporarily relocated from returning to the site. Tortoises located outside of the immediate blast zone and that are within burrows will be left in their burrows. All burrows, regardless of occupied status, will be stuffed with newspapers, flagged, and location recorded using a global positioning system (GPS) unit. Immediately after blasting, newspaper and flagging will be removed. If a burrow or cover site has collapsed that could be occupied, it will be excavated to ensure that no tortoises have been buried and are in danger of suffocation. Tortoises removed from the blast zone will be returned to their burrow if it is intact or placed in a similar unoccupied or constructed burrow.

16. **Penning.** Tortoises may be held *in-* or *ex-situ* (e.g., if temperatures do not allow for translocation, or if tortoises do not pass the health assessment) for a maximum of 12 months.

Previously constructed and approved enclosure pens are present adjacent to the Project site and would be used if any quarantine is necessary. Quarantine is not the preferred option for tortoises to be translocated and would only be used as necessary, in coordination with USFWS. This penning is not the same as the temporary penning described in the blasting measure.

17. **Stormwater Pollution Prevention Plan.** The applicant will oversee the establishment and functionality of sediment control devices as outlined in the stormwater pollution prevention plan.

18. **Tortoise Encounters During Construction.** If a tortoise is injured as a direct or indirect result of Project construction activities, it shall be immediately transported to a veterinarian or wildlife rehabilitation facility and reported within 24 hours or the next workday to the Service. Any Project construction-related activity that may endanger a desert tortoise shall cease in the area if a desert tortoise is encountered on the Project site. Project construction activities may resume after an Authorized Biologist removes the desert tortoise from danger or after the desert tortoise has moved to a safe area.

2.6.2.2 Operations and Maintenance Minimization Measures

The following minimization measures will be implemented during O&M of the Proposed Action to reduce effects on the desert tortoise and other species:

19. **WEAP Training.** WEAP training will be required for all O&M staff for the duration of the Project. In addition to an overview of minimization measures, the training will include specific BMPs designed to reduce effects to the desert tortoise. All Project personnel will check under vehicles or equipment before moving them. If Project personnel encounter a desert tortoise, they will avoid the tortoise. The desert tortoise will be allowed to move a safe distance away prior to moving the vehicle

20. **Biological Monitoring.** A biological monitor(s) will be present during ground-disturbing and/or off-road O&M activities outside of the fenced solar facility to ensure that no tortoises are in harm's way. Tortoises found above ground during O&M activities will be avoided or moved by an authorized biologist, if necessary. Pre-maintenance clearance surveys followed by temporary exclusionary fencing also will be required if the maintenance action requires ground or vegetation disturbance. A biological monitor will flag the boundaries of areas where activities would need to be restricted to protect tortoises and their habitat. Restricted areas will be monitored to ensure their protection during construction.

21. **Speed Limits.** Speed limits within the project area, along transmission line routes, and access roads will be restricted to less than 25 mph during O&M. Speed limits in the solar facility will be restricted to 15 mph during O&M.

22. **Trash and Litter Control and Other Predator Deterrents.** Trash and food items will be disposed properly in predator proof containers with resealing lids. Trash will be emptied and removed from the Project site on a periodic basis as they become full. Trash removal reduces the attractiveness of the area to opportunistic predators such as ravens, coyotes, and foxes. To reduce attractants for birds, open containers that may collect rainwater will be removed or stored in a secure or covered location.

2.6.2.3 Decommissioning Minimization Measures

The same minimization measures used for construction will be used for decommissioning.

2.6.3 Compensatory Mitigation

The applicant will pay the following required compensatory mitigation requirement:

23. **Habitat Compensation.** Prior to surface disturbance activities within desert tortoise habitat, the Project proponent will pay a one-time remuneration fee (per acre of proposed disturbance). The remuneration fees will be submitted to the account that USFWS designates in the BO. The compensation for habitat loss under Section 7 of the Endangered Species Act (ESA) is an annually adjusted rate, currently $923/acre (subject to change annually on March 1).

24. **Habitat Use Study.** The Project proponent will work with the University of Nevada, Las Vegas (UNLV), U.S. Geological Survey (USGS), or other agency to design and implement a 2-3-year study to compare on-site and off-site desert vegetation and climate (e.g., annual and perennial plant growth and cover, ambient temperature) to address metrics of habitat change, including how desert tortoises use the vegetation on site for forage and cover. Results from tortoise monitoring as approved in the Project's Desert Tortoise Translocation Plan (in draft) would inform the tortoise use portion of this study.

3 ACTION AREA AND EXISTING CONDITIONS

3.1 Action Area

Section 7 (a)(2) of the ESA defines the "Action Area" as the areas to be affected directly or indirectly by the federal action. For this Project, the Action Area is defined as 1) the up to 2,600 acres of direct impacts within the lease study area, 2) the approximately 34 miles of ROWs (approximately 98 acres) for the collector line and access roads, and 3) the area of indirect impacts, or recipient areas for short- and long-distance tortoise translocations (the fenceline encompassing up to 2,600 acres, plus the 2,641-acre recipient site, plus a 1.5 km buffer, 9,551-acre recipient site buffer)(**Figure 3-1**).

The Action Area is located within the Mojave Desert approximately 20 miles north of Las Vegas, Nevada, largely within the Moapa River Indian Reservation. The Mojave Desert is cooler and wetter than the Sonoran Desert to the south and warmer and drier than the high-elevation Great Basin Desert to the north (Brown 1994).

The Mojave Desert receives less than 13 inches (254 mm) of rain a year and is generally between 3,000 and 6,000 feet (910 and 1,800 m) in elevation. The Mojave Desert is an area with temperature extremes and four distinct seasons. Winter months bring temperatures dipping to below 20°F (-7°C) on valley floors, and below 0°F (-18°C) at higher elevations. Storms moving from the Pacific Northwest can bring rain and snow across the region — more often, the rain shadow created by the Sierra Nevada as well as mountain ranges within the desert such as the Spring Mountains result in storms that bring only clouds and wind. In longer periods between storm systems, winter temperatures in valleys can approach 80°F (27°C).

The Mojave Desert occupies portions of southeastern California, southern Nevada, southwestern Utah and northwestern Arizona. The Mojave Desert region, and the area surrounding the Action Area specifically, displays typical basin and range topography.

3.2 Habitat and Vegetation

Land cover types in the study area were identified using the Southwest Regional GAP Analysis Project data (Lowry et al. 2005; USGS 2005), which uses satellite imagery to delineate land cover types (vegetation communities). Vegetation in the study area is primarily composed of Sonoran-Mojave Creosotebush-White Bursage Desert Scrub (creosotebush scrub), while North American Warm Desert Wash (desert wash), Sonoran-Mojave Mixed Salt Desert Scrub (salt scrub), Invasive Southwest Riparian Woodland and Shrubland, and North American Warm Desert Pavement account for the remainder of the vegetation in the study area. Disturbed areas, both within and adjacent to the Action Area, are associated with multiple dirt roads and less impacted offroad vehicle trails, adjacent railroad and interstate highway (to the east) and adjacent transmission line and natural gas line corridors (to the north and west) and substations. A very small area of developed land (dirt access road) is also present. **Table 3-1** lists the acreages of the various vegetative cover types occurring within the Project area.

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Eagle Shadow Mountain Substation

Crystal Substation

15

40

Project Components

- Collector Lines
- Existing Access
- New Access
- Lease Area
- Solar Panel Installation Area
- Laydown Yard

General Features

- Existing Substation
- Interstate
- Major Highway
- Railroad
- Designated Utility Corridor
- Recipient Site - Release Zone
- Recipient Site - Buffer

0 0.25 0.5 0.75 1

Miles

North American Datum 1983
State Plane Nevada East Feet

SOUTHERN BIGHORN SOLAR I PROJECT

FIGURE 3-1
ACTION AREA

Map Extent: Clark County, Nevada

Date: 09-14-20 | Author: rnc

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Table 3-1

Vegetative Covertypes within the Project Area Solar Site and ROWs

Project Component	Vegetation Covertype	Acreage
Solar Site	Sonoran-Mojave Creosotebush-White Bursage Desert Scrub	2,367
	North American Warm Desert Wash	223
	Invasive Southwest Riparian Woodland and Shrubland	10
Existing and New Access Road ROWs	Sonoran-Mojave Creosotebush-White Bursage Desert Scrub	50
	North American Warm Desert Wash	14
	Sonora-Mojave Mixed Salt Desert Scrub	<1
	North American Warm Desert Pavement	<1
	Developed, Medium - High Intensity	<1
Collector Lines	Sonoran-Mojave Creosotebush-White Bursage Desert Scrub	28
	North American Warm Desert Wash	5
	PROJECT AREA TOTAL	2,697

3.2.1 Sonoran-Mojave Creosotebush-White Bursage Desert Scrub

Creosotebush scrub is typical of the Mojave Desert and is the most abundant vegetation community in the region and within the Action Area. Creosotebush scrub occurs on well-drained sandy flats and bajadas from 150 to 1500 meters elevation in Nevada. Its range extends from the Colorado River on the south to Pahranagat Valley on the north (Wildlife Action Plan Team 2012). This community is typically dominated by creosotebush and white bursage, which can be sparse to moderately dense (2-50 percent cover). Many other shrubs, dwarf-shrubs, and cacti may be present, often as a sparse understory. In southern Nevada, common species include saltbush (*Atriplex spp.*), Mormon tea (*Ephedra nevadensis*), desert wolfberry (*Lycium andersonii*), brittlebush (*Encelia farinosa*), and beavertail cactus (*Opuntia basilaris*). The herbaceous layer is typically sparse but can be abundant with ephemerals after spring rains. Herbaceous species common in the region include phacelia (*Phacelia spp*.), desert trumpet (*Erigonium inflatum*), cryptantha (*Cryptantha spp*.), and low woollygrass (*Dasyochloa pulchella*) (USGS 2005).

Creosotebush is used by many desert animals for shelter and forage. Creosotebush roots help to stabilize the soil and support burrows for a variety of reptiles and amphibians, including the desert tortoise and mammals such as the kit fox (*Vulpes macrotis*). Other animals bed in or under the bushes, and birds use them for perching and nesting (Wildlife Action Plan Team 2012).

3.2.2 North American Warm Desert Wash

This community is restricted to the small ephemeral washes within the Project area. The vegetation in desert washes is highly variable, ranging from sparse and patchy to moderately dense. It typically occurs along the banks of washes but may occur within the channel. The woody layer is typically intermittent and

relatively open and is usually dominated by shrubs and small trees such as catclaw (*Senegalia greggii*) and desert willow (*Chilopsis linearis*) (USGS 2005). In southern Nevada, washes tend to support a higher diversity and density of cacti and yucca than the surrounding landscape. Vegetation surveys conducted for previously approved solar projects on the Reservation (BIA 2012, 2014, 2020) identified numerous cacti and yucca species including cholla (*Cylindropuntia spp.*), barrel cactus (*Ferocactus cylindraceus*), hedgehog cactus (*Echinocereus engelmannii var. chrysocentrus*) and Mojave yucca (*Yucca schidigera*). Higher densities of big galleta grass (*Pleuraphis rigida*) are also commonly reported in washes in this region.

3.2.3 Sonoran-Mojave Mixed Salt Desert Scrub

This community is typical of saline basins in the Mojave Desert and most often occurs around the edge of playas. Vegetation is typically composed of one or more saltbush species and other halophytic (salt tolerant) plants such as iodinebush (*Allenrolfea occidentalis*), seepweed (*Suaeda spp.*), and alkali sacaton (*Sporobolus airoides*) (USGS 2005). Salt scrub vegetation is restricted to a small area in the northern portion of the SBSP II lease area.

3.2.4 North American Invasive Southwest Riparian Woodland and Shrubland

This community represents areas that are dominated by introduced woody species such as saltcedar and Russian olive (*Elaeagnus angustifolia*). Due to the lack of perennial water in the lease area, this vegetation is limited to a few small patches of saltcedar along larger drainages in the southern solar field.

3.2.5 North American Warm Desert Pavement

The Warm Desert Pavement community is composed of unvegetated to sparsely vegetated (<2 percent) landscapes. This community is common in flat, open basins where exposure to wind has developed a cover of fine to medium gravel coated with “desert varnish.” These areas are subject to extreme temperature variation and support very limited populations of desert scrub species such as creosotebush (*Larrea tridentate*) and Eastern Mojave buckwheat (*Eriogonum fasciculatum*). However, these areas may briefly experience high densities of ephemeral herbaceous vegetation following seasonal precipitation events.

3.3 Wildlife

Species observed in the Action Area during biological surveys for nearby projects on the reservation included birds, mammals and a variety of reptiles. Commonly observed avian species include: black-throated sparrow (*Amphispiza bilineata*), ash-throated flycatcher (*Myiarchus cinerascens*), black-tailed gnatcatcher (*Polioptila melanura*), loggerhead shrike (*Lanius ludovicianus),* common raven (*Corvus corax*), burrowing owl (*Athene cuniclaria*), red tailed-hawk (*Buteo jamaicensis*) and lesser nighthawk (*Chordeiles* sp.) (Newfields 2018a, 2018b). Small mammal residents include kangaroo rats (*Dipodomys spp.*), pack rats (*Neotoma cinerea*) and white-tailed antelope squirrels (*Ammospermophilus leucurus*). Common larger mammals may include coyotes (*Canis latrans*), kit foxes (*Vulpes macrotis*), and black-tailed jackrabbits (*Lepus californicus*). Reptiles include western whiptail lizards (*Aspidoscelis tigris*), side-blotched lizards (*Uta stansburiana*), horned lizard (*Phrynosoma* sp.), desert iguana (*Dipsosaurus dorsalis*), bull snake (*Pituophis catenifer sayi*), coachwhip (*Masticophis flagellum*) and desert tortoise.

3.4 Ground Water Resources

The Proposed Action is in the Colorado River Basin Region of Nevada’s Hydrographic Regions. The Colorado River Basin is one of the larger hydrographic regions in Nevada, covering 5,612 square miles and

includes 27 hydrographic areas. The Action Area is located in and around the area called Arrow Canyon Range Cell. The hydrogeology of the Arrow Canyon Range Cell is recognized as unique yet poorly understood (Mifflin and Associates 2001). Seven groundwater management basins are superimposed on the Arrow Canyon Range cell. The Arrow Canyon Range Cell is composed of a series of north-south trending structural blocks related to extensional faulting that are almost entirely composed of Paleozoic carbonate rock (BIA 2012). The Action Area is located within the California Wash hydrographic basin, which is an unconsolidated sand and gravel aquifer.

The basin is a westward-thickening section of Paleozoic carbonate rocks, in part unconformably overlain by generally fine-grained sediments of the Muddy Creek Formation (Longwell et al. 1965). The carbonate-rock terrain that constitutes the Arrow Canyon Range Cell incorporates both recharge areas and one major spring discharged area and is bounded by generally less permeable basin or bedrock lithologies. The California Wash Basin around the Action Area is around 5,000 feet thick (BIA 2012). Regional patterns of precipitation combined with terrain elevation results in the highest mountain ranges receiving the majority of precipitation that becomes recharge. The carbonate terrain is efficient in retaining a relatively high percentage of precipitation as recharge.

Groundwater data from several Reservation monitoring and test wells in the vicinity of the Action Area indicate the static water level ranges in depth from 354 to 526 feet below the surface and the wells yielding over 1,000 gallons per minute (gpm; BIA 2012). Pump and step-drawdown testing of the carbonate aquifer yielded a range of transmissivity of 50,000 to 100,000 ft./day, hydraulic conductivity of 20 ft./day and specific yield (Sy) of 0.03 to 0.008 (BIA 2012).

4 DESCRIPTION OF SPECIES

Only one federally listed species under the ESA was documented within or near the Project: the Mojave desert tortoise. **Section 4.2** lists details of the survey protocol and the results. Other species considered for analysis are described in **Section 4.1**.

No Designated Critical Habitat for any listed plant or animal species occurs within the Action Area, though critical habitat units for the desert tortoise occur approximately 8 miles west of the Action Area on the west side of the Arrow Canyon Range.

4.1 Federally Listed Bird Species

4.1.1 Yellow-billed Cuckoo

On October 3, 2014, the yellow-billed cuckoo (*Coccyzus americanus*) was listed as threatened under the ESA (79 FR 59992; USFWS 2014). Critical habitat has not yet been designated but was proposed on February 27, 2020; the nearest proposed critical habitat for this species, if designated, would be over 100 miles south of the project. The yellow-billed cuckoo has always been rare in Nevada. There are still small areas of suitable habitat within the state, with documented breeding occurring very rarely in Southern Nevada. Yellow-billed cuckoos may still utilize remnant habitats present within the state during migration.

Based on historic accounts, the species was widespread and locally common in California and Arizona, locally common in a few river reaches in New Mexico, locally common in Oregon and Washington, and locally uncommon in scattered drainages of the arid and semiarid portions of western Colorado, western Wyoming, Idaho, Nevada, and Utah. The scattered cottonwoods on the Colorado River tributaries (Virgin, Muddy, and Pahranagat) are the last places in Nevada where the yellow-billed cuckoo can potentially occur. The only known nesting sites in Nevada for the yellow- billed cuckoo are at Warm Springs Ranch Natural Area along the Muddy River in the Moapa Valley (SNWA 2019), approximately 11 miles north of the Action Area. While two individual cuckoos were detected during 2019 surveys at Warm Springs Natural Area, there is no suitable habitat for the species in the Action Area.

4.1.2 Yuma (Ridgway's) Clapper Rail

The Yuma clapper rail (*Rallus longirostris yumanensis*) was listed as an endangered species on March 11, 1967 (32 FR 4001). The Recovery Plan was finalized in 1983 and portions of the recovery action plan were initiated over the ensuing years. The Yuma clapper rail is one of the smaller subspecies of clapper rail, with adult males standing eight inches tall and weighing 266.8 grams on average (Todd 1986). Females are slightly smaller. Adult Yuma clapper rails of both sexes are similar in plumage; they possess a long, slender bill and long legs and toes compared to body size (Todd 1986).

The present range of the Yuma clapper rail in the U.S. includes portions of Arizona, California, and Nevada. The Yuma clapper rail lives in freshwater marshes dominated by cattail (*Typha* sp.) and bulrush (*Scirpus* ssp.) with a mix of riparian tree and shrub species (*Salix exigua*, *S. gooddingii*, *Tamarix* sp., *Tessaria serica*, and *Baccaris* sp.) along the shoreline of the marsh (Eddleman 1989). This species is known to occur along the Muddy River within the Overton Wildlife Management Area approximately 15 miles east of the Action Area. No suitable habitat for this species occurs within the Action Area.

4.1.3 Southwestern Willow Flycatcher

The southwestern willow flycatcher (*Empidonax traillii extimus)* was listed by the USFWS as an endangered species within its entire range on February 27, 1995 (FR 60: 10693-10715). Critical habitat for the species was originally established in 1997 (FR 62: 39129-39147) but subsequently vacated and incidental protection provided along the Virgin River and its 100-year floodplain from the Arizona/Nevada border to Halfway Wash in Nevada (FR 65: 4140-4156).

Critical habitat was again proposed on October 12, 2004 (FR 69: 60706-60736), redefined and re-instituted in 2005 (FR 70: 60886-61009; USFWS 1997), and designated in 2013 (USFWS 2013). Critical habitat for the southwestern willow flycatcher in Nevada is currently limited to portions of the Virgin River above its confluence with the Muddy River (FR 70: 60886-61 009).

For nesting, southwestern willow flycatchers require dense riparian habitats with microclimatic conditions dictated by the local surroundings. Saturated soils, standing water, or nearby streams, pools, or cienegas are a component of nesting habitat that also influences the microclimate and density of the vegetation component. No suitable riparian or microhabitat conditions exist within the Action Area. The closest known breeding habitat for this species is located along the Muddy River, at Warm Springs Ranch, approximately 11 miles north of the Action Area. During 2019 surveys, eight southwestern willow flycatcher territories were identified, including two confirmed pairs, three unpaired residents and one non-resident. There is no suitable habitat for the species in the Action Area.

4.2 Moapa Dace

The Moapa dace was listed as an endangered species under the ESA on March 11, 1967 (32 Federal Register [FR] 4001). Since the Moapa dace represents a monotypic genus, this species was assigned a recovery priority of 1 (highest ranking) by the USFWS in 1995. The original recovery plan for this species was prepared in 1983 and subsequently revised in 1995.

4.2.1 Distribution and Life History

The Moapa dace is endemic to and occurs in the Muddy River system (and associated thermal spring systems). Specifically, it occurs in the Warm Springs area which encompasses 10 thermal spring provinces that form the Muddy River (roughly 10 miles north of the proposed project). Moapa dace likely inhabited 25 springs and approximately 16 kilometers of the upper Muddy River (Ono et al. 1983). Historically, the Muddy River was 48.4 kilometers long; however, in 1935, with the completion of the Hoover Dam, Lake Mead flooded the lower 8 kilometers of the river, rendering it unsuitable for Moapa dace. Previous surveys found adult Moapa dace occurring in low numbers in restricted portions of 3 springs and less than 2 miles of spring outflow and river in the Warm Springs area (USFWS 1983).

The Moapa dace inhabits a variety of habitats throughout its several life stages. As individuals age, they occupy habitats with increasing flow velocities such that larval dace are apparently limited to slackwater portions of the upper reaches of tributaries of the Moapa River, whereas adults can be found in the river's mainstem. The species prefers warmer temperatures (67-89.6°F); thus, cooler temperatures in the middle portion of the Moapa River mainstem may function as a barrier to downstream movements (USFWS 1996).

The species is omnivorous; stomach contents have included beetles, moths, butterflies, true flies, leaf hoppers, true bugs, caddisflies, mayflies, damselflies, dragonflies, worms, scuds, crustaceans, snails,

filamentous algae, vascular plants, detritus and sand. The dace primarily forages on drift items but will also forage on the stream or spring substrate. The species often forages from drift stations in large groups (up to 30 individuals). These sites are often characterized by overhanging vegetation or particularly deep areas (USFWS 1996).

4.2.2 Threats to the Species

Threats to the Moapa dace include habitat loss and alteration, introduction of non-native species, and parasites. Habitat loss and alteration has been ongoing in the Warm Springs areas for the purposes of recreational, industrial and municipal projects. Several headwater springs were completely channelized or diverted for use as swimming pools. Irrigation for agricultural purposes historically had impacts on headwater springs in the Warm Springs area, though agricultural activity in the area has declined.

Moapa dace persist within several warm springs and associated springbrooks that have been altered greatly by humans. Downstream habitats, where adult dace from different spring systems mixed historically, are now infested with exotic predatory fish. In many cases infested habitats are intentionally blocked from upstream areas by fish barriers built to prevent the spread of exotic fish. Specifically, a fish barrier (known as the refuge barrier) and a water diversion exist upstream of the Project's gen-tie crossing. The resulting fragmented population structure threatens the dace's genetic and demographic health, although barriers must be maintained until the threats of exotic fish are eliminated (USFWS 2009a).

4.2.3 Critical Habitat

There is no designated critical habitat for the Moapa dace.

4.3 Desert Tortoise

Desert tortoise was listed as threatened under the ESA on April 2, 1990 (USFWS 1990). A total of 6.4 million acres of Critical Habitat was designated in 1994 (USFWS 1994). The 1994 Recovery Plan described a strategy for recovering the desert tortoise, which included the identification of six recovery units, recommendations for a system of Desert Wildlife Management Areas within the recovery units, and development and implementation of specific recovery actions. Within those six recovery units, Desert Wildlife Management Areas (DWMAs) were identified, where populations of tortoises facing similar threats would be managed with the same strategies.

The Action Area is within the Northeastern Mojave Recovery Unit, which encompasses almost 5 million acres extending from southwestern Utah/northwestern Arizona (northern boundary) to Las Vegas/Las Vegas Wash (southern boundary). This unit includes the Beaver Dam Slope, Gold Butte-Pakoon, and Mormon Mesa Critical Habitat Units.

Characteristically, tortoises in this unit are active in late summer and early autumn in addition to spring, reflecting the fact that this region receives up to about 40 percent of its annual rainfall in summer and supports two distinct annual floras on which tortoises can forage (USFWS 2019c). Desert tortoise also feed on cacti, perennial grasses, and herbaceous perennials. Desert tortoises may den together in caliche caves in bajadas, washes, or caves in sandstone rock outcrops (USFWS 2011, USFWS 2019c).

If basic habitat requirements are met, the desert tortoise can survive and reproduce within the varied vegetation communities of the Mojave region (USFWS 1994). These requirements include sufficient suitable plants for forage and cover, suitable substrates for burrow and nest sites, and freedom from disturbance. Throughout most of the Mojave region, the desert tortoise occurs primarily on flats and

bajadas with soils ranging from sand to sandy-gravel characterized by scattered shrubs and abundant inter-shrub space for herbaceous plant growth. Desert tortoises are also found on rocky terrain and slopes.

4.3.1 Distribution and Abundance in the Action Area

4.3.1.1 Field Surveys

To assess the status of the desert tortoise in the Action Area, field surveys were conducted in April 2019. Team members included more than one biologist previously approved by USFWS as an Authorized Biologist on multiple prior projects. To be granted authorized status, USFWS requires that the biologist has thorough knowledge of desert tortoise behavior, natural history, and ecology, and demonstrates substantial field experience and training to successfully:

- Handle desert tortoises
- Excavate burrows to locate desert tortoise or eggs
- Relocate desert tortoises
- Reconstruct desert tortoise burrows
- Unearth and relocate desert tortoise eggs
- Locate, identify, and record all forms of desert tortoise sign; and
- Follow USFWS-approved protocols.

The lease study area was surveyed in accordance with current USFWS protocols (USFWS 2019b). Biologists walked 10-meter (33-foot) wide parallel pedestrian transects. USFWS refers to this methodology as "100 percent coverage." The lease study area was 2,599 acres in size. The objective of the field survey is to determine presence or absence of desert tortoises, estimate the number of tortoises (abundance) and assess the distribution of tortoises within the Action Area (USFWS 2019b).

Observations of tortoise sign (live tortoises, carcasses, shell, bones, scutes, scat, burrows, pallets, tracks, egg shell fragments, etc.) were recorded in the field.

4.3.1.2 Field Survey Results

Data collected within the survey area were analyzed using the USFWS 2019 Protocol equation to determine the estimated number of tortoises within the Action Area. This method uses the number of tortoises observed above ground, the probability that a tortoise is above ground, the probability of detecting a tortoise if above ground, and the size of the area surveyed. Calculations of desert tortoise populations are based only on the number of adult tortoises (≥180 mm MCL) observed during surveys. The equation is illustrated below.

$$\left(\begin{array}{c}\text{Estimated number of tortoises}\\ \text{within action area}\end{array}\right) = \frac{\left(\begin{array}{c}\text{Number of tortoises}\\ \text{observed above ground}\end{array}\right)}{\left(\begin{array}{c}\text{Probability that}\\ \text{a tortoise is}\\ \text{above ground } (P_a)\end{array}\right)\left(\begin{array}{c}\text{Probability of}\\ \text{detecting a tortoise,}\\ \text{if above ground } (P_d)\end{array}\right)}\left(\frac{\text{Size of action area}}{\text{Size of area surveyed}}\right)$$

A total of 778 transects of differing lengths were walked over the course of the survey to achieve 100% coverage of the survey area, totaling approximately 1,052 kilometers of transect length. Desert tortoise and desert tortoise sign were observed. A total of 30 adult desert tortoises (≥180 mm MCL) and 2 juveniles were observed over the course of the surveys (**Table 4-1** and **Figure 4-1**). Desert tortoise sign (scat, carcasses/shell fragments, tracks and burrows) were observed throughout the

survey area. The estimated number of adult tortoises within the Action Area was calculated to be 60, with a 95% confidence interval of approximately 41 to 88 adult tortoises during the 2019 surveys.

Table 4-1

TORTOISE SIGN FOUND IN PROJECT AREA

	Class 1 (Used today)	Class 2 (Used this week)	Class 3 (Used this season)	Class 4 (Old Requires Excavation)	Class 5 (Old Collapsed)	Total
Burrow	47	123	141	61	20	**392**
Carcass	3	2	5	2	11	**23**
Pallet	1	12	21	13	8	**55**
Scat	13	21	13	4	1	**52**
Other (Eggs, Mating Circle, Etc.)	6	4	1	0	1	**12**

Source: Newfields 2019

[1] Burrow Class Definitions: 1. currently active, with tortoise or recent tortoise sign. 2. good condition, definitely tortoise; no evidence of recent use. 3. deteriorated condition; definitely tortoise. 4. good condition; possibly tortoise. 5. deteriorated condition; possibly tortoise.

[2] Shell Remains: 1. fresh or putrid. 2. normal color; scutes adhere to bone. 3. scutes peeling off bone. 4. shell bone is falling apart; growth rings on scutes are peeling. 5. disarticulated and scattered.

[3] Scat: 1. wet (not from rain or dew) or freshly dried; obvious odor. 2. dried with glaze; some odor; dark brown. 3. dried; no glaze or odor; signs of bleaching (light brown), tightly packed material. 4. dried; light brown to pale yellow, loose material; scaly appearance. 5. bleached, or consisting only of plant fiber.

These results are generally consistent with USFWS recent findings presented in the Revised Recovery Plan for the Mojave Population of the Desert Tortoise (2011). The NE Mojave Recovery Unit was found to be the only unit that increased in abundance from 2004 through 2014 (Allison and McLuckie 2018).

Eagle Shadow Mountain Substation

15

40

Legend

Project Components

- Collector Lines
- Existing Access
- New Access
- Lease Area

General Features

- Existing Substation
- Interstate
- Major Highway
- Railroad
- Designated Utility Corridor

Survey Results

- Live Desert Tortoise Observation - Adult
- Live Desert Tortoise Observation - Juvenile

0 0.25 0.5 0.75 1

Miles

North American Datum 1983
State Plane Nevada East Feet

SOUTHERN BIGHORN SOLAR I PROJECT

FIGURE 4-1
Desert Tortoise Observations

Map Extent: Clark County, Nevada

Date: 09-11-20 | Author: rnc

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4.3.2 Factors That May Affect the Desert Tortoise in the Action Area

4.3.2.1 Upper Respiratory Tract Disease

Upper respiratory track disease (URTD) was discovered in 1990 and is currently a major cause of mortality in the western Mojave Desert population. Habitat degradation, poor nutrition, and drought have increased the desert tortoises' susceptibility to this disease (USFWS 1994). It is thought that URTD is transmitted between desert tortoise populations when desert tortoises are captured as pets, then subsequently released.

4.3.2.2 General Anthropogenic Factors

The factors causing the decline of the desert tortoise are primarily human related. These factors include collection of desert tortoises for pets, food, and commercial trade; collision with vehicles on roads and highways; mortality from gunshots; predation; and off-road vehicle (ORV) travel cross-country or on trails. Predation by the common raven is severe on younger age classes of desert tortoise. The Breeding Bird Survey (BBS) data from 1968 to 2004 indicated increases in the raven populations of more than 700 percent in the west Mojave Desert and more than 70 percent in the East Mojave Desert (DOI 2008). Increased food supplies from road kills, landfills, trash, garbage dumps, agricultural development and new perch and nest sites all contribute to the increased population of ravens. Berry (1990) speculated that raven predation has resulted in such high juvenile desert tortoise loss in some portions of the Mojave that recruitment of juveniles into the adult population has been halted. Within or near the Project area, previous disturbance from OHV travel, weeds and ground disturbance from multiple linear facilities such as a substation, pipelines and transmission lines were observed.

4.3.2.3 Connectivity

Habitat connectivity is important to maintain desert tortoise access to required resources (e.g., water or burrow sites), minimize energetic expenditures to access resources, limit risk of travel- related injury or death by minimizing the need to move through risky or uninhabitable areas, maintain social behaviors and gene flow, and enable movement with a change in environmental conditions, such as climate shift (Webster et al. 2002; Lowe and Allendorf 2010). In a review of numerous definitions of habitat connectivity published in the scientific literature, Kindlmann and Burel (2008) defined habitat connectivity simply as “the ease with which individuals can move about within a landscape.” This definition encompasses both structural (based entirely on landscape configuration independent of the animal) and functional connectivity (including animal responses to landscape features). It is important to note that natural barriers—such as rivers or mountains—often can limit habitat connectivity. In addition to natural barriers, human structures including housing developments, roads, farmland, and fences have increasingly reduced habitat connectivity (Fahrig 2003). This reduced connectivity has resulted from both habitat destruction and fragmentation, the division of habitat into smaller, discontinuous units.

Factors in assessing the potential effects of the Project on desert tortoise habitat connectivity include:

- Natural barriers to tortoise movement
- Anthropogenic barriers to tortoise movement
- Habitat fragmentation

Genetic connectivity can be defined as the degree to which gene flow is maintained between populations. For gene flow to occur across an area, populations of desert tortoises need to be connected by areas of suitable habitat that support sustainable numbers of reproductive individuals. Natural barriers, such as mountain ranges and rivers, reduce genetic connectivity and are thought to have partly resulted in some

broad-scale genetic differentiation among tortoise populations within the Mojave Desert (Averill-Murray et al. 2013). In the Action Area, there are currently no natural barriers that would affect genetic connectivity from north or west. Tortoise movement to the south may be hindered by the existing solar project and to the east may be limited by Interstate 15 and a railroad. Genetic connectivity is currently maintained as tortoises can exchange genetic material with populations in suitable habitat areas north and south of the Project area.

4.3.2.4 Habitat Fragmentation

The Proposed Project is not expected to substantively contribute to habitat fragmentation because it would be built with a raised fence that would allow tortoises to re-inhabit and pass through the solar site during operations.

4.3.3 Desert Tortoise Designated Critical Habitat

In 1990, USFWS listed the desert tortoise as threatened over 30 percent of its geographic range. In response to this listing, the *Desert Tortoise (Mojave Population) Recovery Plan* was created to aid in the preservation of the species. In this plan, six population units termed "recovery units," were identified using available data on genetic variability, morphology, ecosystem types, and population behavior.

Within these recovery units, 14 desert wildlife management areas (DWMA) were identified as areas where tortoise populations could be managed for recovery. The guidelines used to delineate the 14 DWMAs were used by USFWS to designate federally protected desert tortoise "Critical Habitat" in 1994. Of the original 22,616 to 27,407 square kilometers recommended for protection in the 14 DWMAs, 26,087 square kilometers became Designated Critical Habitat (DCH). Primary constituent elements of DCH for the desert tortoise are those physical and biological attributes that are necessary for the long- term survival of the species. These elements were identified as: 1) sufficient space to support viable populations within each of the five Recovery Units and to provide for movement, dispersal, and gene flow; 2) sufficient quantity and quality of forage species and the proper soil conditions to provide for the growth of such species; 3) suitable substrates for burrowing, nesting, and overwintering; 4) burrows, caliche caves, and other shelter sites; 5) sufficient vegetation for shelter from temperature extremes and predators; and, 6) habitat protected from disturbance and human-caused mortality (USFWS 2011).

The Project area is not located within USFWS desert tortoise DCH (USFWS 2019c). **Figure 4-2** depicts the nearest DCH, which is approximately 12 miles west and northwest of the proposed Project.

Moapa Town

Reid Gardner Substation

78

Moapa Valley

93

Eagle Shadow Mountain Substation

15

Moapa River Indian Reservation

Crystal Substation

40

CLARK COUNTY

North Las Vegas

North Las Vegas

Legend

Project Components

- Southern Bighorn I Lease Area

General Features

- Existing Substation
- Interstate
- Major Highway
- Railroad
- Designated Utility Corridor
- Municipal Boundary

Jurisdictional Land Ownership

- Bureau of Land Management Land
- Indian Land
- Fish and Wildlife Service
- Department of Defence
- State Lands
- National Park Service

Critical Habitat

- Desert tortoise

0 1 2 3 4 5

Miles

North American Datum 1983
State Plane Nevada East Feet

SOUTHERN BIGHORN SOLAR I PROJECT

FIGURE 4-2
DT Designated Critical Habitat

Map Extent: Clark County, Nevada

Date: 09-11-20		Author: rnc

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5 EFFECTS OF THE PROPOSED ACTION AND DETERMINATION OF EFFECTS

This section presents the potential direct, indirect, and cumulative effects of the Proposed Action on listed species. Impacts resulting from the implementation of the Proposed Action include:

- Injury of mortality of desert tortoises from construction activities;
- Temporary stress on desert tortoises from handling during relocation efforts;
- Temporary constriction of movement corridors for desert tortoises during construction;
- Disturbance from vibrations during construction that could affect tortoises near the boundary of the construction area;
- Temporary and permanent loss of desert tortoise habitat and burrows;
- Disturbance and displacement of desert tortoises during construction of the associated access roads and proposed gen-tie;
- Potential noise and lighting effects on tortoise behavior and movement;
- Introduction of weeds and invasive species within the construction area during construction and operation;
- Exposure to chemicals (herbicides, palliatives and spills from equipment);
- Potential increased raven and other predator populations resulting from perches provided by the solar structures, aboveground portions of collector lines and towers, and perimeter fencing, and human introduction of trash within or near the Action Area boundary;
- Groundwater use from the same hydrographic basin that supports the Yuma clapper rail, southwestern willow flycatcher and Moapa dace.

5.1 Federally Listed Bird Species

5.1.1 Yellow-billed Cuckoo

There is no suitable habitat in the Action Area (including proposed critical habitat), and no habitat would be removed or affected by the Proposed Action. Suitable habitat occurs approximately 11 miles north of the Project area near the Warm Springs Ranch, and individuals were observed there in 2019 (SNWA 2019). Suitable habitat also occurs east of the Action Area along the Virgin River. While few yellow-billed cuckoos are known to occur in these areas, they may use the Muddy and Virgin Rivers for migration to and from breeding habitat and for dispersal. The Proposed Project has no aboveground gen-tie (collector lines would be buried except for up to two miles of overhead where lines cross the designated BLM utility corridor) and not near the Muddy or Virgin Rivers); therefore, those individuals would not be at risk of colliding with aboveground electrical lines. While groundwater withdrawals may result in insignificant reductions in flow in the Muddy River, the magnitude of effects would be too small to affect yellow-billed cuckoo or cuckoo habitat (e.g., riparian vegetation)(see analysis in Section 5.3).

Determination

Due to the low number of yellow-billed cuckoos that occur near the Action Area and the lack of habitat in the Project area, the potential for direct mortality to this species is low. Potential risk would be

insignificant and discountable and potential indirect effects would be negligible. The Proposed Action may affect, but is not likely adversely affect, the yellow-billed cuckoo.

5.1.2 Yuma (Ridgway's) Clapper Rail

There is no suitable Yuma clapper rail habitat in the Action Area. Therefore, the potential for direct mortality to this species is low. This species is known to occur along the Muddy River within the Overton Wildlife Management Area. Critical habitat has not been designated for this species. While the nearest suitable habitat is approximately 15 miles from the Project area, rails may use the Muddy and Virgin Rivers for migration to and from breeding habitat and for dispersal but the Proposed Project has no aboveground gen-tie (collector lines would primarily be buried and not near the Muddy or Virgin Rivers); therefore, those individuals would not be at risk of colliding with aboveground electrical lines. While groundwater withdrawals may result in insignificant reductions in flow in the Muddy River, the magnitude of effects would be too small to affect Yuma clapper rail habitat (e.g., hydrophytic vegetation) (see analysis in Section 5.3).

There have been two isolated incidents involving Yuma rail near solar projects. One mortality was discovered near the solar field at a PV solar project in Riverside County, California. Field data collected in connection with that incident failed to provide evidence of any direct impact or collision with a PV module. Another Yuma clapper rail mortality was discovered at a PV solar project in Imperial County, California. In this instance too, there was no evidence of a collision with a PV module.

In response to these incidents, USFWS addressed the potential for solar projects to result in injury or mortality to Yuma clapper rail in an incidental take statement for a project in Imperial County, California. The USFWS recognized that interactions between Yuma clapper rail and PV facilities are improbable when such projects are distant from this species' habitat. The USFWS concurred with the BLM's finding that the project, located near the Colorado River in Riverside County, California, was "not likely to adversely affect" Yuma clapper rail. Similar to the ACSP Project, that project area did not include aquatic habitat for Yuma clapper rail and was not located in a flight path that would connect aquatic features. A portion of U.S. breeding populations is known to migrate annually to wintering grounds in northwest Mexico (Harrity and Conway 2020). However, we do not have information about and cannot predict the paths migrating (or dispersing) individuals may take and there is no evidence to indicate that dispersal of these species would occur in the action area.

The low number of known recorded mortalities, lack of habitat in the action area and the long distance from any known occurrences suggests the low potential for direct mortality to listed birds related to the Project. Potential direct and indirect effects posed by the Project are negligible.

While groundwater withdrawals may result in insignificant reductions in flow in the Muddy River, the magnitude of effects would be too small to affect Yuma clapper rail or its habitat (e.g., riparian vegetation)(see analysis in Section 5.3).

Determination

Due to the low number of Yuma clapper rail mortalities at PV solar facilities and the lack of habitat in or near the Action Area, the potential for direct mortality to this species is low. Potential risk would be insignificant and discountable and potential indirect effects would be negligible. The Proposed Action may affect, but is not likely adversely affect, the Yuma clapper rail.

5.1.3 Southwestern Willow Flycatcher

There is no suitable habitat in the Action Area. Therefore, the potential for direct mortality to this species is negligible. There is no designated critical habitat in the Action Area. Suitable habitat occurs approximately 11 miles north of the Action Area near the Warm Springs Ranch and potential breeding was observed there in 2019 (SNWA 2019).

While few southwestern willow flycatchers are known to occur there, they may use the Muddy River for migration to and from breeding habitat and for dispersal but the Proposed Project has no aboveground gen-tie (collector lines would be buried (except for up to two miles of overhead where lines cross the designated BLM utility corridor) and not near the Muddy or Virgin Rivers); therefore, those individuals would not be at risk of colliding with aboveground electrical lines. While groundwater withdrawals may result in insignificant reductions in flow in the Muddy River, the magnitude of effects would be too small to affect southwestern willow flycatcher or its habitat (e.g., riparian vegetation; see analysis in Section 5.3).

Determination

Due to the low number of southwestern willow flycatchers that occur near the Action Area and the lack of habitat in the Project area, the potential for direct mortality to this species is low. Potential risk would be insignificant and discountable and potential indirect effects would be negligible. The Proposed Action may affect, but is not likely adversely affect, the southwestern willow flycatcher. No proposed or designated critical habitat is within the Action Area along the Muddy River; therefore, the project would have no effect to designated critical habitat.

5.2 Desert Tortoise

5.2.1 Injury and Mortality

An estimated 60 desert tortoises are expected to occupy the Action Area (95% CI: 41-88 based on 2019 USFWS protocol calculations). Therefore, construction of the Proposed Action may result in impacts to up to 88 adult desert tortoises through injury or direct mortality of desert tortoise. Such injury or mortality could occur from vehicle strikes or other adverse interactions with project-related equipment. However, translocation of tortoises and the implementation of avoidance and minimization measures are expected to avoid all or most of these potential injuries or mortalities.

Beside the initial construction, O&M activities inside and outside the solar site could represent a source of ongoing mortality. As such, direct take of desert tortoises resulting from these activities is expected to be very low.

5.2.2 Relocation, Translocation and Handling

Temporary desert tortoise exclusion fencing would be installed prior to construction and desert tortoises would be relocated via clearance surveys before the construction phase of the Project. Relocation of desert tortoises can potentially represent take via harassment and/or mortality, as there is a possibility for tortoises to be killed or injured as a result of this process. Desert tortoises would be relocated to Tribal lands within the Action Area as described in the Project's translocation plan. It is expected that all tortoises would be captured and safely released outside the exclusion fence adjacent to the Project site.

5.2.3 Loss of Occupied Habitat

The Proposed Action includes the installation of temporary desert tortoise exclusion fencing around the solar facility, utilizing gates and cattle guards (with ramps) at ingress/egress locations. The permanent perimeter fence would be constructed inside of the exclusion fencing and would remain permeable to tortoise movements. Exclusion fencing would be removed after construction, allowing tortoises to move onto and through the site during operations, except around the substation, O&M area and BESSs, where the exclusion fencing would remain intact.

Vegetation would be cleared along access roads, at the Project substation and O&M building, at inverters, and along cable trenches. However, most native vegetation within the solar arrays would be left in place during construction. Equipment would drive and crush vegetation as needed, preserving the integrity of root balls and up to 18 inches of photosynthetic material, allowing it to regrow after construction. Tall shrubs would be trimmed to allow for installation of panels. Native vegetation would remain in the solar arrays during operations and would provide suitable habitat for tortoises during operations.

A total of approximately 501 acres of occupied desert tortoise habitat would be permanently disturbed and up to approximately 2,141 acres would be temporarily disturbed as a result of Project implementation.

Construction equipment would not operate beyond the fenced boundary. Roads outside of the Project area that are not designated as open by the Applicant and Tribe are not to be used by Project personnel unless accompanied by a biological monitor.

The Proposed Project is not expected to substantively contribute to habitat fragmentation because the preservation of native vegetation on site and a permeable fence would allow tortoises to re-occupy the site after construction.

The Project activities would not have direct or indirect effects on the physical characteristics of designated critical habitat that are required to support the recovery of the species because there is no designated critical habitat within the Action Area.

5.2.4 Constriction of Movement

The Proposed Action is currently located in an area where desert tortoise movement is generally unrestricted; Tortoise movement to the south may be hindered by the existing solar project, although they can still move around that site to the east or west. Movement to the east is hindered by Interstate 15 and a railroad. Temporary exclusionary fencing would be installed around the perimeter of the site in order to exclude tortoises during construction. The exclusionary fencing would restrict desert tortoise movement on the site during construction (approximately 14 – 16 months) but would not preclude north-south movement through the Dry Lake Valley. During operations, tortoises would be allowed to re-inhabit and move freely through the solar arrays.

Given the existing natural and anthropogenic barriers, because most vegetation would be maintained on the Project site, and the perimeter fence would remain permeable during operations to allow tortoises to occupy and move through the solar arrays, project activities would be unlikely to further reduce genetic connectivity in the area.

5.2.5 Vibration and Noise

Equipment that would cause surface disturbance and otherwise operate during construction would be limited to what would be needed to grade dirt access roads, equipment to install solar arrays, trenching equipment for installation of cable and wiring and equipment to install the small operations building and the proposed electric substation. Areas outside of the exclusion fence may experience short-term vibrations and increased noise that could potentially disturb desert tortoises. Noise and vibration would be temporary and sporadic. Construction taking place near the perimeter edge of the exclusion fence is limited. Ground-disturbing activities during O&M would be substantially less than during construction of the Proposed Action, such that no adverse effects on desert tortoise from ground vibration or noise are expected to occur during O&M.

5.2.6 Dust

Construction activities and O&M vehicle traffic on the roads within the Action Area could generate dust that could affect vegetation adjacent to the Action Area in the short-term; long-term adverse effects on vegetation are not expected to occur. The buildup of dust on plant leaves could affect photosynthetic productivity and nutrient and water uptake resulting in loss of potential foraging plants for desert tortoises. It is assumed that this low-level dusting effect during construction would be minimal and most likely washed away during rainstorms. Construction BMPs would be in place to monitor and decrease dust pollution, if required, by use of polymeric stabilizers in the soil or with frequent watering with water trucks or other means.

5.2.7 Lighting

Temporary lighting would be used during construction at dawn and dusk at the construction offices, laydown yards . There may also be mobile lighting located at entrances during construction. Lighting would likely be used more during the wintertime to ensure safe working conditions for personnel. Minimal lighting would be used on-site and would be directed inward and downward. Site lighting could include motion sensor lights for security purposes. Lighting used on-site would be of the lowest intensity foot candle level, in compliance with any applicable requirements from the Moapa Band, measured at the property line after dark. The Project's lighting system would provide O&M personnel with illumination for both normal and emergency conditions near the main entrance, O&M building and the Project substation. Lighting would be designed to provide the minimum illumination needed to achieve safety and security objectives and would be downward facing and shielded to focus illumination on the desired areas only. Therefore, light trespass on surrounding properties would be minimal. If lighting at individual solar panels or other equipment is needed for night maintenance, portable lighting would be used. Project lighting is not expected to have a more than negligible effect on desert tortoises near and adjacent to the Proposed Action

5.2.8 Edge Effects

The edge effect is the effect of the juxtaposition or placing side by side of contrasting environments on an ecosystem. This term is commonly used in conjunction with the boundary between natural habitats and disturbed or developed land. The Proposed Action includes placement of a temporary exclusionary perimeter fence during construction. Other than impacted burrows or desert tortoises that need to be relocated during fence construction we assume that there would be no permanent or long-term edge effects as a result of the Proposed Action. The fence may create roosting sites for ravens or birds of prey; these effects would be mitigated through the preparation and implementation of a Raven Control Plan.

5.2.9 Introduction of Weeds and Invasive Species

Introduction of weeds and invasive species would be controlled using an Integrated Weed Management Plan and would prevent or minimize the spread/colonization of weeds onsite and off-site. Invasive species could be introduced to the area via transport by construction vehicles and equipment. The ground would be disturbed during construction providing increased opportunity for weed establishment, though much less than if the site were to be graded. The Integrated Weed Management Plan (Appendix F of the DEIS) would identify management and operational practice to avoid the introduction or spread of existing invasive species within the Action Area. The goal of this plan would be to minimize potential effects from weeds and invasive species within the Action Area and adjacent lands, as well as to avoid adverse effects on desert tortoise foraging habitat off-site. Implementation of this plan would result in no adverse effects on desert tortoises from weeds or invasive species within the Action Area or on adjacent lands.

5.2.10 Exposure to Chemicals

The primary wastes generated at the Project during construction, operation, and maintenance would be nonhazardous solid and liquid wastes. Limited quantities of hazardous materials would be used and stored on the solar site. The BESS, if included, could include lithium-ion batteries that would need replacement periodically and the used batteries would need to be disposed of according to appropriate protocols. The primary hazardous materials on site during construction would be the fuels, lubricating oils and solvents associated with construction equipment. The nonhazardous wastes produced by construction and O&M activities would include defective or broken electrical materials and batteries, empty containers, the typical refuse generated by workers and small office operations, and other miscellaneous solid wastes. The types of wastes and their estimated quantities will be discussed in a hazardous materials plan that will be developed for the Project.

The Applicant has prepared a Spill Prevention and Emergency Response Plan that addresses waste and hazardous materials management, including BMPs related to storage, spill response, transportation, and handling of materials and wastes. The draft plan is included in Appendix E of the DEIS. Waste management would emphasize the recycling of wastes where possible and would identify the specific landfills that would receive wastes that cannot be recycled.

Mechanical treatment of weeds is the preferred method for the Project; however, herbicides may be used if necessary. Herbicide use would follow those approved in BLM's Programmatic EIS (PEIS) for Vegetation Treatments Using Aminopyralid, Fluroxypyr, and Rimsulfuron on BLM Managed Lands in 17 Western States (BLM 2007, BLM 2016). The herbicides that may be used in mowed areas, based on those allowed on BLM lands, include aminopyralid, clopyralid, imazapyr, imazapic, glyphosate, metasulfuron methyl, and rimsulfuron. The applicant would implement a Site Restoration Plan and an Integrated Weed Management Plan that specifies procedures for managing vegetation and minimizing the spread of non-native and noxious weeds, including integrated pest management and use of herbicides. Standard Operating Procedures (SOPs) would be incorporated into the Integrated Weed Management Plan (Appendix F of the DEIS) and implemented. Herbicides that are believed to have deleterious effects on reptiles, such as 2,4-D, would not be allowed. Any herbicide use would be used during the less active tortoise season.

Water is the preferred method for reducing dust for the Project; however, palliatives may be used in permanent disturbance areas at the beginning of construction where tortoises have been excluded. Approved palliatives for use in desert tortoise habitat include Road Bond 1000, Soil Cement (for roads and heavy traffic areas), Formulated Soil Binder (FSB) 1000 (for non-traffic areas on finer soils) and Plas-Tex

(For non-traffic areas on sandier/rockier soils). Since palliatives would only be used in areas where tortoises have been excluded, they should not come into contact with these substances.

5.2.11 Attraction of Human Subsidized Predators

Avian predators and scavengers such as the common raven and canids benefit from a myriad of resource subsidies provided by human activities as a result of substantial development within the desert as compared to undeveloped desert landscapes (Boarman and Sazaki 1996). These subsidies can include food (e.g. garbage), water (e.g. detention ponds), nesting substrates (e.g. transmission lines and fencing), and safety from inclement weather or predators (e.g. buildings). Ravens and other predators may be attracted to elevated structures associated with the Proposed Action such as the perimeter fencing, collector line poles and the O&M building. There is a potential for increased sources of food, trash or water both during construction and operation of the Project, particularly at facilities where people concentrate; however, a Raven Control Plan (RCP) (Appendix K of the DEIS) was developed and would be approved prior to the initiation of construction activities. It addresses trash and litter control. These would reduce or eliminate potential raven (or other avian predators) related impacts to desert tortoises.

5.2.12 Operations and Maintenance

Because the solar site would be enclosed with permeable fencing and most vegetation would be maintained on site during operations, it is likely that tortoises would pass through the solar site and reoccupy it to some extent, though the extent to which tortoise would reoccupy the site is unknown at this time. The presence of desert tortoises on the solar site may result in take (injuries or death). Tortoises may be injured or killed during routine maintenance of facilities inside by maintenance vehicles on the solar site. Mitigation measures, such as biological monitors for ground disturbing activities, speed limits, and WEAP, would help to minimize impacts to desert tortoise during these routine maintenance activities (Refer to Section 2.7.4).

Determination

Implementation of the Proposed Action may affect, and is likely to adversely affect, the desert tortoise in the Action Area. This determination is based on the following considerations:

- Construction-related impacts on the desert tortoise could include direct mortality or injury as a result of being crushed by vehicles and disturbance of soil. During pedestrian surveys of the Action Area, desert tortoise sign (e.g., scat, tracks, burrows, shell fragments) as well as live tortoises were observed. In addition to the direct and indirect effects of construction on the tortoise, temporary and permanent disturbance to desert tortoise habitat would occur.

- Capturing, handling, and relocating desert tortoises out of the solar site may result in harassment and possibly injury or death (Blythe et al. 2003). To minimize this effect, tortoises would be handled in accordance with USFWS handling protocols (Minimization Measures 4, 5, and 6).

- O&M activities along the collector lines, access roads, and within the solar site could include direct mortality or injury as a result of being crushed by vehicles. Desert tortoises are expected to re-inhabit the solar site during operations, the extent of which is unknown at this time. Minimization measures (Section 2.7.4) would be implemented to minimize this risk.

5.3 Moapa Dace

The Moapa dace is only known to occur in the Muddy River and several associated headwater springs in the Warm Springs area. These springs represent the primary water source for the Muddy River to which the Moapa dace is endemic. The Proposed Action would include water withdrawal of 200 acre-feet per year (afy) for construction and up to 20 afy for operation. Groundwater withdrawals represent the only potential effect to Moapa dace from the Proposed Action.

5.3.1 Water Drawdowns

The entire flow of the Muddy River is derived from the discharge from the regional carbonate aquifer, except during infrequent precipitation events that increase River flows for up to a few days. Consumptive uses include 1) natural evapotranspiration, 2) surface-water diversions, and 3) groundwater diversions.

On July 14, 2005, a Memorandum of Agreement (MOA) was signed by the Southern Nevada Water Authority (SNWA), Meadow Valley Wash Water District (MVWWD), Coyote Springs Investments (CSI), Moapa Band and the USFWS regarding the withdrawal of 16,100 afy from the regional carbonate aquifer in Coyote Spring Valley and California Wash Basins that included conservation measures for the Moapa dace. The MOA outlined specific conservation actions that each party would complete in order to minimize potential impacts to the Moapa dace should water levels decline in the Muddy River system as a result of the cumulative withdrawal of 16,100 aft of groundwater from the two basins. On January 20, 2006, the USFWS concluded intra-service consultation and issued a programmatic biological opinion (PBO) entitled the *Intra-Service Programmatic Biological Opinion for the Proposed Muddy River Memorandum of Agreement Regarding the Groundwater Withdrawal of 16,100 Acre-Feet per Year from the Regional Carbonate Aquifer in Coyote Spring Valley and California Wash Basins, and Establish Conservation Measures for the Moapa Dace, Clark County, Nevada* (PBO).

The PBO indicated that the adverse effects associated with the withdrawal of 16,100 afy of groundwater would not result in "jeopardy" for the Moapa dace. Current monitoring data indicate that no instream flow trigger points have been reached.

The Moapa dace would not be directly affected by the construction or O&M of the proposed action. However, groundwater withdrawals associated with the proposed action would indirectly affect the Moapa dace. The effects of these groundwater withdrawals were previously analyzed in the 2006 PBO which evaluated the cumulative effects associated with the withdrawal of up to 16,100 afy from the carbonate aquifer in Coyote Spring Valley and California Wash basins. The Tribe is one of several parties that would withdraw water under this analysis. Up to 2,500 afy of Tribal withdrawals were included for the Tribe out of the total 16,100 analyzed in the 2006 PBO; the 200 AF (construction) and 20 afy (operations) of withdrawals proposed by the Project would be included in the previously permitted 2,500 afy. The K-road Project has already been built and is permitted to use up to 40 afy during operations (BIA 2012); the Moapa Solar Energy Center has not been built and water allocations (100 AF for construction and up to 30 afy during operations, BIA 2014)) would not be used as that will now become part of the Arrow Canyon Solar Project (ACSP); the Eagle Shadow Mountain project has not been built but is permitted to use 200 AF during construction and up to 20 afy during operations (BIA 2019); the ACSP has not been built but will be permitted to use 300 AF during construction and up to 30 afy during operations. Total water use from the Muddy River system for all these projects, combined with the Proposed Action, would be up to 700 afy during construction (which would not occur at the same time) and up to 110 afy during operations, well under the allotted 2,500 afy for the Tribe. The use of the 200 AF and 20 afy would

contribute to ongoing adverse effects to Moapa dace as was analyzed in the 2006 PBO to which this document tiers.

Determination

Groundwater pumping associated with the Proposed Action may affect, and is likely to adversely affect, Moapa dace because the withdrawal of water (200 AF during construction and 20 afy during operations) could contribute to ongoing adverse effects as analyzed in the 2006 PBO.

5.4 Cumulative Effects

Cumulative effects are those effects from future private, state, or Tribal activities that are likely to occur within the Action Area. Future federal actions are excluded as these are subject to Section 7 consultation under the ESA (50 CFR 402.02). The Eagle Shadow Mountain Solar Project was recently approved and would be located on the Moapa River Indian Reservation (construction began in mid-2020). The Arrow Canyon Solar Project is expected to be approved in late 2020 and would be located on the Reservation. The Southern Bighorn Solar II Project is expected to be approved concurrently with the Southern Bighorn Solar I Project and would be located on the Reservation. The Gemini Solar and Battery Storage Project was recently approved and would be located on BLM land southeast of the Reservation. Since the action areas are managed by BIA and BLM, Section 7 consultation would be required.

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Appendix A. USFWS Species List

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Southern Nevada Fish And Wildlife Office
4701 N. Torrey Pines Drive
Las Vegas, NV 89130-2301
Phone: (702) 515-5230 Fax: (702) 515-5231

In Reply Refer To:
Consultation Code: 08ENVS00-2020-SLI-0216
Event Code: 08ENVS00-2020-E-00384
Project Name: Southern Bighorn Solar I

September 10, 2020

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

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

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

Official Species List

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

This species list is provided by:

Southern Nevada Fish And Wildlife Office
4701 N. Torrey Pines Drive
Las Vegas, NV 89130-2301
(702) 515-5230

Project Summary

Consultation Code: 08ENVS00-2020-SLI-0216

Event Code: 08ENVS00-2020-E-00384

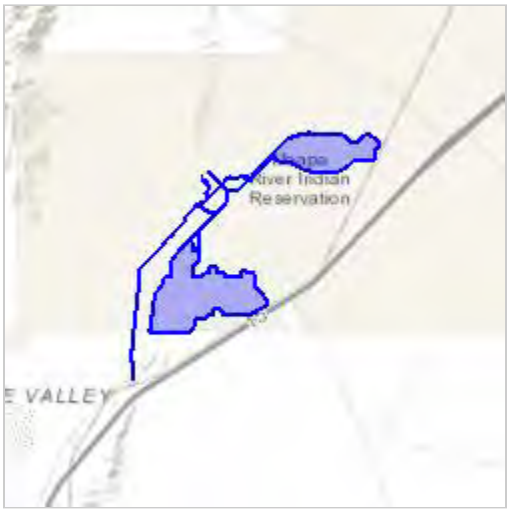
Project Name: Southern Bighorn Solar I

Project Type: POWER GENERATION

Project Description: Moapa Indian Reservation; PV solar project.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/36.5147732293556N114.80318770821984W



Counties: Clark, NV

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

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

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

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

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

Birds

NAME	STATUS
Southwestern Willow Flycatcher *Empidonax traillii extimus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered
Yuma Ridgways (clapper) Rail *Rallus obsoletus [=longirostris] yumanensis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3505	Endangered

Reptiles

NAME	STATUS
Desert Tortoise *Gopherus agassizii* Population: Wherever found, except AZ south and east of Colorado R., and Mexico There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4481	Threatened

Critical habitats

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

USFWS National Wildlife Refuge Lands And Fish Hatcheries

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

REFUGE INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

Migratory Birds

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

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

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

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

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

NAME	BREEDING SEASON
Bendire's Thrasher *Toxostoma bendirei* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9435	Breeds Mar 15 to Jul 31
Burrowing Owl *Athene cunicularia* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9737	Breeds Mar 15 to Aug 31

NAME	BREEDING SEASON
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Dec 1 to Aug 31

Probability Of Presence Summary

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

Probability of Presence (■)

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

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

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

Breeding Season (■)

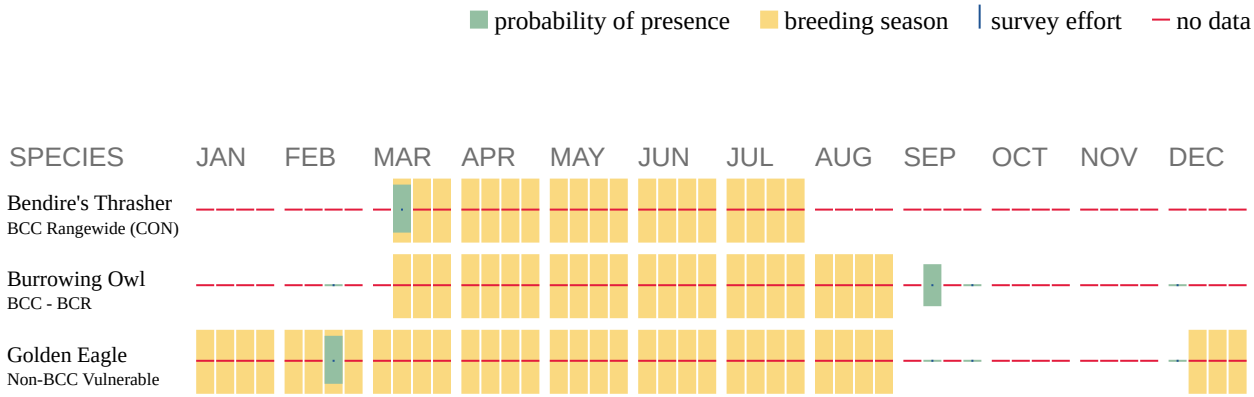
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

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

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

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



Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.
Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding

in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?
The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

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

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

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

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

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

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

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

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

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

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In

contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ “Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds” at the bottom of your migratory bird trust resources page.

Wetlands

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

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

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

FRESHWATER POND

- PUBF

RIVERINE

- R4SBC

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Biological Assessment

Southern Bighorn Solar II Project

Prepared for:

Bureau of Indian Affairs Western Regional Office
2600 N. Central Avenue
Phoenix, AZ 85004-3050

November 2020

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TABLE OF CONTENTS

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1 INTRODUCTION

The purpose of this Biological Assessment (BA) is to review the Southern Bighorn Solar Project II (SBSP II or Project) and to determine to what extent the Project would affect federally listed threatened or endangered species; species proposed for listing; and/or designated or proposed critical habitat. The Project would use land held in trust by the Bureau of Indian Affairs (BIA) for the benefit of the Moapa Band of Paiutes (Moapa Band) and a designated utility corridor on Reservation lands that is managed by the Bureau of Land Management (BLM).

The proposed Project would be located approximately 30 miles northeast of Las Vegas in Clark County, Nevada (**Figure 1-1**), west of I-15 and east of U.S. Highway 93. The SBHS II would be located on up to 814.7 leased acres within the 935-acre lease area on the Reservation in Sections 4, 5, 6, 7, 8 and 9 of Township 16 South, Range 65 East, Mount Diablo Base Meridian.

The proposed 3.2-mile collector line would be located in Sections 12, 13 and 14 of Township 16 South, Range 64 East, Mount Diablo Base Meridian. The northern portion of the collector line would be located adjacent to an existing utility corridor and adjacent to multiple existing linear electric transmission and pipeline utilities and the southern portion of the line would cross the same corridor and existing utilities. **Figure 1-2** shows the location of the proposed components of the Project and associated facilities. Project components would include onsite facilities, offsite facilities, and temporary facilities needed to construct the Project.

The proposed approximately 2 miles of new access road would be located in Sections 13 and 14 of Township 16 South, Range 64 East and Section7 of Township 16 South, Range 65 East, Mount Diablo Base Meridian

The majority of the Project is located on Tribal land. A portion of the collector line is located on Tribal land but is within a designated utility corridor that is managed by the BLM. A portion of the existing access road is located on lands administered by the BLM. As such, this BA has been prepared in coordination with both BIA and BLM for submittal to the U.S. Fish and Wildlife Service (USFWS).

1.1 Project Overview

425LM 8me LLC (“Applicant”), a subsidiary of 8minutenergy, proposes to construct, operate, maintain, and decommission the Project, consisting of up to a 100-megawatt (MW) alternating current (AC) solar photovoltaic (PV) power generating facility on approximately 1,000 acres of land on the Moapa River Indian Reservation (Reservation) in Clark County, Nevada (**Figure 1-1**). Major Project components include the following:

- Solar blocks
- Battery Energy Storage System (BESS)
- Collector line
- Site fencing
- Communication systems infrastructure
- Operation and maintenance (O&M) building
- Access roads

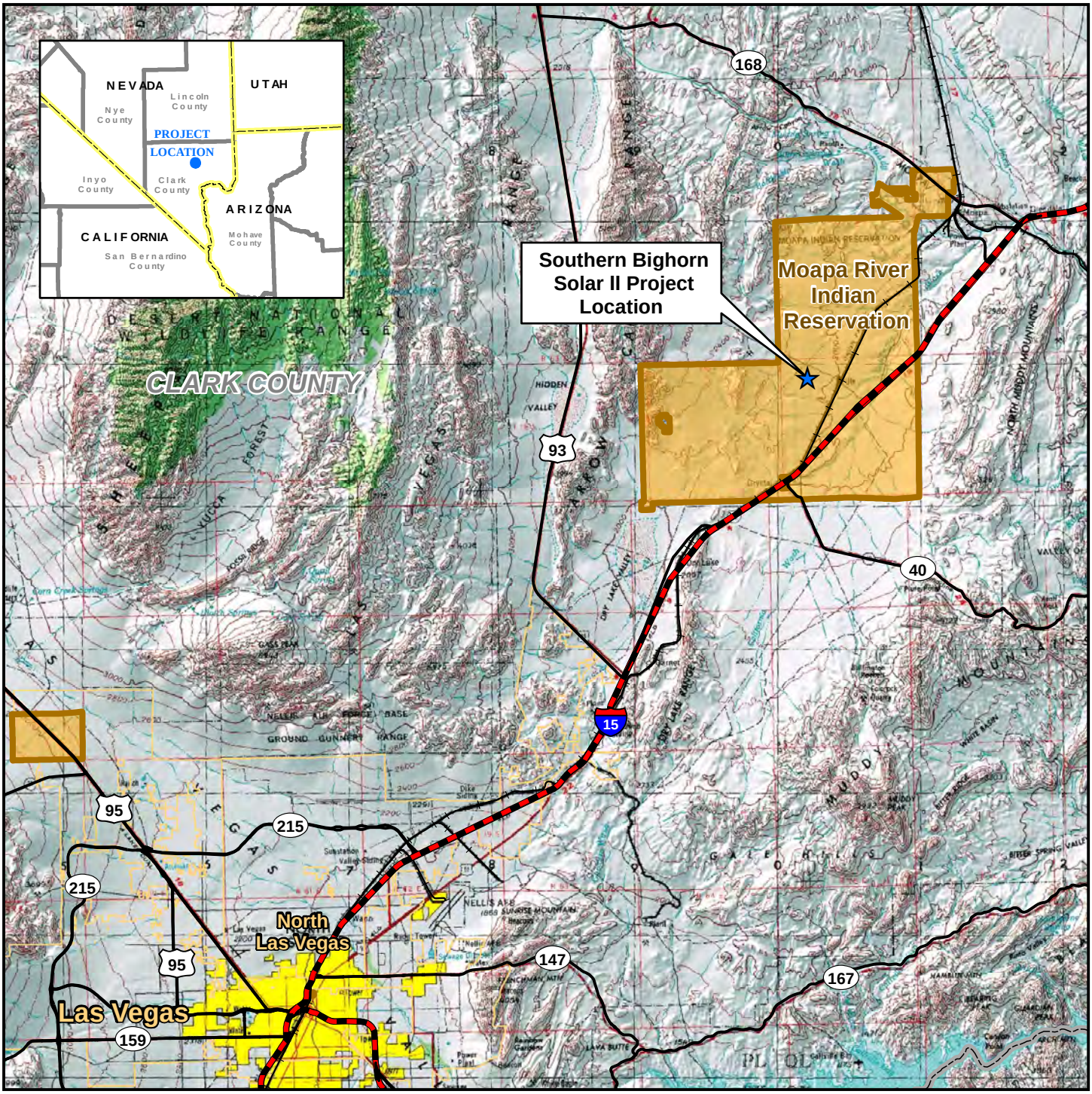
A complete Project description is presented in Chapter 2 of this BA.

Power produced by the Project would be conveyed to the Nevada Power bulk transmission system via the collector line, which would interconnect to the previously approved Eagle Shadow Mountain substation. From there, the electricity generated would connect to the existing 230-kilovolt (kV) transmission generation interconnection (gen-tie) line within a designated utility corridor which would deliver the electricity to the regional grid at NV Energy's Reid Gardner Substation.

1.2 Consultation History

On September 10, 2020, an official list of species that may occur within the Project area was obtained from the USFWS website Information for Planning and Consultation System (IPaC) (Consultation Code: 08ENVS00-2020-SLI-0217)(**Appendix A**); additional species were considered due to proximity to the Project area (USFWS 2020). **Table 1-1** lists these species, their status, critical habitat (if any) and proximity of the same to the proposed Project area, and the recommended effects determination.

The BIA met with USFWS on April 30, 2020, via teleconference, to discuss the Section 7 process, timing, options for Mojave desert tortoise (*Gopherus agassizii*) relocation and potential project designs that would minimize impacts to desert tortoise. Attendees included Glen Knowles (USFWS Las Vegas Field Office), Kelly Barry (USFWS Las Vegas Field Office), Jessica Zehr (USFWS, Las Vegas Field Office), Chip Lewis (BIA) and Patrick Golden (Heritage).



LEGEND

- Solar Project Location
- Interstate
- US/ State Highway
- Railroad
- Municipal Boundary

Jurisdictional Land Ownership

- Indian Reservation

0 2 4 6 8 10

Miles

Universal Transverse Mercator
North American Datum 1983
Zone 11 North, Meters

SOUTHERN BIGHORN SOLAR II PROJECT

FIGURE 1-1
PROJECT LOCATION

Map Extent: Clark County, Nevada

Date: 09-11-20		Author: rnc

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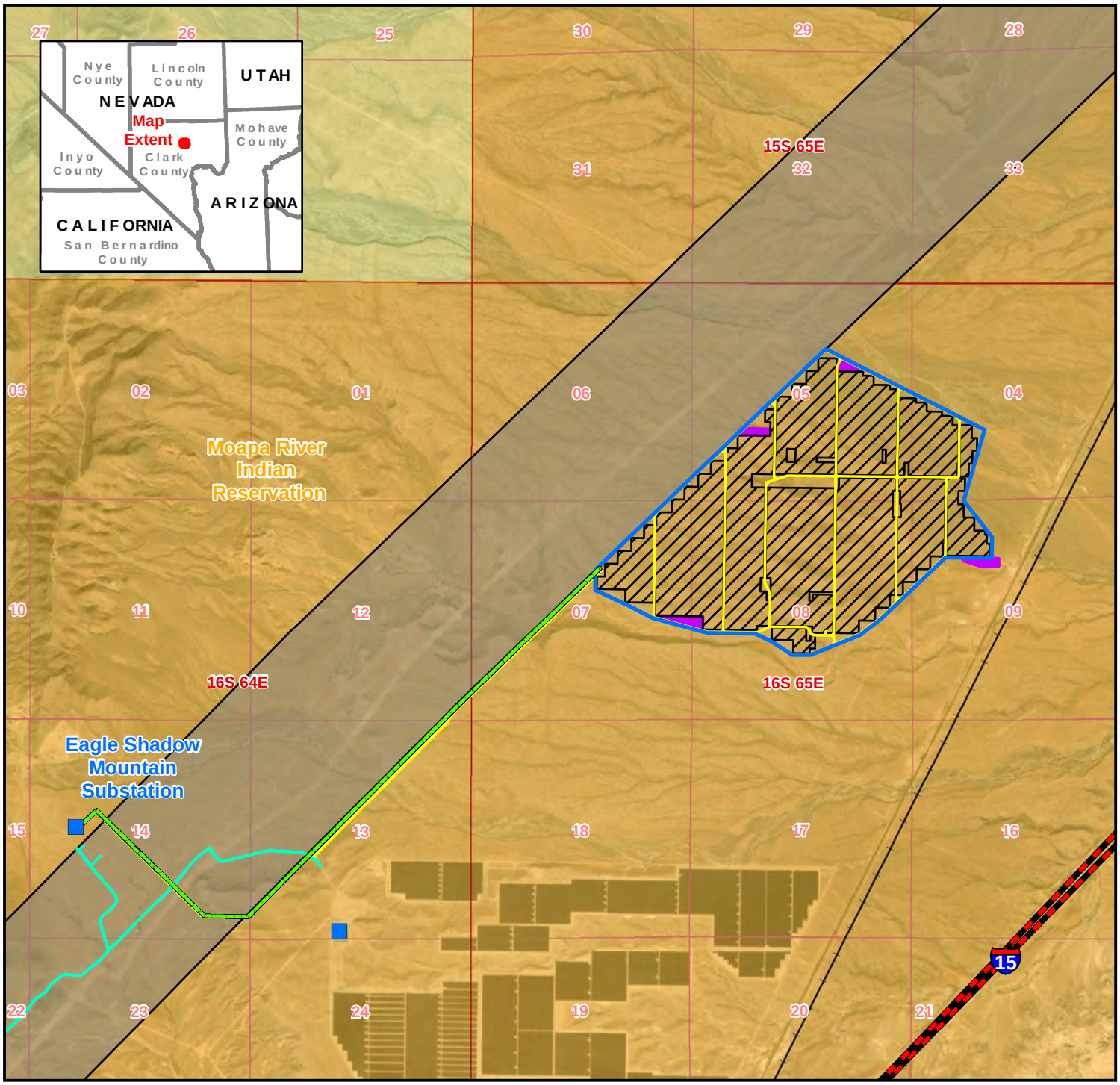

Project Components

- Collector Lines
- Existing Access
- New Access
- Lease Area
- Solar Panel Installation Area
- Laydown Yard

General Features

- Existing Substation
- Interstate
- Major Highway
- Railroad
- Designated Utility Corridor
- Township / Range
- Section Line

Jurisdictional Land Ownership

- Bureau of Land Management Land
- Indian Land

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Miles

Universal Transverse Mercator
North American Datum 1983
Zone 12 North, Meters

SOUTHERN BIGHORN SOLAR II PROJECT

Figure 1-2
Project Components

Map Extent: Clark County, Nevada

Date: 09-11-20 | Author: rnc

Table 1-1 - LISTED SPECIES CONSIDERED			
Species	**Status**	**Critical Habitat/Location**	**Recommended Determination of Effects**
Birds			
Yellow-billed cuckoo (*Coccyzus americanus*) Population: Western U.S. Distinct Population Unit	Threatened	USFWS Proposed Critical Habitat approximately 100 miles south of the Project area	*May affect, not likely to adversely affect*
Yuma clapper (Ridgway's) rail (*Rallus longirostris yumanensis*) Population: U.S. only	Endangered	No USFWS Designated Critical Habitat	*May affect, not likely to adversely affect*
Southwestern willow flycatcher (*Empidonax trailii extimus*)	Endangered	USFWS Designated Critical Habitat approximately 18 miles east of the Project area	*May affect, not likely to adversely affect*
Reptiles			
Mojave desert tortoise (*Gopherus agassizii*)	Threatened	USFWS designated Critical Habitat approximately 12 miles west of the Project area	*May affect, likely to adversely affect* *No effect to designated critical habitat*
Fish			
Moapa dace (*Moapa coriacea*)	Endangered	No USFWS Designated Critical Habitat	*May affect, likely to adversely affect*

** Yellow-billed cuckoo and Moapa dace were not included in the USFWS official species letter but are addressed in this BA due to the proximity of the species' ranges to the project area.*

2 DESCRIPTION OF THE PROPOSED ACTION

This chapter provides a detailed description of the proposed Project. It describes the various components of the Project and includes discussions of the proposed construction process, O&M procedures, and decommissioning.

The 1,000-acre solar site would be located entirely on the Reservation. Major onsite facilities include a 100 MW solar field comprised of solar blocks, a battery energy storage system (BESS), collector lines, site fencing, communications systems infrastructure, O&M building and access roads. Onsite facilities would impact up to 1,000 acres. The offsite facilities would include an approximately 2+-mile largely underground collector line co-located with the new access road and would be located on the Reservation and BLM-administered utility corridor. 2 miles of the collector line would be on Tribal lands and <1 mile within a Federally-designated utility corridor on the Reservation. This line would require a ROW width that would vary between 50 and 80 feet. Additional offsite facilities include access roads using existing roads that would provide access to the Project and electric distribution and communication lines; no upgrades to these existing roads are anticipated. Temporary facilities that would be removed at the end of construction include temporary work areas, pull sites, and laydown yards. **Table 2-1** summarizes the principle components of the Project and the associated agency actions.

Power produced by the Project would be conveyed to the regional transmission system via the collector line and interconnection to the Eagle Shadow Mountain substation where it would tie in with NV Energy's existing 230kV Reid Gardner Substation.

Table 2-1 - SUMMARY OF AGENCY LANDS / JURISDICTION PROPOSED SOUTHERN BIGHORN SOLAR II PROJECT				
Agency	**Project Component**	**Location**	**Agency Action**	**Mileage / Acreage**
BIA	Solar Field	Reservation	Lease[2]	1,000 acres
	Existing Access Roads	Reservation	ROW	4 miles / 10 acres
	New Access Roads	Reservation	ROW	2 miles / 5 acres
	Collector Lines	Reservation	ROW	2 miles/14 acres
	TOTAL BIA			8 miles / 1,029 acres
BLM	Existing Access Roads	Designated Utility Corridor on Tribal Lands and managed by BLM	ROW	20 miles / 42 acres
	Existing Access Roads	BLM Lands	ROW	2 miles / 6 acres
	Collector Lines	Designated Utility Corridor on Tribal Lands and managed by BLM	ROW	<1 mile / 7 acres
	Gen-tie Line	Designated Utility Corridor on Tribal Lands and managed by BLM	ROW	11 miles / 98 acres
	Gen-tie Line	BLM Lands	ROW	<1 mile / 3 acre
	TOTAL BLM			34 miles / 156 acres

[1] Acreage and mileage are approximate. Collector line acreage is based on a ROW that varies from 60 to 120 feet wide, depending on location. Only a portion of the ROWs would be disturbed. Only a portion of the solar field would be disturbed by the final footprint of the Project.

The total acreage of temporary and permanent disturbance associated with the Project is summarized in **Table 2-2**. The solar fields contain several major facilities, referred to in this document as onsite facilities. Onsite facilities would impact a portion of the approximately 1,000-acre lease area. Onsite facilities are discussed in detail below. Collector lines and access roads, referred to in this document as offsite facilities, are also discussed in detail below. The Project would implement best management practices (BMPs) and design features to guide design, construction, O&M, and decommissioning to minimize environmental impacts. The BMPs and design features incorporated into the Projects are summarized in **Appendix B** of the DEIS.

Permanent disturbance areas will be those areas where the surface of the ground is not restored to its existing condition after construction, such as foundations or new access roads. Temporary disturbance areas include those where construction activity will take place but where restoration of the surface will be possible, such as temporary work areas, pull sites, and laydown yards. In some places, areas of temporary disturbance will overlap with previously disturbed areas. The Project is estimated to result in approximately 243 acres of permanent disturbance and 782 acres of temporary disturbance.

Table 2-2 - TEMPORARY AND PERMANENT DISTURBANCE		
Project Component	**Temporary Disturbance (acres)**	**Permanent Disturbance (acres)**
Solar Field and Ancillary Facilities[1]	729	271
Collector Line and Collector Line Access Road	--	21
New Access Roads to Solar Fields	2	5
Total	**731**	**297[2]**

[1] The solar field includes all facilities within its boundary including solar arrays, internal access roads, O&M building, parking areas, temporary laydown yards, BESS and perimeter fence.

[2] These acres would be graded and kept free of vegetation for the duration of operations while the remainder would not be graded with vegetation left in place.

2.1 Onsite Facilities

The solar field includes the following onsite facilities discussed in detail below: solar blocks, Battery Energy Storage System (BESS), site fencing, communications systems infrastructure, O&M building, and access roads. **Figure 2-1** shows the conceptual site plan for the solar fields (this figure also depicts offsite facilities including collector lines and access roads which are discussed in detail in Section 2.2).

2.1.1 Solar Blocks

Mounted PV solar panels, inverter stations, and transformers would be combined to form solar blocks which would be repeated to create electrical energy of up to 100 MW (approximately 28 solar blocks; block size and quantity may change based on final design). The electricity generated from the solar panels (direct electrical current [DC]) would be delivered through underground cables to an inverter station where the DC is converted to alternating electrical current [AC]. Inverter stations are generally located in the middle of each solar block. A transformer would then step up the voltage to 35 kV.

The transformers would be contained in steel enclosures. The inverter stations could be contained in an enclosed or canopied metal structure on a skid or concrete mounted pad. The enclosures would be designed to meet National Electric Manufacturers Association (NEMA) 1 or NEMA 3R IP44 standards for electrical enclosures in order to contain any fire, should one occur. The enclosures will be constructed on 6 inches of stone with filter fabric underlay; each enclosure pad would be approximately 350 square feet in size.

Solar panels would be installed on rows of single-axis trackers that would rotate to follow the sun over the course of the day. A typical PV solar panel layout using single-axis trackers is shown on **Figure 2-2**. Depending on the soil conditions within the solar fields, the wind load capacity of the solar panels, and the mounting structure supporting the solar panels, the foundations for the mounting structures would either be embedded driven steel posts or screw anchors (screw anchors would only be used if soil conditions do not support driven posts). The mounting structures would extend approximately 12 feet below ground and may be encased in concrete or a small concrete footing. The layout of the solar blocks would be optimized for the desired energy production while accounting for site characteristics, such as soil conditions, topography, and hydrology. The solar panels would be up to 20 feet above ground at their highest point, which would occur during the morning and evening hours when the trackers are tilted at their maximum angle (**Figure 2-3**). Each solar block would be powered by a low-voltage electric drive

motor. The motors would typically be operated for a few seconds every 5 to 10 minutes during daylight conditions to move the panels in approximately one-degree increments.

Meteorological monitoring stations would be located at multiple locations (up to 7) within the solar blocks to monitor wind speed and communicate with the trackers. This would allow for the trackers to rotate the solar panels to a flat position during high winds. Meteorological stations would be mounted on or around the inverter stations and would not exceed 16 feet in height from the ground.

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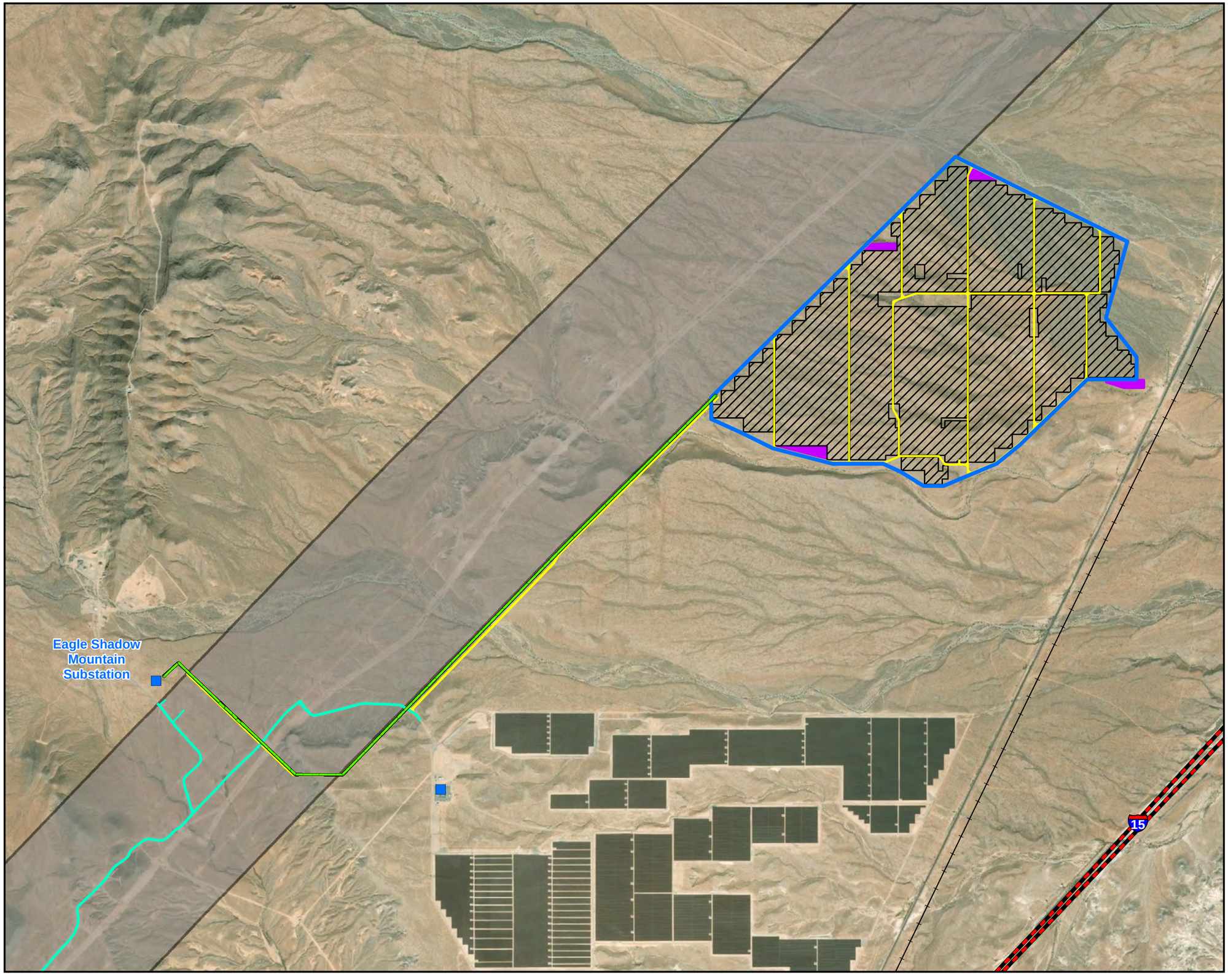

Project Components

- Collector Lines
- Existing Access
- New Access
- Lease Area
- Solar Panel Installation Area
- Laydown Yard

General Features

- Existing Substation
- Interstate
- Major Highway
- Railroad
- Designated Utility Corridor

0 0.25 0.5 0.75 1

Miles

North American Datum 1983
State Plane Nevada East Feet

SOUTHERN BIGHORN SOLAR II PROJECT

FIGURE 2-1
CONCEPTUAL SITE PLAN

Map Extent: Clark County, Nevada

Date: 09-11-20		Author: rnc

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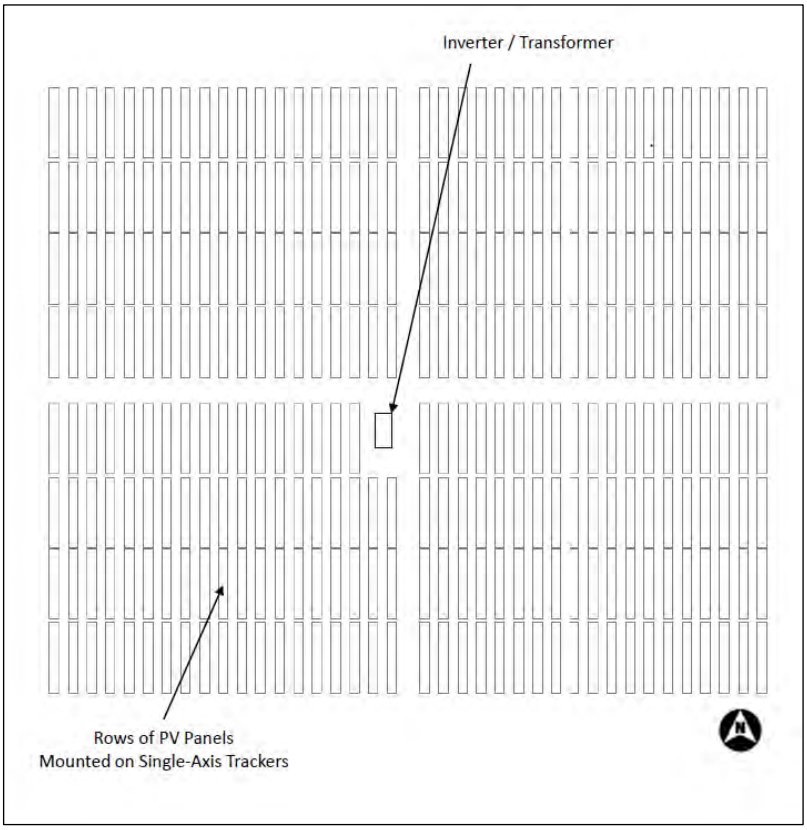

Figure 2-2 – Typical Single-Axis Tracker Array Layout

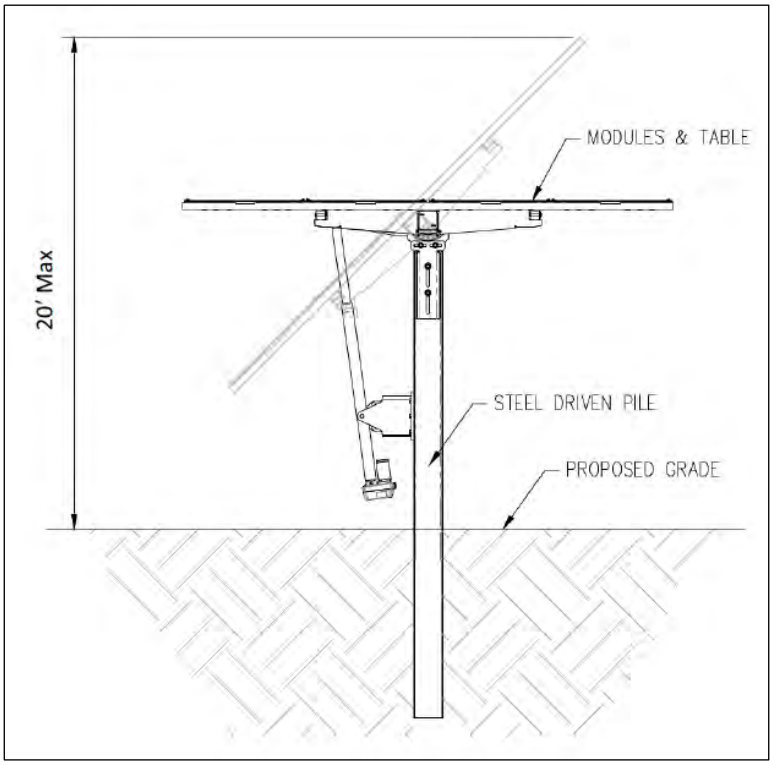

Figure 2-3 – Typical Single-Axis Tracker Cross Sectional View

2.1.2 Battery Energy Storage System

The solar field would include one or more BESSs. The BESSs would consist of modular and scalable battery packs and battery control systems that conform to national safety standards. The BESSs would be located in pad- or post-mounted, stackable metal structures (approximately 40 feet long by 8 feet wide by 8 feet high) or a separate building in compliance with applicable regulations. The maximum height of a building, if used, would not exceed 25 feet. The total acreage of the BESSs would not exceed 12 acres. The dimensions and number of BESSs would vary depending on the application, supplier, chosen configuration, and applicable building standards. The BESSs would be located in the area of permanent disturbance within the solar field.

2.1.3 Site Fencing

The Project site would be enclosed within a chain link perimeter fence, potentially with barbed wire, measuring up to 8 feet in height (from finished grade). The fence would have controlled access points, lighting, and possibly security alarms, security camera systems with remote monitoring, and security guard vehicle patrols during operations to deter trespassing and/or unauthorized activities. The fence would have a 6 to 8-inch opening at the bottom of the fence to allow for the movement of desert tortoises into and through the site during O&M. The BESSs and O&M facilities would be surrounded by fencing that does not include the desert tortoise opening due to safety issues. There would be up to 16,375 linear feet of fencing following the perimeter of the property.

2.1.4 Communication Systems Infrastructure

Telecommunications systems would be installed at the transformers, consisting of a remote terminal unit, communications line (i.e., T-1 line), microwave receiver, and miscellaneous communication cables and link equipment, as required. Fiber optics would be installed on the collector lines to link the Project to the Reid Gardner Substation. A meter would be installed to measure the energy output of the Project. The microwave receiver may be mounted on the O&M building or on a 100-foot-tall lattice structure within the solar field to facilitate wireless communications and provide a back-up option for site telecommunications.

The Project would include a Supervisory Control and Data Acquisition (SCADA) system that would allow for the remote monitoring and control of inverters and other Project components. The SCADA system would be able to monitor Project output and availability and to run diagnostics on the equipment. This equipment would be located in the O&M building and would connect to the communications system.

2.1.5 Operation and Maintenance Building

The solar field would include an O&M building with onsite parking. The O&M building would be steel framed with metal siding and roof panels and would be approximately 80 feet long by 20 feet wide and approximately 20 feet in height. The O&M building could include offices, repair facility/parts storage, a control room, and restrooms. A septic tank and leach field may be installed for collection, treatment, and disposal of sanitary waste. If a septic system were not installed, portable toilets would be used.

Additional components of the O&M building would include aboveground water storage tanks, signage, a flagpole, trash containers, and SCADA system. The O&M building and components would be equipped with exterior lighting, as approved by the Moapa Band and BIA. Minimal lighting would be used and would be directed downward and away from wildlife habitat. The O&M building and parking area would occupy up to 6 acres.

2.1.6 Access Roads

Within the solar field, access roads would be built between the solar blocks to provide vehicle access to the solar equipment (e.g., solar panels, inverter stations, transformers). The internal access roads would occupy approximately 20 acres. Turnarounds would be constructed at the terminus of the roads to facilitate vehicle and equipment turn-around. The existing soil surface of all access roads would be leveled with a road grader. In addition to grading, access roads that lead to inverter stations would be compacted and graveled with onsite materials.

2.2 Offsite Facilities

2.2.1 Collector Lines

Energy generated from the solar blocks would be transferred from a transformer within the solar field to the ESMSP substation through one underground collector line (**Figure 2-1**). At the ESMSP substation, the electricity would be stepped up to 230 kV for delivery to NV Energy's Reid Gardner Substation. A small section (up to one mile) of the lines may be installed overhead where they cross through the BLM-managed designated utility corridor in order to avoid conflicts with existing underground utilities. The locations of overhead collector line installation can only be determined during construction; therefore the Proposed Action includes overhead and underground construction where collector lines cross the BLM-managed designated utility corridor. The collector line and fiber optic communication line would be installed underground in trenches up to 4 feet deep and 10 feet wide. The Project would include approximately 3 miles of primarily underground collector line. The collector line would be constructed within 21 acres of ROW (7 acres within the BLM-managed utility corridor and 14 acres on the Reservation).

Overhead collector lines, if necessary, would include the construction of up to 20 support structures across up to one linear mile (constructed as a single collector line), all within the BLM-managed designated utility corridor. The structures would be up to 50 to 75 feet above ground and spaced approximately 150 to 300 feet apart. The poles would be buried at 10 percent of the pole height plus two feet. The collector line ROW and permanent disturbance areas are expected to remain the same whether the collector lines are constructed overhead or underground.

2.2.2 Access Roads

The primary access route to the Project would utilize existing roads. Access would be via I-15 and North Las Vegas Boulevard, and then along existing access roads on the Reservation. These existing roads on the Reservation include the access road for the Southern Paiute Solar Project facility, roads providing access to an existing tribal aggregate operation and water wells adjacent to the Projects, an access road within and adjacent to the designated utility corridor, and an unnamed road that connects to the town of Ute, Nevada. No upgrades to these existing roads are anticipated; minor maintenance may be required during construction, O&M, and decommissioning.

The Project also includes the construction of new access roads that connect the existing Southern Paiute Solar Project facility roads to the SBSP II solar field, and a new access road within the proposed collector line ROW. It would include up to 2 miles (5 acres) of new access roads on the Reservation.

The Project also includes the construction of new access roads that connect the existing Southern Paiute Solar Project facility roads to the SBSP II solar field, and a new access road within the proposed collector

line ROW. The Project would include 58 acres of existing access road (6 acres on BLM lands, 42 acres within the BLM-managed designated utility corridor, and 10 acres on Reservation lands).

2.3 Project Construction

Construction of SBSP II is expected to take approximately 8 to 10 months. The Applicant expects that construction would commence in the second quarter of 2021.

2.3.1 Onsite Facilities

Grading, Site Preparation, and Vegetation Removal – Environmental clearance surveys would be performed at the Project site prior to commencement of construction activities. The boundaries of the Project would be delineated and marked prior to grading and site preparation. Where necessary, areas to be avoided in compliance with applicable Minimization Measures (Section 2.6.2) would be flagged with appropriate buffers to prevent impacts. Temporary tortoise exclusion fencing would be installed around the perimeter of the Project site to prevent desert tortoises from moving into the site during construction. In areas where vegetation would be mowed or trimmed rather than removed, vegetation would be maintained at a height of 18 inches, and the roots would be left intact to facilitate regrowth following the completion of construction. Equipment and vehicles would drive over and crush mowed vegetation during construction, if necessary.

Portions of the site would then be graded, and vegetation would be removed or mowed in selected areas, as needed for construction (see below). In some areas, small amounts of explosives may be used to crack and remove rock material that is difficult to grade using other methods. This blasting would occur only after biological monitors have cleared the site (see **Section 2.7.2.1**). Vegetation would be permanently cleared for new access roads and the O&M buildings. Vegetation would also be mowed and trimmed, as needed, in the solar block locations to create a safe work environment and avoid interference with construction activities.

All grading (i.e., cut and fill) required for the Project would use onsite cut material, and no fill material would be exported or imported. Grading would be required for the O&M building, BESSs, and access roads within the solar field. A small graded pad would be required within each solar array to accommodate the inverter and transformer unless they are installed on driven piers. The solar field would require a positive natural terrain slope of less than five percent. Grading and associated facilities would permanently disturb up to 271 acres within the solar field.

Gravel/Aggregate/Concrete – Concrete would be trucked in and poured in place for mounting structure and building foundations. Aggregate material would be used for parking areas and access roads, and riprap material may be needed for erosion control. The smallest practicable size riprap material will be used to minimize the likelihood of tortoise entrapment; the applicant will coordinate specific sizes and locations with the USFWS as material availability and engineering constraints are known. A 6-inch-deep layer of aggregate stone would be installed in any low water crossings. This material would be sourced from the Moapa Band's existing gravel materials operation located immediately adjacent to the solar fields, as available. After the O&M building is constructed, the surrounding area would be appropriately surfaced for parking, roads, material storage, and the erection of a temporary office for use during the construction phase of the Project.

Solar Block Assembly and Construction – Construction work within each solar block would generally proceed as follows:

- Install foundations for inverter stations;
- Prepare trenches for underground cables;
- Install underground cable, as required;
- Backfill trenches;
- Install concrete footings for transformers;
- Install inverter station and transformer equipment;
- Install steel posts and tracker assemblies;
- Install solar panels;
- Perform electrical terminations; and
- Inspect, test, and commission equipment.

The solar blocks would be installed with solar panels mounted on steel tracker assemblies which would be supported by steel posts. The structural steel posts may be galvanized to prevent potential damage from corrosive soils, as needed. Trucks would be used to transport the solar panels to the solar field. Final solar field assembly would require small cranes, tractors, and forklifts.

Additional Solar Field Construction **-** Cable trenches within the solar fields would contain electrical conductors for low-voltage power collection and fiber optic cables for equipment communication. Trenches would vary between 2 to 5 feet wide and 2 to 5 feet deep. Trench excavation would be performed with conventional trenching equipment and excavated soil would be placed adjacent to the trench and used as backfill once installation is complete.

Installation of electrical equipment and necessary infrastructure to energize the equipment would consist primarily of the following tasks:

- Equipment—Installation of all electrical equipment including circuit breakers, switches and switchgear, lighting, and control systems, including SCADA equipment.
- Cables—Installation of all cables necessary to energize the equipment. Cables would be routed via cable trays, above-grade conduits, and below-grade conduit.
- Grounding—All equipment and structures would be grounded as necessary.
- Telecommunications—Communication systems including T-1 internet cables, fiber optic, and telephone would be installed during electrical construction.

Laydown Yards – Approximately 4 laydown yards totaling 12 acres would be established within the solar field. The laydown yards would be used to stage equipment during construction. Vegetation within the laydown yards would be mowed, but these areas would not need to be graded or compacted. Where practical, laydown yards would be developed into solar blocks as construction progresses and the laydown yards are no longer needed.

Support Facilities Construction – Following grading and site preparation, concrete foundations would be poured to support the permanent O&M building located near the solar field entrance. An area adjacent to the building would be developed for parking.

A septic tank and leach field may be constructed for the collection, treatment, and disposal of sanitary waste. Excavation for the septic tank would be completed with the use of backhoe, and excavated soil would be placed adjacent to the septic tank location and used as backfill once installation is complete; excess soil would be reused onsite, if necessary.

A temporary construction office consisting of a trailer or storage container (e.g. Connex Box) would be placed on site during construction. The construction offices would be located at the solar field entrance; the temporary office sites would be adjacent to the O&M building. Laydown yards, water holding tanks, portable toilets, and generators would also be used during construction. Following construction, permanent fencing would be installed around the solar field perimeter.

The design and construction of the buildings and associated water/wastewater systems would be consistent with Clark County building standards and approved by the Moapa Band and BIA.

2.3.2 Offsite Facilities

Access Roads –Construction of new access roads will involve grading and filling with dirt to create a 15 to 24-foot-wide roadbed. Road berms will also be constructed using fill dirt obtained from the Project area. Any low water crossings will be filled with aggregate stone to a depth of approximately 6 inches. New access roads would be left in place after construction is completed; existing access roads used by the Project would not be upgraded or widened, but some maintenance – including grading and vegetation removal – may be required depending on their condition. All grading (i.e., cut and fill) required for the Project would use onsite cut material, and no fill material would be expected to be exported or imported.

Collector Line Construction – It is estimated that construction of the collector lines would result in permanent disturbance of the entire ROW (21 acres), though the actual permanent disturbance would likely be less than this. A total of three miles of collector line would be constructed. Of this, up to one mile may be installed overhead where the collector lines cross the BLM-managed designated utility corridor.

The primary stages of the underground collector line installation would be trenching, installing conduit, backfilling, and lastly, pulling wire through the conduit. The collector lines and fiber optic lines would be installed in trenches up to 10 feet wide and four feet deep and subsequently backfilled.

The primary stages used to construct the overhead collector lines, if necessary, to avoid conflicts with underground utilities in the BLM-managed designated utility corridor, would be foundation installation, structure installation, and conductor stringing.

Wooden poles used for the overhead collector line structures would be directly embedded into the ground and would be installed by auguring holes and placing the poles into the holes using backhoes or heavy lifter vehicles. A 100-foot by 40-foot area would be needed around each of the wooden poles for construction (20 poles). These areas would be disturbed during construction activities and would be cleared of vegetation only as required for safety and efficiency. The primary equipment used in setting foundations would include concrete trucks, auger rigs, pickup trucks, cranes, and front-end loaders. Excavated spoil material would be spread around the temporary work areas.

After the poles are erected, the conductors and static wires would be strung between the poles and attached. Equipment would pull the conductors and wires into place from designated pull and tensioning sites. These sites would be approximately 120 feet wide by 500 feet long and located within the ROW. Stringing would likely be conducted one conductor at a time, with all equipment in the same location until all lines are in place. Wire stringing is typically completed with heavy-duty trucks equipped with a telescoping boom lift.

2.3.3 Site Stabilization, Protection and Reclamation

Appropriate erosion and dust-control measures would be implemented during construction of the solar field and collector line to prevent increased dust and erosion. The Project Applicant has prepared a draft Site Restoration Plan (**Appendix D** of the DEIS) which documents erosion- and dust-control measures to be implemented during and/or immediately after construction for the areas that are temporarily disturbed. This includes soil stabilization measures to prevent soil from being eroded by stormwater runoff; establishment of temporary laydown areas on level ground; avoiding blading in laydown areas; and minimizing and controlling dust generated during construction by applying water and/or agency-approved palliatives.

Soil stabilization measures in the Site Rehabilitation and Restoration Plan include BMPs to protect the soil surface by covering or binding soil particles. Depending on the site preparation technique, organic matter could be worked into the upper soil layers or mulched onsite and redistributed into the fill (except under equipment foundations, trenches and roadways) to aid in dust control. Prior to construction, the construction contractor would also develop and implement an erosion control plan for the Project and incorporate measures required by regulatory agency permits and contract documents as well as other measures selected by the contractor. Project specific BMPs would also be designed by the contractor to protect the soil surface from erosion and would be included in the Stormwater Pollution Prevention Plan (SWPPP). Disturbed areas would also be seeded and hay, straw mulch, or approved material would be applied to aide in stabilizing disturbed areas.

During construction, up to 200 acre-feet (AF) of water would be required for dust control and would be obtained from the Moapa Band. If needed to control dust during construction, agency-approved palliatives would be applied to newly constructed access roads.

2.3.4 Construction Staff Schedule

Construction staff for the Project would consist of laborers, craftsmen, supervisory personnel, support personnel, and construction management personnel. Construction staff is anticipated to include an average of 300 workers, with a peak not expected to exceed 750 workers at any given time. Most construction staff would commute daily to the jobsite from within Clark County, primarily from the Reservation and the Las Vegas area. The Applicants would prepare a Worker Environmental Awareness Program (WEAP) to address Project-specific safety, health and environmental concerns. All construction staff would be required to complete WEAP training.

Construction generally would occur between 5:00 a.m. and 5:00 p.m., Monday through Friday, but could occur seven days a week. Additional hours could be necessary to make up schedule deficiencies or to complete critical construction activities. For instance, during hot weather, it may be necessary to start work earlier (e.g., at 3:00 a.m.) to avoid work during high ambient temperatures. Further, construction would require some nighttime activity for installation, refueling equipment, staging material for the following day's construction activities, service or electrical connection, or inspection, quality assurance/control, and testing activities. Nighttime activities would be performed with temporary lighting. Some activities may require construction activities 24 hours per day, 7 days per week.

2.4 Operations and Maintenance

2.4.1 Onsite Facilities

The O&M activities for the solar field includes regular monitoring, periodic inspections and any needed maintenance. It is anticipated that up to five full time-equivalent (FTE) positions would be required during O&M for the Project. This workforce would include administrative and management personnel, operators, and security and maintenance personnel. Typically, up to three staff would work during the day shift (sunrise to sunset) and the remainder during the night shifts and weekends.

During the first year of operation, inspections would be more frequent to address identified post-construction issues. Periodic routine maintenance would include monthly, quarterly, semi-annual, and annual inspections and service. Major equipment maintenance would be performed approximately every 10 to 15 years.

Solar panel washing would be conducted periodically (likely on foot and by hand) as needed to improve power generation efficiency. Dust would be controlled and minimized by applying water and palliatives. The water requirements would be provided from existing water rights owned by the Moapa Band and leased to the Applicants. Water demand for panel washing and human use during O&M activities would not exceed 20 AF per year. A small water treatment system may be installed to provide deionized water for panel washing.

O&M would require the use of vehicles and equipment including crane trucks for minor equipment maintenance. Additional maintenance equipment would include forklifts, manlifts, and chemical application equipment for weed control. Pick-up trucks would be used daily onsite. No heavy equipment would be used during normal operations.

Vegetation within the solar blocks would be allowed to grow back following construction and would be maintained at a height of 18 inches during O&M. Vegetation would be trimmed as needed using a mower and/or string trimmers.

Safety precautions and emergency systems would be implemented as part of the design and construction of the Projects to ensure safe and reliable operation. Administrative controls would include classroom and hands-on training in O&M procedures, general safety items and a planned maintenance program. These would work with the system design and monitoring features to enhance safety and reliability. The Project would also have a Spill Prevention and Emergency Response Plan (**Appendix E** of the DEIS), which would address potential emergencies including chemical releases, fires, and injuries. All employees would be provided with communication devices (cell phones, and/or walkie-talkies) to provide aid in the event of an emergency.

The Applicant has prepared a draft Integrated Weed Management Plan (**Appendix F** of the DEIS) for the Project as required by BIA and the BLM (BLM 2007; BIA 2014). Herbicides would be used to control noxious and invasive weeds, if required. Pest control may also be required, including control of rodents and insects inside of the O&M facility.

The primary wastes generated during O&M activities would be nonhazardous solid and liquid wastes. Limited quantities of hazardous materials would be used and stored in the solar field. The BESSs would contain lithium-ion batteries that would need replacement periodically; used batteries would be disposed of according to local, State, and Federal regulations. Nonhazardous wastes produced by O&M activities

would include defective or broken electrical materials and batteries, empty containers, typical refuse generated by workers and small office operations, and other miscellaneous solid wastes. The Spill Prevention and Emergency Response Plan (**Appendix E** of the DEIS) prepared by the Applicant addresses waste and hazardous materials management, including BMPs related to storage, spill response, transportation, and handling of materials and wastes. Waste management would emphasize the recycling of wastes where possible and would identify the specific landfills that would receive waste that cannot be recycled.

The fire protection water system would be supplied from the water storage tank(s) located near O&M building. The fire protection water system would have the appropriate fire department connections and would be consistent with Clark County requirements. The Applicant would prepare and implement a Fire Management Plan (**Appendix G** of the DEIS) for O&M activities.

2.4.2 Offsite Facilities

The collector lines would operate continuously throughout the life of the Projects. Operational activities associated with the collector lines would involve periodic inspection and occasional maintenance and repair. Periodic visual inspections would be conducted of the above ground inverter stations for underground collector lines, and insulators, overhead grounds, and structure hardware for overhead collector lines, if installed. Collector line access roads are not expected to require frequent maintenance but could be graded as needed to provide access to structures for maintenance activities.

Maintenance of overhead sections of collector lines would also include removal of all vegetation to bare ground within a 10-foot radius around each structure. This vegetation treatment is called Defensible Space around Poles (DSAP) and protects the poles from fire, prevents fire ignition from electrical equipment that may spark, and provides a safe area for access during inspection and maintenance. Other O&M activities, as needed, could include insulator washing, periodic aerial inspections, repair or replacement of underground collector lines and overhead conductors and insulators, and response to emergency situations (e.g. outages) to restore power. With the exception of emergency situations and outages, most maintenance work would take place during daylight hours.

2.5 Decommissioning

The anticipated operational life of the Project would be up to 50 years, after which the Project would be taken out of service and associated onsite and offsite facilities would be removed. Decommissioning would involve removal of the solar blocks and other facilities, with some buried components (such as cabling) potentially remaining in place.

To ensure that the permanent closure of the facility does not have an adverse effect, the Applicant has prepared a draft Decommissioning Plan included as **Appendix H** in the DEIS. The final Decommissioning Plan would be developed near the time of decommissioning in coordination with the Moapa Band and BIA, with input from other agencies as appropriate. The final plan would address future land use plans, removal of hazardous materials, impacts and mitigation associated with closure activities, schedule of closure activities, equipment to remain on the site, and conformance with applicable regulatory requirements and resource plans.

The collector line would also be taken out of service in accordance with local, state and federal regulations. Prior to removal, laydown yards would be delineated along the collector lines, as appropriate.

It is anticipated that decommissioning of the collector line would be completed withing the boundaries of the existing footprint of the Project.

Following decommissioning, the disturbed areas would be stabilized and allowed to revegetate. Native species would be used for revegetation, if appropriate, and seeding using BLM and BIA recommended seed mixes. Re-seeding would take place during appropriate months for optimal regrowth. Seed would be planted using drilling, straw mulching, or hydromulching, as appropriate.

2.6 Management Plans, Minimization Measures, and Compensatory Mitigation

2.6.1 Management Plans

The Applicant would be required to prepare the following management plans, which would be submitted to the Moapa Band of Paiutes, BIA, BLM, and USFWS (as appropriate) for approval:

- Integrated Weed Management Plan
- Raven Control Plan
- Decommissioning Plan
- Site Restoration Plan
- Dust Abatement Plan
- Spill Prevention and Emergency Response Plan
- Health and Safety Program
- Fire Management Plan
- Hazardous Materials and Waste Management Plan
- Stormwater Pollution Prevention Plan
- Site Drainage Plan
- Traffic Management Plan
- Workers Environmental Awareness Program
- Bird and Bat Conservation Strategy

2.6.2 Minimization Measures

The following proposed minimization measures would be implemented as part of the Project proposed by the Applicant to avoid or reduce environmental impacts associated with the proposed action to federally protected species. Minimization will include the general conservation strategies (i.e., BMPs), as well as adhere to the specific desert tortoise minimization measures and comply with the terms and conditions of the USFWS BO issued for this Project.

2.6.2.1 Construction Minimization Measures

The following measures would be implemented to reduce effects on the desert tortoise and other terrestrial and avian wildlife species during construction, operation, and maintenance:

1. **Construction area flagging**. Work areas will be flagged prior to beginning construction activities and disturbance confined to the work areas. A biological monitor will escort all survey crews on site prior to construction. All survey crew vehicles will remain on existing roads and stay within

the flagged areas to the maximum extent practicable. In cases where construction vehicles are required to go off existing roads, a biological monitor (on foot) will precede the vehicles.

2. **Desert tortoise fencing**. Temporary tortoise-proof fencing will be installed around the boundary of the solar facility. Biological monitors under supervision of an authorized biologist (approved by USFWS) will be present during fence installation to relocate all tortoises in harm's way to outside the work area. Additional clearance surveys and activities will be conducted after completion of the tortoise fence to ensure that no tortoises remain fenced inside the construction boundaries.

   Fence specifications will be consistent with those approved by USFWS (USFWS 2009b). Tortoise guards will be placed at all road access points where desert tortoise-proof fencing is interrupted to exclude desert tortoises from the Project footprint. Gates or tortoise exclusion guards will be installed with minimal ground clearance and shall deter ingress by desert tortoises. The temporary tortoise-proof fencing will be removed once the Project is commissioned allowing tortoises to re-occupy the site during operations.

   During the tortoise activity seasons (April – May, September - October), all new fences will be checked twice a day for the first two weeks after construction, or the first two weeks after tortoises become active if fence construction occurs in the winter, including once each day immediately before temperatures reach lethal thresholds. After the first two weeks, all tortoise exclusion fencing will be inspected monthly during construction, quarterly for the life of the Project, and immediately following all major rainfall events. Any damage to the fence will be repaired within two days of observing the damage.

3. **Field Contact Representative.** The BIA and Applicant will designate a Field Contact Representative (FCR) who will be responsible for overseeing compliance of the Terms and Conditions of the BO. The FCR will be onsite during all active construction activities that could result in the "take" of a desert tortoise. The FCR will have the authority to briefly halt activities that are in violation of the desert tortoise protective measures until the situation is remedied.

4. **Authorized desert tortoise biologist.** All authorized desert tortoise biologists (and monitors) are agents of BIA and USFWS and will report directly to BIA, USFWS, BLM, and the Applicant concurrently regarding all compliance issues and take of desert tortoises; this includes all draft and final reports of non-compliance or take. Authorized desert tortoise biologists, monitors, and the FCR will be responsible for ensuring compliance with all conservation measures for the Project as described in the BO. Prior to starting construction, authorized biologist(s) will submit documentation of authorization from the USFWS and approval of NDOW. Potential authorized desert tortoise biologists will submit their statement of qualifications to USFWS.

   An authorized desert tortoise biologist will record each observation of a desert tortoise handled in the tortoise monitoring reports. This information will be provided directly to BIA, USFWS, and BLM.

5. **Biological monitoring.** Under supervision of an authorized biologist, biological monitors will be present at all active construction locations (not including the solar field after it has been fenced with desert tortoise fencing and clearance surveys have been completed). Desert tortoise monitors will provide oversight to ensure proper implementation of protective measures; record and report desert tortoises and tortoise sign observations in accordance with approved protocol;

and report incidents of noncompliance in accordance with the BO and other relevant permits. The biological monitor(s) will survey the construction area to ensure that no tortoises are in harm's way. If a tortoise is observed entering the construction zone, work in the immediate vicinity will cease until the tortoise moves out of the area. Tortoises found above ground during construction activities will be moved offsite by an authorized biologist following the protocols described in the Desert Tortoise Translocation Plan.

6. **Desert tortoise clearance surveys and translocation.** After installation of tortoise fencing around the perimeter of the solar facility and prior to surface-disturbing activities, biological monitors and the authorized desert tortoise biologists who supervise them will conduct a clearance survey to locate and remove all desert tortoises from harm's way including those areas to be disturbed, using techniques that provide full coverage of construction zones (USFWS 2009b).

   No surface-disturbing activities shall begin until two consecutive surveys find no live tortoises. In sectors or zones where a live tortoise is found, surveys will be repeated until the two-pass standard is met.

   An authorized biologist will excavate burrows potentially containing desert tortoises located in the area to be disturbed with the goal of locating and removing all desert tortoises and desert tortoise eggs. Typical tortoise burrows have a characteristic shape with a flat bottom and arched top similar to a capital letter 'D' with the flat side down. Clearance will include evaluation of caliche caves and dens will also be evaluated, as tortoises are known to shelter there. Caliche is a naturally occurring hardened cemented soil composed of calcium carbonate, gravel, sand, and silt. The practice of excavating every obvious tortoise burrow will not be done as it has shown to be ineffective and inefficient in locating tortoises; instead, all obvious tortoise burrows will be scoped for presence and possible extraction. 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 USFWS-approved guidance (USFWS 2009b). If any active tortoise nests are encountered, USFWS 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 will remain in place to allow for tortoise use during operations. Outside construction work areas, all potential desert tortoise burrows and pallets within 50 feet of the edge of the construction work area will be flagged. If a desert tortoise occupies a burrow during the less-active season, the tortoise may be temporarily penned or will be translocated following USFWS approval, contingent upon weather conditions and health assessment results. No stakes or flagging will be placed on the berm or in the opening of a desert tortoise burrow. Desert tortoise burrows will not be marked in a manner that facilitates poaching. Avoidance flagging will be designed to be easily distinguished from access route or other flagging and will be designed in consultation with experienced construction personnel and authorized biologists. This flagging will be removed following construction completion.

   An authorized desert tortoise biologist or biological monitor will inspect areas to be backfilled immediately prior to backfilling. Burrows with the potential to be occupied by tortoises within the construction area will be searched for presence. In some cases, a fiber optic scope will be used to determine presence or absence within a deep burrow.

   A translocation plan following the 2019 guidance will be approved by the USFWS prior to the start of construction (USFWS 2019a). The plan identifies potentially suitable recipient locations,

control site options, post-translocation densities, procedures for pre-disturbance clearance surveys and tortoise handling, as well as disease testing and post-translocation monitoring and reporting requirements. Tortoises found within 500 meters of the project boundary (fenceline) will be relocated outside of the nearest fence to a location that contains suitable habitat; tortoises found within the interior of the project site (>500 meters from a boundary fence) will be translocated to somewhere within the 4,770-acre lease area that contains suitable habitat.

BIA and the Applicant will have an authorized biologist relocate tortoises following the USFWS-approved protocol (USFWS 2009b) and according to the approved translocation plan. If the USFWS releases a revised protocol for handling desert tortoises before initiation of Project activities, the revised protocol will be implemented. The relocation/translocation effort will adhere to the following procedures as well as those stipulated in the BO Terms and Conditions:

Tortoises found within the project area will be relocated outside of the ROW to an area of suitable habitat as directed by the USFWS. Translocation will follow installation of exclusionary tortoise fence, as determined in coordination with the agencies. Translocation events will occur to specific locations outlined in the approved project-specific translocation review package (TRP) and disposition plan, based on construction and translocation timing considerations for each tortoise. The project will employ two strategies for translocating tortoises, depending on the initial capture location of each animal.

1. **Short-distance Relocations:** Tortoises found within 500 meters of the solar site fenceline or within the gen-tie construction area would be relocated to areas immediately outside of the project's temporary exclusion fencing or outside of harm's way in the vicinity of the gen-tie ROW. Following the completion of construction, the exclusion fencing would be removed; the permanent site fencing would be permeable to desert tortoises and existing vegetation on the project site is expected to be left relatively intact during construction and operation of the project. Therefore, the short-distance translocation strategy is designed to allow tortoises to freely re-occupy the site following construction.

2. **Indirect Translocation or return to project site:** Tortoises found in the interior of the solar site fenceline (>500 meters from the exclusion fence) would be moved to temporary pens for the duration of construction and may be returned to the solar facility interior (as close to the original capture location as possible) as soon as construction activities are complete. Penned tortoises may be translocated to an alternate suitable location following construction, as determined on a case-by-case basis through consultation with the USFWS.

- An authorized biologist will perform health assessments and draw blood samples for each tortoise to be relocated. Blood testing will determine whether any desert tortoise suffer from upper respiratory tract disease (URTD).

- Tortoises will be temporarily tagged with combination global positioning system (GPS)/radio-transmitter tags so that the tortoise can be retrieved and handled as directed by the USFWS if the results of blood work indicate that a tortoise is infected with URTD.

- When determining a release location for an individual tortoise, release site preference will be to find a like-for-like shelter resource. Every attempt will be made to find similar cover sites and habitat to that at the location of each individual on the Project site, otherwise all translocatees

shall be released at the most appropriate and available unoccupied shelter sites (e.g., soil burrows, caliche caves, rock caves, etc.). Because of the impermanent nature of soil burrows and cave availability, prior to submitting the final Disposition Plan and determining exact areas of release, potential release sites will be re-investigated for existing burrows and caliche or rock caves that can be used for shelter sites. Known active/inactive tortoise burrows discovered during the surveys would be re-investigated for this purpose. If insufficient shelter sites exist in an area to be used for translocation, the Applicant shall coordinate with the agencies to determine the most appropriate course of action, such as reviewing an alternate release site, modifying/improving existing burrows and partial burrows, or artificially creating burrows per USFWS protocols, prior to translocation. The number of artificial burrows per translocated tortoise will be included in the TRP/Disposition Plan, as feasible, and may include more than one burrow per tortoise to increase translocation success (i.e. tortoises remaining within their release locations). The disposition of relocated tortoises will be evaluated and reported on following the Terms and Conditions of the BO.

- If a tortoise voids its bladder while being handled, it will be given the opportunity to rehydrate before release. Tortoises will be offered fluids by soaking in a shallow bath, or an authorized desert tortoise biologist will administer nasal-oral fluid, or injectable epicoelomic fluids. Any tortoise hydration support beyond offering water or shallow soaking would only be provided by an authorized biologist who has received advanced training in health assessments and been specifically approved by USFWS for these procedures.

7. **Biological Sample Archiving.** Any samples collected during desert tortoise health assessments that are not used for tests would be archived with UCLA, and appropriate fees would be paid by the Applicant. The fee would be assessed at the time of sample collection and adjusted for inflation using the Bureau of Labor Statistics' consumer price index. As of October 2020, the archiving fee amount was $3,000.

8. **Integrated Weed Management Plan**. Prior to construction, an Integrated Weed Management Plan will be developed that includes measures designed to reduce the propagation and spread of designated noxious weeds, undesirable plants, and invasive plant species, or as determined by the cooperating or reviewing agencies (BIA, BLM, NDOW, etc.). Measures in the plan will include, but are not limited to the following:

   Areas with current weeds will be mapped. Topsoil with the presence of weeds will not be salvaged and reused elsewhere in the Project. The topsoil from such areas will be disposed of properly.

   Inspect heavy equipment for weed seeds before they enter the Project area. Require that such equipment be cleaned first to remove weed seeds before being allowed entry. Clean equipment that has been used in weed infested areas before moving it to another area.

   Any straw or hay wattles are used for erosion control must be certified weed free.

9. **WEAP.** A WEAP will be presented to all personnel onsite during construction. This program will contain information concerning the biology and distribution of the desert tortoise, desert tortoise activity patterns, and its legal status and occurrence in the proposed Project area. The program will also discuss the definition of "take" and its associated penalties, measures designed to minimize the effects of construction activities, the means by which employees limit impacts,

and reporting requirements to be implemented when tortoises are encountered. Personnel will be instructed to check under vehicles before moving them as tortoises often seek shelter under parked vehicles. Personnel will also be instructed on the required procedures if a desert tortoise is encountered within the proposed Project area. WEAP training will be mandatory, as such, workers will be required to sign in and wear a sticker on their hardhat to signify that they have received the training and agree to comply.

10. **Access roads.** Construction access will be limited to the Project area and established access roads. Vehicle travel off established internal site access roads will be minimized as practicable.

11. **Speed limits and signage.** Until the desert tortoise fence has been constructed, a speed limit of 15 miles per hour will be maintained during the periods of highest tortoise activity (March 1 through November 1) and a limit of 25 mph during periods of lower tortoise activity. This will reduce dust and allow for observation of tortoises in the road. Speed-limit and caution signs will be installed along access roads and service roads. After the tortoise proof fence is installed and the tortoise clearance surveys are complete, speed limits within the fenced and cleared areas will be established by the construction contractor and based on surface conditions and safety considerations and remain with limits established by USFWS in the BO.

12. **Trash and litter control.** Trash and food items will be disposed properly in predator proof containers with resealing lids. Trash will be emptied and removed from the Project site on a periodic basis as they become full. Trash removal reduces the attractiveness of the area to opportunistic predators such as ravens, coyotes, and foxes. Measures to reduce the subsidy of ravens and other avian predators/scavengers are discussed in greater detail in the Raven Control Plan (**Appendix K** of the DEIS).

13. **Raptor control.** The applicant will inspect structures annually for nesting ravens and other predatory birds and report observations of nests to the USFWS and BIA. Transmission line support structures and other facility structures will be designed to discourage their use by raptors for perching or nesting (e.g., by use of anti-perching devices) in accordance with the most current APLIC guidelines (APLIC 2006, 2012). In addition to increasing desert tortoise protection, following these guidelines during transmission line construction will reduce the possibility of avian electrocution and other hazards.

14. **Overnight hazards.** No overnight hazards to desert tortoises (e.g., auger holes, trenches, pits, or other steep-sided depressions) will be left unfenced or uncovered; such hazards will be eliminated each day prior to the work crew and monitoring biologists leaving the site. All excavations will be inspected for trapped desert tortoises at the beginning, middle, and end of the workday, at a minimum, but will also be continuously monitored by a biological monitor or authorized biologist. Should a tortoise become entrapped, the authorized biologist will remove it immediately.

    When outside of the fenced areas of the Project site, Project personnel will not move construction pipes greater than 3 inches in diameter if they are stored less than 8 inches above the ground until they have inspected the pipes to determine the presence or absence of desert tortoises. As an alternative, the Applicant may cap all such structures before storing them outside of the fenced area.

15. **Blasting.** If blasting is required in desert tortoise habitat, detonation will only occur after the area has been surveyed and cleared by an authorized desert tortoise biologist no more than 24 hours prior. A 200-foot radius buffer area around the blasting site will be surveyed and all desert tortoises above ground within this 200-foot buffer of the blasting site will be moved 500 feet from the blasting site, placed in unoccupied burrow, and temporarily penned to prevent tortoises that have been temporarily relocated from returning to the site. Tortoises located outside of the immediate blast zone and that are within burrows will be left in their burrows. All burrows, regardless of occupied status, will be stuffed with newspapers, flagged, and location recorded using a global positioning system (GPS) unit. Immediately after blasting, newspaper and flagging will be removed. If a burrow or cover site has collapsed that could be occupied, it will be excavated to ensure that no tortoises have been buried and are in danger of suffocation. Tortoises removed from the blast zone will be returned to their burrow if it is intact or placed in a similar unoccupied or constructed burrow.

16. **Penning.** Tortoises may be held *in-* or *ex-situ* (e.g., if temperatures do not allow for translocation, or if tortoises do not pass the health assessment) for a maximum of 12 months. Previously constructed and approved enclosure pens are present adjacent to the Project site and would be used if any quarantine is necessary. Quarantine is not the preferred option for tortoises to be translocated and would only be used as necessary, in coordination with USFWS. This penning is not the same as the temporary penning described in the blasting measure.

17. **Stormwater Pollution Prevention Plan.** The applicant will oversee the establishment and functionality of sediment control devices as outlined in the stormwater pollution prevention plan.

18. **Tortoise Encounters During Construction.** If a tortoise is injured as a direct or indirect result of Project construction activities, it shall be immediately transported to a veterinarian or wildlife rehabilitation facility and reported within 24 hours or the next workday to the Service. Any Project construction-related activity that may endanger a desert tortoise shall cease in the area if a desert tortoise is encountered on the Project site. Project construction activities may resume after an Authorized Biologist removes the desert tortoise from danger or after the desert tortoise has moved to a safe area.

2.6.2.2 Operations and Maintenance Minimization Measures

The following minimization measures will be implemented during O&M of the Proposed Action to reduce effects on the desert tortoise and other species:

19. **WEAP Training.** WEAP training will be required for all O&M staff forthe duration of the Project. In addition to an overview of minimization measures, the training will include specific BMPs designed to reduce effects to the desert tortoise. All Project personnel will check under vehicles or equipment before moving them. If Project personnel encounter a desert tortoise, they will avoid the tortoise. The desert tortoise will be allowed to move a safe distance away prior to moving the vehicle

20. **Biological Monitoring.** A biological monitor(s) will be present during ground-disturbing and/or off-road O&M activities outside of the fenced solar facility to ensure that no tortoises are in harm's way. Tortoises found above ground during O&M activities will be avoided or moved by an authorized biologist, if necessary. Pre-maintenance clearance surveys followed by temporary exclusionary fencing also will be required if the maintenance action requires ground or

vegetation disturbance. A biological monitor will flag the boundaries of areas where activities would need to be restricted to protect tortoises and their habitat. Restricted areas will be monitored to ensure their protection during construction.

21. **Speed Limits.** Speed limits within the project area, along transmission line routes, and access roads will be restricted to less than 25 mph during O&M. Speed limits in the solar facility will be restricted to 15 mph during O&M.

22. **Trash and Litter Control and Other Predator Deterrents.** Trash and food items will be disposed properly in predator proof containers with resealing lids. Trash will be emptied and removed from the Project site on a periodic basis as they become full. Trash removal reduces the attractiveness of the area to opportunistic predators such as ravens, coyotes, and foxes. To reduce attractants for birds, open containers that may collect rainwater will be removed or stored in a secure or covered location.

2.6.2.3 Decommissioning Minimization Measures

The same minimization measures used for construction will be used for decommissioning.

2.6.3 Compensatory Mitigation

The applicant will pay the following required compensatory mitigation requirement:

23. **Habitat Compensation.** Prior to surface disturbance activities within desert tortoise habitat, the Project proponent will pay a one-time remuneration fee (per acre of proposed disturbance). The remuneration fees will be submitted to the account that USFWS designates in the BO. The compensation for habitat loss under Section 7 of the Endangered Species Act (ESA) is an annually adjusted rate, currently $923/acre (subject to change annually on March 1).

24. **Habitat Use Study.**The Project proponent will work with the University of Nevada, Las Vegas (UNLV), U.S. Geological Survey (USGS), or other agency to design and implement a 2-3-year study to compare on-site and off-site desert vegetation and climate (e.g., annual and perennial plant growth and cover, ambient temperature) to address metrics of habitat change, including how desert tortoises use the vegetation on site for forage and cover. Results from tortoise monitoring as approved in the Project's Desert Tortoise Translocation Plan (in draft) would inform the tortoise use portion of this study.

3 ACTION AREA AND EXISTING CONDITIONS

3.1 Action Area

Section 7 (a)(2) of the ESA defines the "Action Area" as the areas to be affected directly or indirectly by the federal action. For this Project, the Action Area is defined as 1) the up to 1,000 acres of direct impacts within the lease study area, 2) the approximately 30 miles of ROWs (approximately 95 acres) for the collector line and access roads, and 3) the area of indirect impacts, or recipient areas for short- and long-distance tortoise translocations (the fenceline encompassing up to 1,000 acres, plus the 831-acre recipient site, plus the 1.5 km, 4,116-acre recipient site buffer)(**Figure 3-1**).

The Action Area is located within the Mojave Desert approximately 20 miles north of Las Vegas, Nevada, largely within the Moapa River Indian Reservation. The Mojave Desert is cooler and wetter than the Sonoran Desert to the south and warmer and drier than the high-elevation Great Basin Desert to the north (Brown 1994).

The Mojave Desert receives less than 13 inches (254 mm) of rain a year and is generally between 3,000 and 6,000 feet (910 and 1,800 m) in elevation. The Mojave Desert is an area with temperature extremes and four distinct seasons. Winter months bring temperatures dipping to below 20°F (-7°C) on valley floors, and below 0°F (-18°C) at higher elevations. Storms moving from the Pacific Northwest can bring rain and snow across the region — more often, the rain shadow created by the Sierra Nevada as well as mountain ranges within the desert such as the Spring Mountains result in storms that bring only clouds and wind. In longer periods between storm systems, winter temperatures in valleys can approach 80°F (27°C).

The Mojave Desert occupies portions of southeastern California, southern Nevada, southwestern Utah and northwestern Arizona. The Mojave Desert region, and the area surrounding the Action Area specifically, displays typical basin and range topography.

Eagle Shadow Mountain Substation

15

Project Components

- Collector Lines
- Existing Access
- New Access
- Lease Area
- Solar Panel Installation Area
- Laydown Yard

General Features

- Existing Substation
- Interstate
- Major Highway
- Railroad
- Designated Utility Corridor
- Recipient Site - Release Zone
- Recipient Site - Buffer

0 0.25 0.5 0.75 1

Miles

North American Datum 1983
State Plane Nevada East Feet

SOUTHERN BIGHORN SOLAR II PROJECT

FIGURE 3-1
ACTION AREA

Map Extent: Clark County, Nevada

Date: 09-14-20 | Author: rnc

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3.2 Habitat and Vegetation

Land cover types in the study area were identified using the Southwest Regional GAP Analysis Project data (Lowry et al. 2005; USGS 2005), which uses satellite imagery to delineate land cover types (vegetation communities). Vegetation in the study area is primarily composed of Sonoran-Mojave Creosotebush-White Bursage Desert Scrub (creosotebush scrub), while North American Warm Desert Wash (desert wash) and Sonoran-Mojave Mixed Salt Desert Scrub (salt scrub) account for the remainder of the vegetation in the study area. Disturbed areas, both within and adjacent to the Action Area, are associated with multiple dirt roads and less impacted offroad vehicle trails, adjacent railroad and interstate highway (to the east) and adjacent transmission line and natural gas line corridors (to the north and west) and substations. A very small area of developed land (dirt access road) is also present. **Table 3-1** lists the acreages of the various vegetative cover types occurring within the Project area.

3.2.1.1 Table 3-1 - Vegetative Covertypes within the Project Area Solar Site and ROWs

Project Component	Vegetation Covertype	Acreage
Solar Site Lease Area	Sonoran-Mojave Creosotebush-White Bursage	725
	North American Warm Desert Wash	190
	Sonoran-Mojave Mixed Salt Desert Scrub	84
Existing and New Access Road ROWs	Sonoran-Mojave Creosotebush-White Bursage	48
	North American Warm Desert Wash	13
	Sonoran-Mojave Mixed Salt Desert Scrub	2
	Norther American Warm Desert Pavement	<1
	Developed, Medium – High Intensity	<1
Collector Line	Sonoran-Mojave Creosotebush-White Bursage	16
	North American Warm Desert Wash	4
	PROJECT AREA TOTAL	**1,082**

3.2.2 Sonoran-Mojave Creosotebush-White Bursage Desert Scrub

Creosotebush scrub is typical of the Mojave Desert and is the most abundant vegetation community in the region and within the Action Area. Creosotebush scrub occurs on well-drained sandy flats and bajadas from 150 to 1500 meters elevation in Nevada. Its range extends from the Colorado River on the south to Pahranagat Valley on the north (Wildlife Action Plan Team 2012). This community is typically dominated by creosotebush and white bursage, which can be sparse to moderately dense (2-50 percent cover). Many other shrubs, dwarf-shrubs, and cacti may be present, often as a sparse understory. In southern Nevada, common species include saltbush (*Atriplex spp.*), Mormon tea (*Ephedra nevadensis*), desert wolfberry (*Lycium andersonii*), brittlebush (*Encelia farinosa*), and beavertail cactus (*Opuntia basilaris*). The

herbaceous layer is typically sparse, but can be abundant with ephemerals after spring rains. Herbaceous species common in the region include phacelia (*Phacelia spp*.), desert trumpet (*Erigonium inflatum*), cryptantha (*Cryptantha spp*.), and low woollygrass (*Dasyochloa pulchella*) (USGS 2005).

Creosotebush is used by many desert animals for shelter and forage. Creosotebush roots help to stabilize the soil and support burrows for a variety of reptiles and amphibians, including the desert tortoise and mammals such as the kit fox (*Vulpes macrotis*). Other animals bed in or under the bushes, and birds use them for perching and nesting (Wildlife Action Plan Team 2012).

3.2.3 North American Warm Desert Wash

This community is restricted to the small ephemeral washes within the Project area. The vegetation in desert washes is highly variable, ranging from sparse and patchy to moderately dense. It typically occurs along the banks of washes, but may occur within the channel. The woody layer is typically intermittent and relatively open and is usually dominated by shrubs and small trees such as catclaw (*Senegalia greggii*) and desert willow (*Chilopsis linearis*) (USGS 2005). In southern Nevada, washes tend to support a higher diversity and density of cacti and yucca than the surrounding landscape. Vegetation surveys conducted for previously approved solar projects on the Reservation (BIA 2012, 2014, 2020) identified numerous cacti and yucca species including cholla (*Cylindropuntia spp.*), barrel cactus (*Ferocactus cylindraceus*), hedgehog cactus (*Echinocereus engelmannii var. chrysocentrus*) and Mojave yucca (*Yucca schidigera*). Higher densities of big galleta grass (*Pleuraphis rigida*) are also commonly reported in washes in this region.

3.2.4 Sonoran-Mojave Mixed Salt Desert Scrub

This community is typical of saline basins in the Mojave Desert and most often occurs around the edge of playas. Vegetation is typically composed of one or more saltbush species and other halophytic (salt tolerant) plants such as iodinebush (*Allenrolfea occidentalis*), seepweed (*Suaeda spp.*), and alkali sacaton (*Sporobolus airoides*) (USGS 2005). Salt scrub vegetation is restricted to a small area in the northern portion of the SBSP II lease area.

3.2.5 North American Warm Desert Pavement

The Warm Desert Pavement community is composed of unvegetated to sparsely vegetated (<2 percent) landscapes. This community is common in flat, open basins where exposure to wind has developed a cover of fine to medium gravel coated with “desert varnish.” These areas are subject to extreme temperature variation and support very limited populations of desert scrub species such as creosotebush (*Larrea tridentate*) and Eastern Mojave buckwheat (*Eriogonum fasciculatum*). However, these areas may briefly experience high densities of ephemeral herbaceous vegetation following seasonal precipitation events.

3.3 Wildlife

Species observed in the Action Area during biological surveys for nearby projects on the reservation included birds, mammals and a variety of reptiles. Commonly observed avian species include: black-throated sparrow (*Amphispiza bilineata*), ash-throated flycatcher (*Myiarchus cinerascens*), black-tailed gnatcatcher (*Polioptila melanura*), loggerhead shrike (*Lanius ludovicianus),* common raven (*Corvus corax*), burrowing owl (*Athene cuniclaria*), red tailed-hawk (*Buteo jamaicensis*) and lesser nighthawk (*Chordeiles* sp.) (Newfields 2018a, 2018b). Small mammal residents include kangaroo rats (*Dipodomys spp.*), pack rats (*Neotoma cinerea*) and white-tailed antelope squirrels (*Ammospermophilus leucurus*). Common larger

mammals may include coyotes (*Canis latrans*), kit foxes (*Vulpes macrotis*), and black-tailed jackrabbits (*Lepus californicus*). Reptiles include western whiptail lizards (*Aspidoscelis tigris*), side-blotched lizards (*Uta stansburiana*), horned lizard (*Phrynosoma* sp.), desert iguana (*Dipsosaurus dorsalis*), bull snake (*Pituophis catenifer sayi*), coachwhip (*Masticophis flagellum*) and desert tortoise.

3.4 Ground Water Resources

The Proposed Action is in the Colorado River Basin Region of Nevada's Hydrographic Regions. The Colorado River Basin is one of the larger hydrographic regions in Nevada, covering 5,612 square miles and includes 27 hydrographic areas. The Action Area is located in and around the area called Arrow Canyon Range Cell. The hydrogeology of the Arrow Canyon Range Cell is recognized as unique yet poorly understood (Mifflin and Associates 2001). Seven groundwater management basins are superimposed on the Arrow Canyon Range cell. The Arrow Canyon Range Cell is composed of a series of north-south trending structural blocks related to extensional faulting that are almost entirely composed of Paleozoic carbonate rock (BIA 2012). The Action Area is located within the California Wash hydrographic basin, which is an unconsolidated sand and gravel aquifer.

The basin is a westward-thickening section of Paleozoic carbonate rocks, in part unconformably overlain by generally fine-grained sediments of the Muddy Creek Formation (Longwell et al. 1965). The carbonate-rock terrain that constitutes the Arrow Canyon Range Cell incorporates both recharge areas and one major spring discharged area and is bounded by generally less permeable basin or bedrock lithologies. The California Wash Basin around the Action Area is around 5,000 feet thick (BIA 2012). Regional patterns of precipitation combined with terrain elevation results in the highest mountain ranges receiving the majority of precipitation that becomes recharge. The carbonate terrain is efficient in retaining a relatively high percentage of precipitation as recharge.

Groundwater data from several Reservation monitoring and test wells in the vicinity of the Action Area indicate the static water level ranges in depth from 354 to 526 feet below the surface and the wells yielding over 1,000 gallons per minute (gpm; BIA 2012). Pump and step-drawdown testing of the carbonate aquifer yielded a range of transmissivity of 50,000 to 100,000 ft./day, hydraulic conductivity of 20 ft./day and specific yield (Sy) of 0.03 to 0.008 (BIA 2012).

4 DESCRIPTION OF SPECIES

Only one federally listed species under the ESA was documented within or near the Project: the Mojave desert tortoise. **Section 4.2** lists details of the survey protocol and the results. Other species considered for analysis are described in **Section 4.1**.

No Designated Critical Habitat for any listed plant or animal species occurs within the Action Area, though critical habitat units for the desert tortoise occur approximately 8 miles west of the Action Area on the west side of the Arrow Canyon Range.

4.1 Federally-Listed Bird Species

4.1.1 Yellow-billed Cuckoo

On October 3, 2014, the yellow-billed cuckoo (*Coccyzus americanus*) was listed as threatened under the ESA (79 FR 59992; USFWS 2014). Critical habitat has not yet been designated but was proposed on February 27, 2020; the nearest proposed critical habitat for this species, if designated, would be over 100 miles south of the project. The yellow-billed cuckoo has always been rare in Nevada. There are still small areas of suitable habitat within the state, with documented breeding occurring very rarely I Southern Nevada. Yellow-billed cuckoos may still utilize remnant habitats present within the state during migration.

Based on historic accounts, the species was widespread and locally common in California and Arizona, locally common in a few river reaches in New Mexico, locally common in Oregon and Washington, and locally uncommon in scattered drainages of the arid and semiarid portions of western Colorado, western Wyoming, Idaho, Nevada, and Utah. The scattered cottonwoods on the Colorado River tributaries (Virgin, Muddy, and Pahranagat) are the last places in Nevada where the yellow-billed cuckoo can potentially occur. The only known nesting sites in Nevada for the yellow- billed cuckoo are at Warm Springs Ranch Natural Area along the Muddy River in the Moapa Valley (SNWA 2019), approximately 10 miles north of the Action Area. While two individual cuckoos were detected during 2019 surveys at Warm Springs Natural Area, there is no suitable habitat for the species in the Action Area.

4.1.2 Yuma (Ridgway's) Clapper Rail

The Yuma clapper rail (*Rallus longirostris yumanensis*) was listed as an endangered species on March 11, 1967 (32 FR 4001). The Recovery Plan was finalized in 1983 and portions of the recovery action plan were initiated over the ensuing years. The Yuma clapper rail is one of the smaller subspecies of clapper rail, with adult males standing eight inches tall and weighing 266.8 grams on average (Todd 1986). Females are slightly smaller. Adult Yuma clapper rails of both sexes are similar in plumage; they possess a long, slender bill and long legs and toes compared to body size (Todd 1986).

The present range of the Yuma clapper rail in the U.S. includes portions of Arizona, California, and Nevada. The Yuma clapper rail lives in freshwater marshes dominated by cattail (*Typha* sp.) and bulrush (*Scirpus* ssp.) with a mix of riparian tree and shrub species (*Salix exigua*, *S. gooddingii*, *Tamarix* sp., *Tessaria serica*, and *Baccaris* sp.) along the shoreline of the marsh (Eddleman 1989). This species is known to occur along the Muddy River within the Overton Wildlife Management Area approximately 15 miles east of the Action Area. No habitat for this species occurs within the Action Area.

4.1.3 Southwestern Willow Flycatcher

The southwestern willow flycatcher (*Empidonax traillii extimus)* was listed by the USFWS as an endangered species within its entire range on February 27, 1995 (FR 60: 10693-10715). Critical habitat for the species was originally established in 1997 (FR 62: 39129-39147) but subsequently vacated and incidental protection provided along the Virgin River and its 100-year floodplain from the Arizona/Nevada border to Halfway Wash in Nevada (FR 65: 4140-4156).

Critical habitat was again proposed on October 12, 2004 (FR 69: 60706-60736), redefined and re-instituted in 2005 (FR 70: 60886-61009; USFWS 1997), and designated in 2013 (USFWS 2013). Critical habitat for the southwestern willow flycatcher in Nevada is currently limited to portions of the Virgin River above its confluence with the Muddy River (FR 70: 60886-61 009).

For nesting, southwestern willow flycatchers require dense riparian habitats with microclimatic conditions dictated by the local surroundings. Saturated soils, standing water, or nearby streams, pools, or cienegas are a component of nesting habitat that also influences the microclimate and density of the vegetation component. No suitable riparian or microhabitat conditions exist within the Action Area. The closest known breeding habitat for this species is located along the Muddy River, at Warm Springs Ranch, approximately 10 miles north of the Action Area. During 2019 surveys, eight southwestern willow flycatcher territories were identified, including two confirmed pairs, three unpaired residents and one non-resident. There is no suitable habitat for the species in the Action Area.

4.2 Moapa Dace

The Moapa dace was listed as an endangered species under the ESA on March 11, 1967 (32 Federal Register [FR] 4001). Since the Moapa dace represents a monotypic genus, this species was assigned a recovery priority of 1 (highest ranking) by the USFWS in 1995. The original recovery plan for this species was prepared in 1983 and subsequently revised in 1995.

4.2.1 Distribution and Life History

The Moapa dace is endemic to and occurs in the Muddy River system (and associated thermal spring systems). Specifically, it occurs in the Warm Springs area in which encompasses 10 thermal spring provinces that form the Muddy River (roughly 10 miles north of the proposed project). Moapa dace likely inhabited 25 springs and approximately 16 kilometers of the upper Muddy River (Ono et al. 1983). Historically, the Muddy River was 48.4 kilometers long; however, in 1935, with the completion of the Hoover Dam, Lake Mead flooded the lower 8 kilometers of the river, rendering it unsuitable for Moapa dace. Previous surveys found adult Moapa dace occurring in low numbers in restricted portions of 3 springs and less than 2 miles of spring outflow and river in the Warm Springs area (USFWS 1983).

The Moapa dace inhabits a variety of habitats throughout its several life stages. As individuals age, they occupy habitats with increasing flow velocities such that larval dace are apparently limited to slackwater portions of the upper reaches of tributaries of the Moapa River, whereas adults can be found in the river's mainstem. The species prefers warmer temperatures (67-89.6°F); thus, cooler temperatures in the middle portion of the Moapa River mainstem may function as a barrier to downstream movements (USFWS 1996).

The species is omnivorous; stomach contents have included beetles, moths, butterflies, true flies, leaf hoppers, true bugs, caddisflies, mayflies, damselflies, dragonflies, worms, scuds, crustaceans, snails, filamentous algae, vascular plants, detritus and sand. The dace primarily forages on drift items but will also forage on the stream or spring substrate. The species often forages from drift stations in large groups (up to 30 individuals). These sites are often characterized by overhanging vegetation or particularly deep areas (USFWS 1996).

4.2.2 Threats to the Species

Threats to the Moapa dace include habitat loss and alteration, introduction of non-native species, and parasites. Habitat loss and alteration has been ongoing in the Warm Springs areas for the purposes of recreational, industrial and municipal projects. Several headwater springs were completely channelized or diverted for use as swimming pools. Irrigation for agricultural purposes historically had impacts on headwater springs in the Warm Springs area, though agricultural activity in the area has declined.

Moapa dace persist within several warm springs and associated springbrooks that have been altered greatly by humans. Downstream habitats, where adult dace from different spring systems mixed historically, are now infested with exotic predatory fish. In many cases infested habitats are intentionally blocked from upstream areas by fish barriers built to prevent the spread of exotic fish. Specifically, a fish barrier (known as the refuge barrier) and a water diversion exist upstream of the Project's gen-tie crossing. The resulting fragmented population structure threatens the dace's genetic and demographic health, although barriers must be maintained until the threats of exotic fish are eliminated (USFWS 2009a).

4.2.3 Critical Habitat

There is no designated critical habitat for the Moapa dace.

4.3 Desert Tortoise

Desert tortoise is listed as threatened under the ESA on April 2, 1990 (USFWS 1990). A total of 6.4 million acres of Critical Habitat was designated in 1994 (USFWS 1994). The 1994 Recovery Plan described a strategy for recovering the desert tortoise, which included the identification of six recovery units, recommendations for a system of Desert Wildlife Management Areas within the recovery units, and development and implementation of specific recovery actions. Within those six recovery units, Desert Wildlife Management Areas (DWMAs) were identified, where populations of tortoises facing similar threats would be managed with the same strategies.

The Action Area is within the Northeastern Mojave Recovery Unit, which encompasses almost 5 million acres extending from southwestern Utah/northwestern Arizona (northern boundary) to Las Vegas/Las Vegas Wash (southern boundary). This unit includes the Beaver Dam Slope, Gold Butte-Pakoon, and Mormon Mesa Critical Habitat Units.

Characteristically, tortoises in this unit are active in late summer and early autumn in addition to spring, reflecting the fact that this region receives up to about 40 percent of its annual rainfall in summer and supports two distinct annual floras on which tortoises can forage (USFWS 2019c). Desert tortoise also feed on cacti, perennial grasses, and herbaceous perennials. Desert tortoises may den

together in caliche caves in bajadas, washes, or caves in sandstone rock outcrops (USFWS 2011, USFWS 2019c).

If basic habitat requirements are met, the desert tortoise can survive and reproduce within the varied vegetation communities of the Mojave region (USFWS 1994). These requirements include sufficient suitable plants for forage and cover, suitable substrates for burrow and nest sites, and freedom from disturbance. Throughout most of the Mojave region, the desert tortoise occurs primarily on flats and bajadas with soils ranging from sand to sandy-gravel characterized by scattered shrubs and abundant inter-shrub space for herbaceous plant growth. Desert tortoises are also found on rocky terrain and slopes.

4.3.1 Distribution and Abundance in the Action Area

4.3.1.1 Field Surveys

To assess the status of the desert tortoise in the Action Area, field surveys were conducted in April 2019. Team members included more than one biologist previously approved by USFWS as an Authorized Biologist on multiple prior projects. To be granted authorized status, USFWS requires that the biologist has thorough knowledge of desert tortoise behavior, natural history, and ecology, and demonstrates substantial field experience and training to successfully:

Handle desert tortoises
Excavate burrows to locate desert tortoise or eggs
Relocate desert tortoises
Reconstruct desert tortoise burrows
Unearth and relocate desert tortoise eggs
Locate, identify, and record all forms of desert tortoise sign; and
Follow USFWS-approved protocols.

The lease study area was surveyed in accordance with current USFWS protocols (USFWS 2019b). Biologists walked 10-meter (33-foot) wide parallel pedestrian transects. USFWS refers to this methodology as “100 percent coverage.” The lease study area was 935 acres in size. The objective of the field survey is to determine presence or absence of desert tortoises, estimate the number of tortoises (abundance) and assess the distribution of tortoises within the Action Area (USFWS 2019b).

Observations of tortoise sign (live tortoises, carcasses, shell, bones, scutes, scat, burrows, pallets, tracks, egg shell fragments, etc.) were recorded in the field.

4.3.1.2 Field Survey Results

Data collected within the survey area were analyzed using the USFWS 2019 Protocol equation to determine the estimated number of tortoises within the Action Area. This method uses the number of tortoises observed above ground, the probability that a tortoise is above ground, the probability of detecting a tortoise if above ground, and the size of the area surveyed. Calculations of desert tortoise populations are based only on the number of adult tortoises (≥180 mm MCL) observed during surveys. The equation is illustrated below.

$$\left(\begin{array}{c}\text{Estimated number of tortoises}\\ \text{within action area}\end{array}\right) = \frac{\left(\begin{array}{c}\text{Number of tortoises}\\ \text{observed above ground}\end{array}\right)}{\left(\begin{array}{c}\text{Probability that}\\ \text{a tortoise is}\\ \text{above ground } (P_a)\end{array}\right)\left(\begin{array}{c}\text{Probability of}\\ \text{detecting a tortoise,}\\ \text{if above ground } (P_d)\end{array}\right)}\left(\frac{\text{Size of action area}}{\text{Size of area surveyed}}\right)$$

A total of 225 east-west transects of differing lengths were walked over the course of the survey to achieve 100% coverage of the survey area, totaling approximately 379 kilometers. Desert tortoises and desert tortoise sign were observed. A total of 3 adult desert tortoises (≥180 mm MCL) and 0 juveniles were observed over the course of the surveys; the 3 tortoise observations were in the southern portion of the survey area (**Table 4-1** and **Figure 4-1**). Desert tortoise sign (scat, carcasses/shell fragments, tracks, pallets and burrows) were observed throughout the survey area. The estimated number of adult tortoises within the Action Area was calculated to be 5.6, with a 95% confidence interval of 2.25 to 14.09 adult tortoises during the 2019 surveys.

4.3.1.3 Table 4-1 - TORTOISE SIGN FOUND IN PROJECT AREA

	Class 1 (Used today)	Class 2 (Used this week)	Class 3 (Used this season)	Class 4 (Old Requires Excavation)	Class 5 (Old Collapsed)	Total
Burrow	16	36	48	35	16	**151**
Carcass	0	2	2	0	5	**9**
Pallet	0	4	10	11	2	**27**
Scat	2	5	4	1	0	**12**
Other (Eggs, Mating Circle, Etc.)	2	2	0	0	0	**4**

Source: Heritage 2020

[1] Burrow Class Definitions: 1. currently active, with tortoise or recent tortoise sign. 2. good condition, definitely tortoise; no evidence of recent use. 3. deteriorated condition; definitely tortoise. 4. good condition; possibly tortoise. 5. deteriorated condition; possibly tortoise.

[2] Shell Remains: 1. fresh or putrid. 2. normal color; scutes adhere to bone. 3. scutes peeling off bone. 4. shell bone is falling apart; growth rings on scutes are peeling. 5. disarticulated and scattered.

[3] Scat: 1. wet (not from rain or dew) or freshly dried; obvious odor. 2. dried with glaze; some odor; dark brown. 3. dried; no glaze or odor; signs of bleaching (light brown), tightly packed material. 4. dried; light brown to pale yellow, loose material; scaly appearance. 5. bleached, or consisting only of plant fiber.

These results are generally consistent with USFWS recent findings presented in the Revised Recovery Plan for the Mojave Population of the Desert Tortoise (2011). The NE Mojave Recovery Unit was found to be the only unit that increased in abundance from 2004 through 2014 (Allison and McLuckie 2018).

Eagle Shadow Mountain Substation

15

Legend

Project Components

- Collector Lines
- Existing Access
- New Access
- Lease Area

General Features

- Existing Substation
- Interstate
- Major Highway
- Railroad
- Designated Utility Corridor

Survey Results

- Live Desert Tortoise Observation - Adult

0 0.25 0.5 0.75 1

Miles

North American Datum 1983
State Plane Nevada East Feet

SOUTHERN BIGHORN SOLAR II PROJECT

FIGURE 4-1
Desert Tortoise Observations

Map Extent: Clark County, Nevada

Date: 09-11-20		Author: rnc

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4.3.2 Factors That May Affect the Desert Tortoise in the Action Area

4.3.2.1 Upper Respiratory Tract Disease

Upper respiratory track disease (URTD) was discovered in 1990 and is currently a major cause of mortality in the western Mojave Desert population. Habitat degradation, poor nutrition, and drought have increased the desert tortoises' susceptibility to this disease (USFWS 1994). It is thought that URTD is transmitted between desert tortoise populations when desert tortoises are captured as pets, then subsequently released.

4.3.2.2 General Anthropogenic Factors

The factors causing the decline of the desert tortoise are primarily human related. These factors include collection of desert tortoises for pets, food, and commercial trade; collision with vehicles on roads and highways; mortality from gunshots; predation; and off-road vehicle (ORV) travel cross-country or on trails. Predation by the common raven is severe on younger age classes of desert tortoise. The Breeding Bird Survey (BBS) data from 1968 to 2004 indicated increases in the raven populations of more than 700 percent in the west Mojave Desert and more than 70 percent in the East Mojave Desert (DOI 2008). Increased food supplies from road kills, landfills, trash, garbage dumps, agricultural development and new perch and nest sites all contribute to the increased population of ravens. Berry (1990) speculated that raven predation has resulted in such high juvenile desert tortoise loss in some portions of the Mojave that recruitment of juveniles into the adult population has been halted. Within or near the Project area, previous disturbance from OHV travel, weeds and ground disturbance from multiple linear facilities such as a substation, pipelines and transmission lines were observed.

4.3.2.3 Connectivity

Habitat connectivity is important to maintain desert tortoise access to required resources (e.g., water or burrow sites), minimize energetic expenditures to access resources, limit risk of travel- related injury or death by minimizing the need to move through risky or uninhabitable areas, maintain social behaviors and gene flow, and enable movement with a change in environmental conditions, such as climate shift (Webster et al. 2002; Lowe and Allendorf 2010). In a review of numerous definitions of habitat connectivity published in the scientific literature, Kindlmann and Burel (2008) defined habitat connectivity simply as “the ease with which individuals can move about within a landscape.” This definition encompasses both structural (based entirely on landscape configuration independent of the animal) and functional connectivity (including animal responses to landscape features). It is important to note that natural barriers—such as rivers or mountains—often can limit habitat connectivity. In addition to natural barriers, human structures including housing developments, roads, farmland, and fences have increasingly reduced habitat connectivity (Fahrig 2003). This reduced connectivity has resulted from both habitat destruction and fragmentation, the division of habitat into smaller, discontinuous units.

Factors in assessing the potential effects of the Project on desert tortoise habitat connectivity include:

- Natural barriers to tortoise movement
- Anthropogenic barriers to tortoise movement
- Habitat fragmentation

Genetic connectivity can be defined as the degree to which gene flow is maintained between populations. For gene flow to occur across an area, populations of desert tortoises need to be connected by areas of suitable habitat that support sustainable numbers of reproductive individuals. Natural barriers, such as mountain ranges and rivers, reduce genetic connectivity and are thought to have partly resulted in some broad-scale genetic differentiation among tortoise populations within the Mojave Desert (Averill-Murray et al. 2013). In the Action Area, there are currently no natural barriers that would affect genetic connectivity from north or west. Tortoise movement to the south may be hindered by the existing solar project and to the east may be limited by Interstate 15 and a railroad. Genetic connectivity is currently maintained as tortoises can exchange genetic material with populations in suitable habitat areas north and south of the Project area.

4.3.2.4 Habitat Fragmentation

The Proposed Project is not expected to substantively contribute to habitat fragmentation because it would be built with a raised fence that would allow tortoises to re-inhabit and pass through the solar site during operations.

4.3.3 Desert Tortoise Designated Critical Habitat

In 1990, USFWS listed the desert tortoise as threatened over 30 percent of its geographic range. In response to this listing, the *Desert Tortoise (Mojave Population) Recovery Plan* was created to aid in the preservation of the species. In this plan, six population units termed "recovery units," were identified using available data on genetic variability, morphology, ecosystem types, and population behavior.

Within these recovery units, 14 desert wildlife management areas (DWMA) were identified as areas where tortoise populations could be managed for recovery. The guidelines used to delineate the 14 DWMAs were used by USFWS to designate federally protected desert tortoise "Critical Habitat" in 1994. Of the original 22,616 to 27,407 square kilometers recommended for protection in the 14 DWMAs, 26,087 square kilometers became Designated Critical Habitat (DCH). Primary constituent elements of DCH for the desert tortoise are those physical and biological attributes that are necessary for the long- term survival of the species. These elements were identified as: 1) sufficient space to support viable populations within each of the five Recovery Units and to provide for movement, dispersal, and gene flow; 2) sufficient quantity and quality of forage species and the proper soil conditions to provide for the growth of such species; 3) suitable substrates for burrowing, nesting, and overwintering; 4) burrows, caliche caves, and other shelter sites; 5) sufficient vegetation for shelter from temperature extremes and predators; and, 6) habitat protected from disturbance and human-caused mortality (USFWS 2011).

The Project area is not located within USFWS desert tortoise DCH (USFWS 2019c). **Figure 4-2** depicts the nearest DCH, which is approximately 12 miles to the west of the proposed Project.

Moapa Town

Reid Gardner Substation

78

Moapa Valley

93

Eagle Shadow Mountain Substation

15

Moapa River Indian Reservation

Crystal Substation

40

CLARK COUNTY

North Las Vegas

North Las Vegas

Legend

Project Components

- Southern Bighorn II Lease Area

General Features

- Existing Substation
- Interstate
- Major Highway
- Railroad
- Designated Utility Corridor
- Municipal Boundary

Jurisdictional Land Ownership

- Bureau of Land Management Land
- Indian Land
- Fish and Wildlife Service
- Department of Defence
- State Lands
- National Park Service

Critical Habitat

- Desert tortoise

0 1 2 3 4 5

Miles

North American Datum 1983
State Plane Nevada East Feet

SOUTHERN BIGHORN SOLAR II PROJECT

FIGURE 4-2
DT Designated Critical Habitat

Map Extent: Clark County, Nevada

Date: 09-11-20		Author: rnc

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5 EFFECTS OF THE PROPOSED ACTION AND DETERMINATION OF EFFECTS

This section presents the potential direct, indirect, and cumulative effects of the Proposed Action on listed species. Impacts resulting from the implementation of the Proposed Action include:

- Injury of mortality of desert tortoises from construction activities;
- Temporary stress on desert tortoises from handling during relocation efforts;
- Temporary constriction of movement corridors for desert tortoises during construction;
- Disturbance from vibrations during construction that could affect tortoises near the boundary of the construction area;
- Temporary and permanent loss of desert tortoise habitat and burrows;
- Disturbance and displacement of desert tortoises during construction of the associated access roads and proposed gen-tie;
- Potential noise and lighting effects on tortoise behavior and movement;
- Introduction of weeds and invasive species within the construction area during construction and operation;
- Exposure to chemicals (herbicides, palliatives and spills from equipment);
- Potential increased raven and other predator populations resulting from perches provided by the solar structures, aboveground portions of collector lines and towers and perimeter fencing, and human introduction of trash within or near the Action Area boundary;
- Groundwater use from the same hydrographic basin that supports the Yuma clapper rail, southwestern willow flycatcher and Moapa dace.

5.1 Federally Listed Bird Species

5.1.1 Yellow-billed Cuckoo

There is no suitable habitat in the Action Area (including proposed critical habitat), and no habitat would be removed or affected by the Proposed Action. Suitable habitat occurs approximately 10 miles north of the Project area near the Warm Springs Ranch, and individuals were observed there in 2019 (SNWA 2019). Suitable habitat also occurs east of the Action Area along the Virgin River. While few yellow-billed cuckoos are known to occur in these areas, they may use the Muddy and Virgin Rivers for migration to and from breeding habitat and for dispersal but the Proposed Project has no aboveground gen-tie (collector lines would be buried, except for up to one mile of overhead where lines cross the designated BLM utility corridor, and not near the Muddy or Virgin Rivers); therefore, those individuals would not be at risk of colliding with aboveground electrical lines. While groundwater withdrawals may result in insignificant reductions in flow in the Muddy River, the magnitude of effects would be too small to affect yellow-billed cuckoo or cuckoo habitat (e.g., riparian vegetation)(see analysis in Section 5.3).

Determination

Due to the low number of yellow-billed cuckoos that occur near the Action Area and the lack of habitat in the Project area, the potential for direct mortality to this species is low. Potential risk would be insignificant and discountable and potential indirect effects would be negligible. The Proposed Action may affect, but is not likely adversely affect, the yellow-billed cuckoo.

5.1.2 Yuma (Ridgway's) Clapper Rail

There is no suitable Yuma clapper rail habitat in the Action Area. Therefore, the potential for direct mortality to this species is low. This species is known to occur along the Muddy River within the Overton Wildlife Management Area. Critical habitat has not been designated for this species. While the nearest suitable habitat is approximately 15 miles from the Project area, rails may use the Muddy River for migration to and from breeding habitat and for dispersal but the Proposed Project has no aboveground gen-tie (collector lines would primarily be buried and not near the Muddy or Virgin Rivers); therefore, those individuals would not be at risk of colliding with aboveground electrical lines. While groundwater withdrawals may result in insignificant reductions in flow in the Muddy River, the magnitude of effects would be too small to affect Yuma clapper rail habitat (e.g., hydrophytic vegetation)(see analysis in Section 5.3).

There have been two isolated incidents involving Yuma rail near solar projects. One mortality was discovered near the solar field at a PV solar project in Riverside County, California. Field data collected in connection with that incident failed to provide evidence of any direct impact or collision with a PV module. Another Yuma clapper rail mortality was discovered at a PV solar project in Imperial County, California. In this instance too, there was no evidence of a collision with a PV module.

In response to these incidents, USFWS addressed the potential for solar projects to result in injury or mortality to Yuma clapper rail in an incidental take statement for a project in Imperial County, California. The USFWS recognized that interactions between Yuma clapper rail and PV facilities are improbable when such projects are distant from this species' habitat. The USFWS concurred with the BLM's finding that the project, located near the Colorado River in Riverside County, California, was "not likely to adversely affect" Yuma clapper rail. Similar to the ACSP Project, that project area did not include aquatic habitat for Yuma clapper rail and was not located in a flight path that would connect aquatic features. A portion of U.S. breeding populations is known to migrate annually to wintering grounds in northwest Mexico (Harrity and Conway 2020). However, we do not have information about and cannot predict the paths migrating (or dispersing) individuals may take and there is no evidence to indicate that dispersal of these species would occur in the action area.

The low number of known recorded mortalities, lack of habitat in the action area and the long distance from any known occurrences suggests the low potential for direct mortality to listed birds related to the Project. Potential direct and indirect effects posed by the Project are negligible.

While groundwater withdrawals may result in insignificant reductions in flow in the Muddy River, the magnitude of effects would be too small to affect Yuma clapper rail or its habitat (e.g., riparian vegetation)(see analysis in Section 5.3).

Determination

Due to the low number of Yuma clapper rail mortalities at PV solar facilities and the lack of habitat in or near the Action Area, the potential for direct mortality to this species is low. Potential risk would be

insignificant and discountable and potential indirect effects would be negligible. The Proposed Action may affect, but is not likely adversely affect, the Yuma clapper rail.

5.1.3 Southwestern Willow Flycatcher

There is no suitable habitat in the Action Area. Therefore, the potential for direct mortality to this species is negligible. There is no designated critical habitat in the Action Area. Suitable habitat occurs approximately 10 miles north of the Action Area near the Warm Springs Ranch and potential breeding was observed there in 2019 (SNWA 2019).

While few southwestern willow flycatchers are known to occur there, they may use the Muddy River for migration to and from breeding habitat and for dispersal but the Proposed Project has no aboveground gen-tie (collector lines would be buried, except for up to two miles of overhead where lines cross the designated BLM utility corridor, and not near the Muddy or Virgin Rivers); therefore, those individuals would not be at risk of colliding with aboveground electrical lines. While groundwater withdrawals may result in insignificant reductions in flow in the Muddy River, the magnitude of effects would be too small to affect southwestern willow flycatcher or its habitat (e.g., riparian vegetation; see analysis in Section 5.3).

Determination

Due to the low number of southwestern willow flycatchers that occur near the Action Area and the lack of habitat in the Project area, the potential for direct mortality to this species is low. Potential risk would be insignificant and discountable and potential indirect effects would be negligible. The Proposed Action may affect, but is not likely adversely affect, the southwestern willow flycatcher. No proposed or designated critical habitat is within the Action Area along the Muddy River; therefore, the project would have no effect to designated critical habitat.

5.2 Desert Tortoise

5.2.1 Injury and Mortality

An estimated 5.6 desert tortoises are expected to occupy the Action Area (95% CI: 2.25 – 14.09 based on 2019 USFWS protocol calculations). Therefore, construction of the Proposed Action may result in impacts to up to 6 adult desert tortoises through injury or direct mortality of desert tortoise. Such injury or mortality could occur from vehicle strikes or other adverse interactions with project-related equipment. However, translocation of tortoises and the implementation of avoidance and minimization measures are expected to avoid all or most of these potential injuries or mortalities.

Beside the initial construction, O&M activities inside and outside the solar site could represent a source of ongoing mortality. As such, direct take of desert tortoises resulting from these activities is expected to be very low.

5.2.2 Relocation, Translocation and Handling

Temporary desert tortoise exclusion fencing would be installed prior to construction and desert tortoises would be relocated via clearance surveys before the construction phase of the Project. Relocation of desert tortoises can potentially represent take via harassment and/or mortality, as there is a possibility

for tortoises to be killed or injured as a result of this process. Desert tortoises would be relocated to Tribal lands within the Action Area as described in the Project's translocation plan. It is expected that all tortoises would be captured and safely released outside the exclusion fence adjacent to the Project site.

5.2.3 Loss of Occupied Habitat

The Proposed Action includes the installation of temporary desert tortoise exclusion fencing around the solar facility, utilizing gates and cattle guards (with ramps) at ingress/egress locations. The permanent perimeter fence would be constructed inside of the exclusion fencing and would remain permeable to tortoise movements. Exclusion fencing would be removed after construction, allowing tortoises to move onto and through the site during operations, except around the substation, O&M area and central BESS (if chosen), where the exclusion fencing would remain intact.

Vegetation would be cleared along access roads, at the Project substation and O&M building, at inverters, and along cable trenches. However, most native vegetation within the solar arrays would be left in place during construction. Equipment would drive and crush vegetation as needed, preserving the integrity of root balls and up to 18 inches of photosynthetic material, allowing it to regrow after construction. Tall shrubs would be trimmed to allow for installation of panels. Native vegetation would remain in the solar arrays during operations and would provide suitable habitat for tortoises during operations.

A total of approximately 297 acres of occupied desert tortoise habitat would be permanently disturbed and up to approximately 731 acres would be temporarily disturbed as a result of Project implementation.

Construction equipment would not operate beyond the fenced boundary. Roads outside of the Project area that are not designated as open by the Applicant and Tribe are not to be used by Project personnel unless accompanied by a biological monitor.

The Proposed Project is not expected to substantively contribute to habitat fragmentation because the preservation of native vegetation on site and a permeable fence would allow tortoises to re-occupy the site after construction.

The Project activities would not have direct or indirect effects on the physical characteristics of designated critical habitat that are required to support the recovery of the species because there is no designated critical habitat within the Action Area.

5.2.4 Constriction of Movement

The Proposed Action is currently located in an area where desert tortoise movement is generally unrestricted, though tortoise movement to the south may be hindered by the existing solar project, although they can still move around that site to the east or west. Movement to the east is hindered by Interstate 15 and a railroad. Temporary exclusionary fencing would be installed around the perimeter of the site in order to exclude tortoises during construction. The exclusionary fencing would restrict desert tortoise movement on the site during construction (approximately 14 – 16 months) but would not preclude north-south movement through the Dry Lake Valley. During operations, tortoises would be allowed to re-inhabit and move freely through the solar arrays.

Given the existing natural and anthropogenic barriers, because most vegetation would be maintained on the Project site, and the perimeter fence would remain permeable during operations to allow tortoises to

occupy and move through the solar arrays, project activities would be unlikely to further reduce genetic connectivity in the area.

5.2.5 Vibration and Noise

Equipment that would cause surface disturbance and otherwise operate during construction would be limited to what would be needed to grade dirt access roads, equipment to install solar arrays, trenching equipment for installation of cable and wiring and equipment to install the small operations building and the proposed electric substation. Areas outside of the exclusion fence may experience short-term vibrations and increased noise that could potentially disturb desert tortoises. Noise and vibration would be temporary and sporadic. Construction taking place near the perimeter edge of the exclusion fence is limited. Ground-disturbing activities during O&M would be substantially less than during construction of the Proposed Action, such that no adverse effects on desert tortoise from ground vibration or noise are expected to occur during O&M.

5.2.6 Dust

Construction activities and O&M vehicle traffic on the roads within the Action Area could generate dust that could affect vegetation adjacent to the Action Area in the short-term; long-term adverse effects on vegetation are not expected to occur. The buildup of dust on plant leaves could affect photosynthetic productivity and nutrient and water uptake resulting in loss of potential foraging plants for desert tortoises. It is assumed that this low-level dusting effect during construction would be minimal and most likely washed away during rainstorms. Construction BMPs would be in place to monitor and decrease dust pollution if required by use of polymeric stabilizers in the soil or with frequent watering with water trucks or other means.

5.2.7 Lighting

Temporary lighting would be used during construction at dawn and dusk at the construction offices, laydown yards and substation area. There may also be mobile lighting located at entrances during construction. Lighting would likely be used more during the wintertime to ensure safe working conditions for personnel. Minimal lighting would be used on-site and would be directed inward and downward. Site lighting could include motion sensor lights for security purposes. Lighting used on-site would be of the lowest intensity foot candle level, in compliance with any applicable requirements from the Moapa Band, measured at the property line after dark. The Project's lighting system would provide O&M personnel with illumination for both normal and emergency conditions near the main entrance, O&M building and the Project substation. Lighting would be designed to provide the minimum illumination needed to achieve safety and security objectives and would be downward facing and shielded to focus illumination on the desired areas only. Therefore, light trespass on surrounding properties would be minimal. If lighting at individual solar panels or other equipment is needed for night maintenance, portable lighting would be used. Project lighting is not expected to have a more than negligible effect on desert tortoises near and adjacent to the Proposed Action

5.2.8 Edge Effects

The edge effect is the effect of the juxtaposition or placing side by side of contrasting environments on an ecosystem. This term is commonly used in conjunction with the boundary between natural habitats and disturbed or developed land. The Proposed Action includes placement of a temporary exclusionary perimeter fence during construction. Other than impacted burrows or desert tortoises that need to be

relocated during fence construction we assume that there would be no permanent or long-term edge effects as a result of the Proposed Action. The fence may create roosting sites for ravens or birds of prey; these effects would be mitigated through the preparation and implementation of a Raven Control Plan.

5.2.9 Introduction of Weeds and Invasive Species

Introduction of weeds and invasive species would be controlled using an Integrated Weed Management Plan and would prevent or minimize the spread/colonization of weeds onsite and off-site. Invasive species could be introduced to the area via transport by construction vehicles and equipment. The ground would be disturbed during construction providing increased opportunity for weed establishment, though much less than if the site were to be graded. The Integrated Weed Management Plan (Appendix F of the DEIS) would identify management and operational practice to avoid the introduction or spread of existing invasive species within the Action Area. The goal of this plan would be to minimize potential effects from weeds and invasive species within the Action Area and adjacent lands, as well as to avoid adverse effects on desert tortoise foraging habitat off-site. Implementation of this plan would result in no adverse effects on desert tortoises from weeds or invasive species within the Action Area or on adjacent lands.

5.2.10 Exposure to Chemicals

The primary wastes generated at the Project during construction, operation, and maintenance would be nonhazardous solid and liquid wastes. Limited quantities of hazardous materials would be used and stored on the solar site. The BESS, if included, could include lithium-ion batteries that would need replacement periodically and the used batteries would need to be disposed of according to appropriate protocols. The primary hazardous materials on site during construction would be the fuels, lubricating oils and solvents associated with construction equipment. The nonhazardous wastes produced by construction and O&M activities would include defective or broken electrical materials and batteries, empty containers, the typical refuse generated by workers and small office operations, and other miscellaneous solid wastes. The types of wastes and their estimated quantities will be discussed in a hazardous materials plan that will be developed for the Project.

The Applicant has prepared a Spill Prevention and Emergency Response Plan that addresses waste and hazardous materials management including BMPs related to storage, spill response, transportation, and handling of materials and wastes. The draft plan is included in Appendix E of the DEIS. Waste management would emphasize the recycling of wastes where possible and would identify the specific landfills that would receive wastes that cannot be recycled.

Mechanical treatment of weeds is the preferred method for the Project; however, herbicides may be used if necessary. Herbicide use would follow those approved in BLM's Programmatic EIS (PEIS) for Vegetation Treatments Using Aminopyralid, Fluroxypyr, and Rimsulfuron on BLM Managed Lands in 17 Western States (BLM 2007, BLM 2016). The herbicides that may be used in mowed areas, based on those allowed on BLM lands, include aminopyralid, clopyralid, imazapyr, imazapic, glyphosate, metasulfuron methyl, and rimsulfuron. The applicant would implement a Site Restoration Plan and an Integrated Weed Management Plan that specifies procedures for managing vegetation and minimizing the spread of non-native and noxious weeds, including integrated pest management and use of herbicides. Standard Operating Procedures (SOPs) would be incorporated into the Integrated Weed Management Plan (Appendix F of the DEIS) and implemented. Herbicides that are believed to have deleterious effects on reptiles, such as 2,4-D, would not be allowed. Any herbicide use would be used during the less active tortoise season.

Water is the preferred method for reducing dust for the Project; however, palliatives may be used in permanent disturbance areas at the beginning of construction where tortoises have been excluded. Approved palliatives for use in desert tortoise habitat include Road Bond 1000, Soil Cement (for roads and heavy traffic areas), Formulated Soil Binder (FSB) 1000 (for non-traffic areas on finer soils) and Plas-Tex (For non-traffic areas on sandier/rockier soils). Since palliatives would only be used in areas where tortoises have been excluded, they should not come into contact with these substances.

5.2.11 Attraction of Human Subsidized Predators

Avian predators and scavengers such as the common raven and canids benefit from a myriad of resource subsidies provided by human activities as a result of substantial development within the desert as compared to undeveloped desert landscapes (Boarman and Sazaki 1996). These subsidies can include food (e.g. garbage), water (e.g. detention ponds), nesting substrates (e.g. transmission lines and fencing), and safety from inclement weather or predators (e.g. buildings). Ravens and other predators may be attracted to elevated structures associated with the Proposed Action such as the perimeter fencing, collector line poles and the O&M building. There is a potential for increased sources of food, trash or water both during construction and operation of the Project, particularly at facilities where people concentrate; however, a Raven Control Plan (RCP) (Appendix K of the DEIS) was developed and would be approved prior to the initiation of construction activities. It addresses trash and litter control. These would reduce or eliminate potential raven (or other avian predators) related impacts to desert tortoises.

5.2.12 Operations and Maintenance

Because the solar site would be enclosed with permeable fencing and most vegetation would be maintained on site during operations, it is likely that tortoises would pass through the solar site and reoccupy it to some extent, though the extent to which tortoise would reoccupy the site is unknown at this time. The presence of desert tortoises on the solar site may result in take (injuries or death). Tortoises may be injured or killed during routine maintenance of facilities inside by maintenance vehicles on the solar site. Mitigation measures, such as biological monitors for ground disturbing activities, speed limits, and WEAP, would help to minimize impacts to desert tortoise during these routine maintenance activities (Refer to Section 2.7.4).

Determination

Implementation of the Proposed Action may affect, and is likely to adversely affect, the desert tortoise in the Action Area. This determination is based on the following considerations:

Construction-related impacts on the desert tortoise could include direct mortality or injury as a result of being crushed by vehicles and disturbance of soil. During pedestrian surveys of the Action Area, desert tortoise sign (e.g., scat, tracks, burrows, shell fragments) as well as live tortoises were observed. In addition to the direct and indirect effects of construction on the tortoise, temporary and permanent disturbance to desert tortoise habitat would occur.

Capturing, handling, and relocating desert tortoises out of the solar site may result in harassment and possibly injury or death (Blythe et al. 2003). To minimize this effect, tortoises would be handled in accordance with USFWS handling protocols (Minimization Measures 4, 5, and 6).

O&M activities along the collector line, access roads, and within the solar site could include direct mortality or injury as a result of being crushed by vehicles. Desert tortoises are expected to re-inhabitant the solar site during operations, the extent of which is unknown at this time. Minimization measures (Section 2.7.4) would be implemented to minimize this risk.

5.3 Moapa Dace

The Moapa dace is only known to occur in the Muddy River and several associated headwater springs in the Warm Springs area. These springs represent the primary water source for the Muddy River to which the Moapa dace is endemic. The Proposed Action would include water withdrawal of 200 acre-feet per year (afy) for construction and up to 20 afy for operation. Groundwater withdrawals represent the only potential effect to Moapa dace from the Proposed Action.

5.3.1 Water Drawdowns

The entire flow of the Muddy River is derived from the discharge from the regional carbonate aquifer, except during infrequent precipitation events that increase River flows for up to a few days. Consumptive uses include 1) natural evapotranspiration, 2) surface-water diversions, and 3) groundwater diversions.

On July 14, 2005, a Memorandum of Agreement (MOA) was signed by the Southern Nevada Water Authority (SNWA), Meadow Valley Wash Water District (MVWWD), Coyote Springs Investments (CSI), Moapa Band and the USFWS regarding the withdrawal of 16,100 afy from the regional carbonate aquifer in Coyote Spring Valley and California Wash Basins that included conservation measures for the Moapa dace. The MOA outlined specific conservation actions that each party would complete in order to minimize potential impacts to the Moapa dace should water levels decline in the Muddy River system as a result of the cumulative withdrawal of 16,100 aft of groundwater from the two basins. On January 20, 2006, the USFWS concluded intra-service consultation and issued a programmatic biological opinion (PBO) entitled the *Intra-Service Programmatic Biological Opinion for the Proposed Muddy River Memorandum of Agreement Regarding the Groundwater Withdrawal of 16,100 Acre-Feet per Year from the Regional Carbonate Aquifer in Coyote Spring Valley and California Wash Basins, and Establish Conservation Measures for the Moapa Dace, Clark County, Nevada* (PBO).

The PBO indicated that the adverse effects associated with the withdrawal of 16,100 afy of groundwater would not result in "jeopardy" for the Moapa dace. Current monitoring data indicate that no instream flow trigger points have been reached.

The Moapa dace would not be directly affected by the construction or O&M of the proposed action. However, groundwater withdrawals associated with the proposed action would indirectly affect the Moapa dace. The effects of these groundwater withdrawals were previously analyzed in the 2006 PBO which evaluated the cumulative effects associated with the withdrawal of up to 16,100 afy from the carbonate aquifer in Coyote Spring Valley and California Wash basins. The Tribe is one of several parties that would withdraw water under this analysis. Up to 2,500 afy of Tribal withdrawals were included for the Tribe out of the total 16,100 analyzed in the 2006 PBO; the 200 AF (construction) and 20 afy (operations) of withdrawals proposed by the Project would be included in the previously permitted 2,500 afy. The K-road Project has already been built and is permitted to use up to 40 afy during operations (BIA 2012); the Moapa Solar Energy Center has not been built and water allocations (100 AF for construction and up to 30 afy during operations, BIA 2014)) would not be used as that will now become part of the Arrow Canyon Solar Project (ACSP); the Eagle Shadow Mountain project has not been built but is

permitted to use 200 AF during construction and up to 20 afy during operations (BIA 2019); the ACSP has not been built but will be permitted to use 300 AF during construction and up to 30 afy during operations. Total water use from the Muddy River system for all these projects, combined with the Proposed Action, would be up to 700 afy during construction (which would not occur at the same time) and up to 110 afy during operations, well under the allotted 2,500 afy for the Tribe. The use of the 200 AF and 20 afy would contribute to ongoing adverse effects to Moapa dace as was analyzed in the 2006 PBO to which this document tiers.

Determination

Groundwater pumping associated with the Proposed Action may affect, and is likely to adversely affect, Moapa dace because the withdrawal of water (200 AF during construction and 20 afy during operations) could contribute to ongoing adverse effects as analyzed in the 2006 PBO.

5.4 Cumulative Effects

Cumulative effects are those effects from future private, state, or Tribal activities that are likely to occur within the Action Area. Future federal actions are excluded as these are subject to Section 7 consultation under the ESA (50 CFR 402.02). The Eagle Shadow Mountain Solar Project was recently approved and would be located on the Moapa River Indian Reservation (construction began in mid-2020). The Arrow Canyon Solar Project is expected to be approved in late 2020 and would be located on the Reservation. The Southern Bighorn Solar I Project is expected to be approved concurrently with the Southern Bighorn Solar II Project and would be located on the Reservation. The Gemini Solar and Battery Storage Project was recently approved and would be located on BLM land southeast of the Reservation. Since the action areas are managed by BIA and BLM, Section 7 consultation would be required.

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Appendix A.USFWS IPaC Species List

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Southern Nevada Fish And Wildlife Office
4701 N. Torrey Pines Drive
Las Vegas, NV 89130-2301
Phone: (702) 515-5230 Fax: (702) 515-5231

In Reply Refer To:
Consultation Code: 08ENVS00-2020-SLI-0217
Event Code: 08ENVS00-2020-E-00386
Project Name: Southern Bighorn Solar II

September 10, 2020

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

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

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

Official Species List

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

This species list is provided by:

Southern Nevada Fish And Wildlife Office
4701 N. Torrey Pines Drive
Las Vegas, NV 89130-2301
(702) 515-5230

Project Summary

Consultation Code: 08ENVS00-2020-SLI-0217

Event Code: 08ENVS00-2020-E-00386

Project Name: Southern Bighorn Solar II

Project Type: POWER GENERATION

Project Description: Moapa Indian Reservation; PV solar project.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/36.55878988659006N114.72371251257519W

Counties: Clark, NV

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

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

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

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

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

Birds

NAME	STATUS
Southwestern Willow Flycatcher *Empidonax traillii extimus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered
Yuma Ridgways (clapper) Rail *Rallus obsoletus [=longirostris] yumanensis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3505	Endangered

Reptiles

NAME	STATUS
Desert Tortoise *Gopherus agassizii* Population: Wherever found, except AZ south and east of Colorado R., and Mexico There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4481	Threatened

Critical habitats

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

USFWS National Wildlife Refuge Lands And Fish Hatcheries

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

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

Migratory Birds

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

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

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

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

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

NAME	BREEDING SEASON
Bendire's Thrasher *Toxostoma bendirei* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9435	Breeds Mar 15 to Jul 31
Burrowing Owl *Athene cunicularia* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9737	Breeds Mar 15 to Aug 31

NAME	BREEDING SEASON
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Dec 1 to Aug 31

Probability Of Presence Summary

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

Probability of Presence (■)

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

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

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

Breeding Season (■)

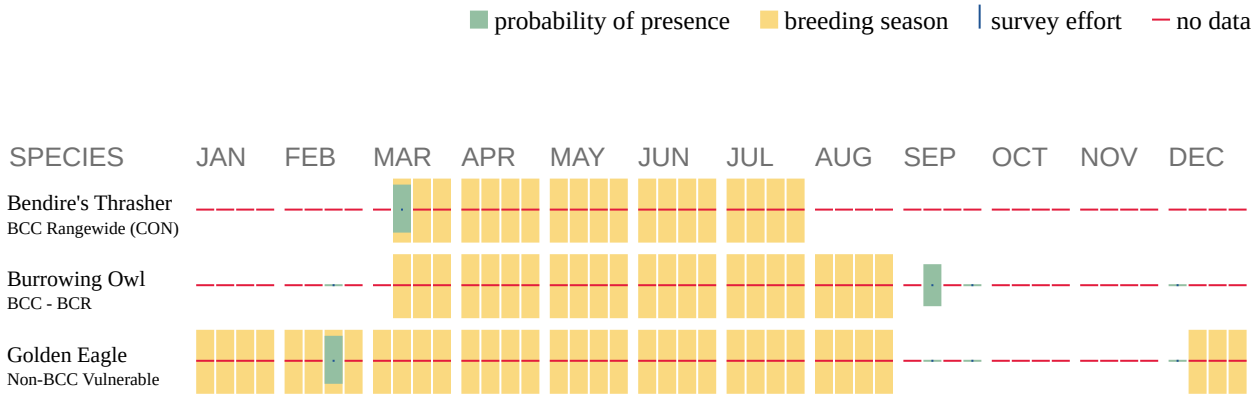
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

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

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

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



Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.
Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding

in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?
The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

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

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

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

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

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

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

Details about birds that are potentially affected by offshore projects

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

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

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In

contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ “Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds” at the bottom of your migratory bird trust resources page.

Wetlands

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

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

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

FRESHWATER POND

- PUBF

RIVERINE

- R4SBC

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
Western Regional Office
2600 North Central Avenue
Phoenix, Arizona 85004-3008

IN REPLY REFER TO:
Environmental Quality Services
MS620-EQS

Memorandum

To: Glen Knowles, Field Supervisor
U.S. Fish & Wildlife Service

From: Bryan Bowker
Regional Director

BRYAN BOWKER Digitally signed by BRYAN BOWKER
Date: 2020.12.01 10:48:05 -07'00'

Subject: Formal Section 7 Initiation – Southern Bighorn Solar Projects, Consultation Codes 08ENVS00-2020-SLI-0216 and 08ENVS00-2020-SLI-0217

The Bureau of Indian Affairs (BIA) is requesting formal consultation with the U.S. Fish and Wildlife Service (Service) pursuant to Section 7 of the Endangered Species Act for 300MS 8me, LLC's, and 425LM 8me, LLC's (Applicants) proposed Southern Bighorn I and Southern Bighorn II Solar Projects (Projects or SBSP I and SBSP II) (Consultation Codes 08ENVS00-2020-SLI-0216 and 08ENVS00-2020-SLI-0217, respectively) on the Moapa River Indian Reservation (Reservation), Clark County, Nevada. This request is to address potential effects associated with the construction, operation and maintenance, and decommissioning of the proposed Projects on the threatened Mojave desert tortoise (*Gopherus agassizii)* and the endangered Moapa dace (*Moapa coriacea*). This request is based on information in the attached documents, *Biological Assessment (BA) – Southern Bighorn Solar I Project* and *BA Southern Bighorn Solar II Project*, dated November 2020.

The Applicants have entered into option agreements with the Moapa Band of Paiute Indians (Moapa Band or Band) to lease a total of 3,600 acres (2,600 for SBSP I and 1,000 acres for SBSP II) for the Projects. The solar field ground leases are for a term of 50 years each (plus additional time as needed for construction and decommissioning) for constructing, operating and maintaining, and decommissioning up to 400-megawatts of solar energy generating facilities using photovoltaic technology with battery storage.

Pursuant to 25 U.S.C. 415, the BIA must approve the solar energy ground leases between the Band and Applicants for the solar fields. The BAs also cover linear features of the project to include collector lines, access roads, and a segment of existing gen-tie line. An Environmental Impact Statement is being prepared to support BIA's and the Bureau of Land Management's (BLM) decisions pursuant to requirements of the National Environmental Policy Act (NEPA). In addition to the Service, the other Cooperating Agencies are the Band, the BLM, and Environmental

Protection Agency. The BIA will serve as lead federal agency for purposes of Section 7 consultation with the Service.

Based on the attached BAs, it is our conclusion that the Projects *may affect, is likely to adversely affect* the Mojave desert tortoise and the Moapa dace, and that the Projects *may affect, is not likely to adversely affect* the yellow-billed cuckoo (*Coccyzus americanus*), Yuma clapper (Ridgeway's) rail (*Rallus longirostris yumanensis*), and Southwestern willow flycatcher (*Empidonax trailii extimus*). The BIA has determined that the potential risk to the three bird species would be "insignificant and discountable" and that potential indirect effects would be "negligible". Therefore, the BIA is requesting 1) formal consultation for the Mojave desert tortoise and Moapa dace, and 2) concurrence that the proposed Projects are not likely to adversely affect the yellow-billed cuckoo, Yuma clapper rail, and Southwestern willow flycatcher. Additionally, we are requesting an opportunity to review the draft Biological Opinions prior to finalization.

If possible, we would appreciate consideration for the consultation process to conclude sometime within the 135-day consultation period due to time constraints related to the Department of the Interior's recent NEPA Streamlining directives.

If you have questions or require additional information, please contact Chip Lewis at (602) 240-8448 or at chip.lewis@bia.gov.

Thank you for your attention to this matter.

Attachment

cc: Jim Williams, BIA Superintendent, Southern Paiute Agency
Stan Webb, Regional Realty Officer, WRO
Chip Lewis, EQS, WRO
Jessica Zehr, Southern Nevada Fish & Wildlife Office
Beth Ransel, BLM – Southern Nevada District
Chairwoman Laura Parry, Moapa Band of Paiute Indians
Patricia McCabe, Logan Simpson
Luke Shillington, 8minute Solar Energy

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Appendix N

Desert Tortoise Translocation Plans

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DESERT TORTOISE TRANSLOCATION PLAN: SOUTHERN BIGHORN SOLAR I PROJECT
CLARK COUNTY, NEVADA

Prepared for:
U.S. FISH AND WILDLIFE SERVICE
Southern Nevada Field Office
4701 North Torrey Pines Drive
Las Vegas, Nevada 89130

Prepared by:
Heritage Environmental Consultants, LLC

for

300MS 8me LLC

December 2020

TABLE OF CONTENTS

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1.0 INTRODUCTION

This translocation plan describes the methods for moving Mojave desert tortoises (*Gopherus agassizii*) from the development area of the proposed Southern Bighorn Solar Project I (SBSP I; Project); also discussed are estimates of tortoise densities, health status; and details of proposed post-translocation monitoring, and reporting. All activities described in this translocation plan will be managed and overseen by the Proponent.

The area directly and indirectly affected by the development of the solar facility and translocation efforts totals approximately 14,890 acres. The up to approximately 2,600-acre solar site and 98 acres of rights-of-way (ROWs) for the collector line and access roads would be developed as part of the Project. The remaining approximately 12,192 acres represent the Study Area Recipient Site (Recipient Site) wherein some tortoises would be translocated (approximately 500 m buffer around the solar site) and 1.5 km buffer around the Recipient Site. Tortoises from the solar site may be translocated into the Study Area Recipient Site and monitored post-translocation.

All translocation activities described in this plan will be coordinated between the Proponent (and associated contractor(s)), the Moapa Band of Paiutes (Band) and the Bureau of Indian Affairs (BIA) as the lead federal agency, and other appropriate agencies, such as U.S. Fish and Wildlife Service (USFWS).

1.1 Description of Project

The Project would be located on the Moapa River Indian Reservation (Reservation) and a Federally-designated utility corridor on Reservation lands managed by the Bureau of Land Management (BLM.

The proposed Project would be located approximately 30 miles northeast of Las Vegas in Clark County, Nevada, west of I-15 and east of U.S. Highway 93. The SBSP I would be located on up to 2,599 leased acres on the Reservation..

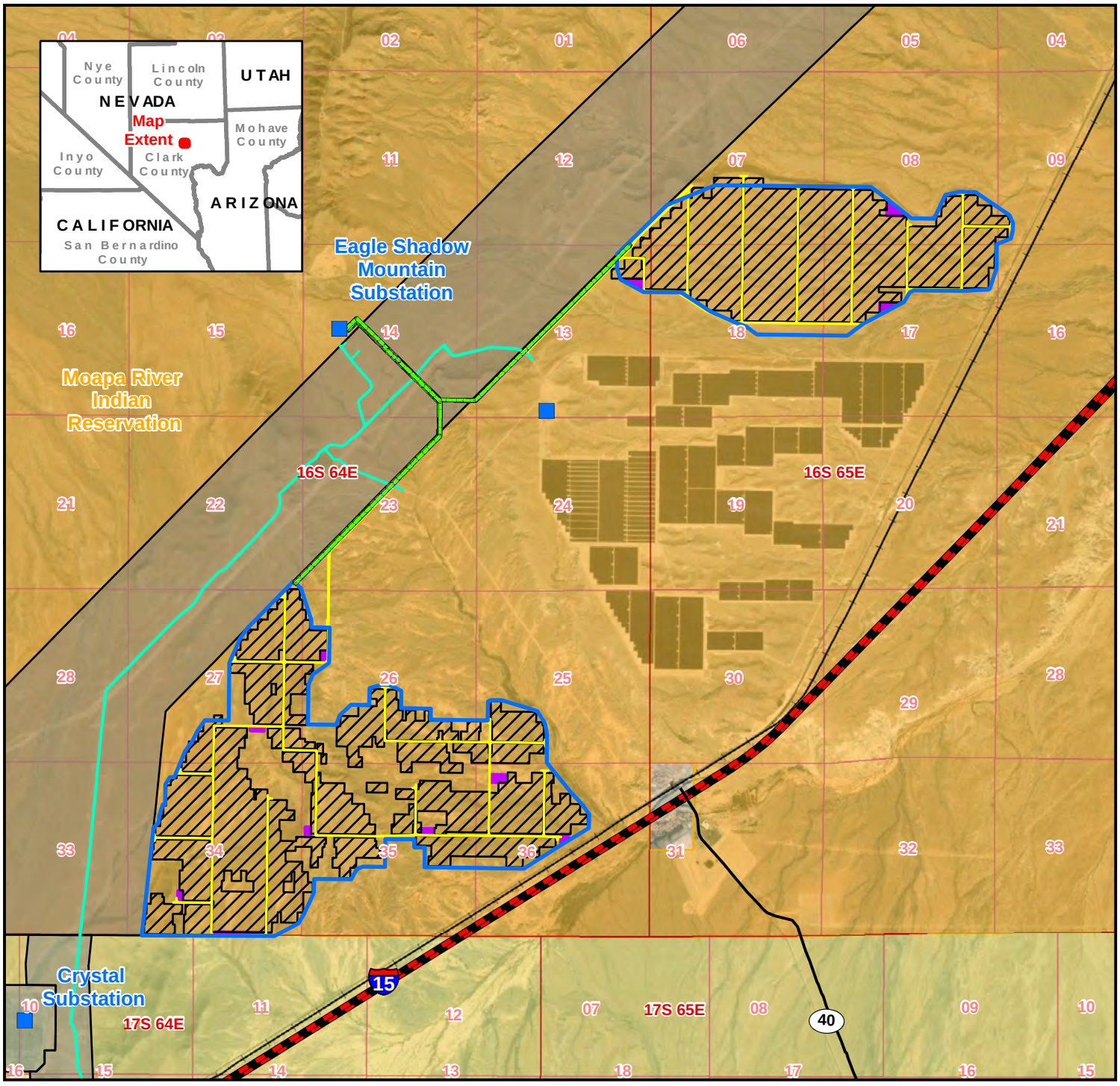
Major Project components include the following:

- Solar fields
- Battery Energy Storage System (BESS)
- Collector line
- Site fencing
- Communications systems infrastructure
- Operation and maintenance (O&M) building
- Access roads

The majority of the Project is located on the Reservation. A portion of the collector line is located on the Reservation within a designated utility corridor that is managed by the BLM. A portion of the existing access road is located on BLM lands. **Figure 1** shows the location of the proposed components of the Project and associated facilities.

Power produced by the Project would be conveyed via the collector line to the SBSP 1 substation, which would be constructed in the previously approved Eagle Shadow Mountain high-voltage area. From there, the electricity generated would connect to the existing 230-kilovolt (kV) transmission generation interconnection (gen-tie) line within a designated utility corridor which would deliver the electricity to the regional grid at NV Energy's Reid Gardner Substation.

A complete Project description is presented in Chapter 2 of the Project BA (BIA 2020).



Project Components

- Collector Lines
- Existing Access
- New Access
- Lease Area
- Solar Panel Installation Area
- Laydown Yard

General Features

- Existing Substation
- Interstate
- Major Highway
- Railroad
- Designated Utility Corridor
- Township / Range
- Section Line

Jurisdictional Land Ownership

- Bureau of Land Management Land
- Indian Land

0 0.25 0.5 0.75 1

Miles

Universal Transverse Mercator
North American Datum 1983
Zone 12 North, Meters

SOUTHERN BIGHORN SOLAR I PROJECT

Figure 1
Project Components

Map Extent: Clark County, Nevada

Date: 09-11-20 | Author: rnc

2.0 Goals and Objectives

The Project area (also called the solar site) is known to be occupied by the Mojave desert tortoise, a state and federally threatened species (USFWS 1990). Here, some tortoises discovered in the impact area will be directly translocated into the nearby Study Area Recipient Site (which also possess existing tortoise populations) and other tortoises will be moved to holding pens before releasing them back into the project area or translocating them to other suitable areas as determined in coordination with USFWS, following the completion of construction. The goal of the translocation plan is to evaluate the effectiveness of developing the site in a way that leaves vegetation and allows for reoccupation by desert tortoises. A portion of the translocated tortoises will be held temporarily in pens and returned to the project area, whereas others will be translocated up to approximately 500 meters adjacent to the project fence and allowed to return on their own. Specifically, those tortoises found greater than approximately 500 meters from the fenceline will primarily be translocated into the nearby Study Area Recipient Site on a case-by-case basis if determined appropriate through coordination with USFWS. Those tortoises found in the project interior will primarily be temporarily penned and returned to the project interior following construction (see **Section** 5). In an effort to select release locations which meet the criteria of USFWS guidelines (USFWS 2018), as updated in coordination with USFWS, data on the habitat and tortoise densities within the Project area (including preliminary data about the surrounding recipient area) was collected in Spring 2019.

The objectives of this translocation plan are to provide:

1 Estimates of tortoise population density within the Project site and Recipient Sites;
2 Detailed descriptions of pre-clearance, translocation/return, and post-translocation/return monitoring methods;
3 Methods to avoid and minimize stress, disturbance, and injuries to translocated/returned and resident tortoises; and,
4 Strategies for post-translocation/return monitoring and reporting to help maximize survivorship and evaluate the short-term effectiveness of translocation/return.

2.1 Plan Overview

These steps are presented in the chronological order in which they have been or will be conducted and have been compiled from USFWS guidance (USFWS 2019), as updated in coordination with BIA, and USFWS.

Those tasks listed under Sections 3.0 and 4.0 were completed by the Proponent in Spring 2019. The steps outlined in Sections 5.0 and 6.0 are planned to occur prior to and during construction of the project, and for post-translocation monitoring. Data collection and reporting are discussed under each section.

For purposes of this plan, the tortoise active season is defined as April 1 to May 31 and September 1 to October 31. All other times of the year are referred to as the less active season. "Known individuals" refers to any tortoise that will be subsequently identified opportunistically during pre-translocation monitoring within the Project area prior to the start of clearance activities. "Additional individuals" refers to tortoises that may be identified during clearance surveys but were not previously recorded within the Project area. No tortoises are currently transmittered. Adult tortoises are defined as animals ≥180 mm MCL, and juvenile tortoises are animals <180 mm MCL.

The following timeline provides a general description of the sequence of events:

Spring 2019-Fall 2020

- Translocation of tortoise was determined necessary for the development of Project.
- Initial transect surveys were conducted within the project area and portions of proposed Recipient Site (defined as the area immediately outside the project area boundaries plus a 1.5 km buffer) to estimate tortoise densities. During this survey effort, no tortoises were marked or given health assessments. However, these surveys serve as the basis for all density estimates for both the solar site and the Recipient Site.

Spring 2021

- Surveys will be conducted within the project area and Recipient Site to collect health assessment information about existing tortoise populations.
- Anticipated preparation of first Translocation Review Package (TRP) for first translocation event, which will include proposed disposition (UTMs plus a buffer), health assessment data, enzyme-linked immunosorbent assay (ELISA) results for the pathogens *Mycoplasma agassizii*, and *M. testudineum*, and quantitative polymerase chain-reaction (qPCR) results for *Mycoplasma agassizii*, *M. testudineum*, and testudinid herpesvirus 2., if available. Addenda for unknown adults located during clearance efforts including health assessment data and photographs will be submitted incidentally to BIA and the USFWS's Desert Tortoise Recovery Office (DTRO) for approval.
- Continued monitoring of transmittered tortoises or resurvey prior to translocation.

Fall 2021

- Translocate tortoises.
- Short-term monitoring will begin, following translocation, on a subset of tortoises. (Section 6.1)

Beyond 2021

- Continued monitoring of transmittered tortoises or resurvey prior to translocation.
- Long-term monitoring will begin, following translocation, on a subset of tortoises. (Section 6.1)

3.0 PROJECT AREA, TORTOISE ESTIMATES, AND HEALTH

3.1 Project Area Description

The Project is located southwest of the Town of Moapa, in the Dry Lake Valley, which is within the southern portion of the Basin and Range province characterized by mountains interspersed with north- south trending valleys. Specifically, the Arrow Canyon Range to the west flanks this portion of the Dry Lake Valley and the North Muddy Mountains are to the east.

Mojave creosote bush scrub is the dominant vegetation community in the study area. This vegetation community is common throughout Clark County. This community typically is dominated by creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*) with other associated species. Also, Sahara mustard (*Brassica tournefortii*), a plant species designated by the Nevada Department of Agriculture (NDA) as a Category B weed species, is likely found within the area or nearby. Category B species are defined by NDA as "weeds established in scattered populations in some counties of the state; actively excluded where possible, and actively eradicated from nursery stock dealer premises; control required by the state in areas where populations are not well established or previously unknown to occur."

Vegetation within the proposed Project area previously has been mildly disturbed by various activities including off-highway vehicle recreation, flooding, and existing power line construction.

3.2 Project Area Surveys and Research Effort

To assess the status of the desert tortoise in the proposed project area (see **Section 4.2**), field surveys were conducted. In April 2019, biologists experienced with the biota of southern Nevada and the Mojave Desert conducted pre-project tortoise surveys within the Project area in accordance with the 2019 USFWS protocol (USFWS 2019).

3.3 Solar Site Tortoise Estimates

Data collected within the survey area were analyzed using the USFWS 2019 Protocol equation to estimate the number of tortoises within the Project Area. A total of 778 transects of differing lengths were walked over the course of the survey to achieve 100% coverage of the survey area, totaling approximately 1,052 kilometers of transect length. Desert tortoise and desert tortoise sign were observed. A total of 30 adult desert tortoises (≥180 mm MCL) and 2 juveniles were observed over the course of the surveys (**Figure 2**). Desert tortoise sign (scat, carcasses/shell fragments, tracks and burrows) were observed throughout the survey area. The estimated number of adult tortoises within the lease study area was calculated to be 60, with a 95% confidence interval of 41 to 88 adult tortoises during the 2019 surveys.

Eagle Shadow Mountain Substation

15

40

Legend

Project Components

- Collector Lines
- Existing Access
- New Access
- Lease Area

General Features

- Existing Substation
- Interstate
- Major Highway
- Railroad
- Designated Utility Corridor

Survey Results

- Live Desert Tortoise Observation - Adult
- Live Desert Tortoise Observation - Juvenile

0 0.25 0.5 0.75 1

Miles

North American Datum 1983
State Plane Nevada East Feet

SOUTHERN BIGHORN SOLAR I PROJECT

FIGURE 2
Desert Tortoise Observations

Map Extent: Clark County, Nevada

Date: 09-11-20 | Author: rnc

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4.0 RECIPIENT SITES

4.1 Recipient Site Description

The Study Area Recipient Site for this project is defined as a 500 m buffer around the fenceline of the proposed solar site (See **Section 5.0**). A 1.5-km buffer around the set of potential release locations is also considered as the area potentially affected by translocation activities. Some areas within the 1.5-km buffer have been excluded due to the presence of barriers to tortoise movement and occupancy (e.g., steep terrain) or other factors (e.g., areas proposed by the tribe for future development). The Recipient Site exhibits similar topographic, hydrologic, and vegetative characters as the solar site. It is largely dominated by creosote bush – white bursage desert scrub. This community is typically dominated by creosote bush shrubs (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*), 0.5-1.5 meters tall, widely spaced, usually with bare ground between. Other common species in this community typically include boxthorn (*Lycium* sp.), hop sage (*Grayia spinosa*), desert trumpet flower (*Eriogonum inflatum*), and Arabian schismus (*Schismus arabicus*). Many species of ephemeral herbs may flower in late March and April if the winter rains are sufficient. This plant community is usually found on well drained secondary soils with very low water-holding capacity on slopes, fans, and valleys. Other, less numerous species of annuals appear following summer thundershowers. This creosote bush scrub is typical of the Mojave Desert.

As described below, tortoises located within approximately 500 meters of the outer boundary, or fenceline, of the solar site would be translocated to the nearest area immediately adjacent to the solar site that is not proposed for development. Tortoises located within the interior of the solar site and greater than approximately 500 meters from the fenceline would be kept in temporary holding pens during construction activities and then either returned to the solar site or translocated to another suitable area determined on a cases-by-case basis through coordination with USFWS following construction. Tortoises encountered within the utility corridor , along the access road and along the water pipeline during construction would be locally relocated out of harm's way (up to a maximum distance of approximately 300 m).

4.2 Recipient Site Surveys and Assessment Effort

Several portions of the Recipient Site were partially surveyed as part of the desert tortoise survey described in **Section 3.2**. One-hundred-percent coverage surveys were conducted over the entirety of these areas following USFWS protocols (USFWS 2009, 2019).

Health assessments have not been performed on any tortoises within the Recipient Site.

4.3 Recipient Site Density Estimate

Surveys conducted in the portions of the Recipient Site documented 13 adult desert tortoises and one juvenile tortoise in 2019. Because only a small portion of the Recipient Site was surveyed formal density estimates have not yet been produced. Surveys planned for Spring 2021 would more

comprehensively survey the proposed Recipient Site and provide sufficient data for density estimation.

The maximum recommended post-translocation density within the North Eastern Mojave Recovery Unit (NEMRU) is 6.1 adult tortoises/sq. km (USFWS 2018). The Project is expected to move between 41 and 88 adult tortoises and an unknown number of juvenile tortoises. However, some portion of these may be returned to the interior of the project site following construction while others would be moved to the nearest suitable site outside the proposed disturbance areas – a distance of less than 500 m. Given the short distance of these translocations, these tortoises would likely be moved a distance within the typical diameter of a tortoise home-range and would, therefore, not contribute substantially to increased densities in the Recipient Site. Furthermore, grading of the solar site would be minimized during construction and existing vegetation would be crushed and/or trimmed where feasible; permanent fencing for the project would be permeable to desert tortoises and many relocated or translocated tortoises are expected to return to the project area following construction. For these reasons, the proposed translocation procedures would largely preserve the existing spatial juxtaposition of tortoises in and around the Project site and Recipient Site.

Finally, the density targets for relocation areas were promulgated, in large part, to reduce the risk of increased disease transmission. Since tortoises would be moved very short distances during this Project, it is unlikely that individuals would experience disease transmission risks to which they are not already exposed.

If the total number of adult tortoises found during clearance surveys exceeds the project's translocation limit, as established by the project's Biological Opinion (BO), then the Proponent would be subject to any additional coordination, surveys, and assessment required as a result of BLM/BIA's re-initiation of Section 7 consultation with USFWS.

4.4 Control Site

The project proposes to use data from ongoing research efforts at the Coyote Springs ACEC as its control, or another control site that would be approved by the USFWS. Coordination with the U.S. Geological Survey, Western Ecological Research Center is ongoing to ensure that the timing and data collection are consistent with that described in **Section 6.2**.

4.5 Reporting Requirements During This Phase (Sections 3.0 and 4.0)

The Proponent shall prepare TRPs for both known and unknown individuals prior to translocation, including a 14-day DTRO review period for known tortoises. Alternate timelines to be discussed with DTRO prior to translocation if weather and/or logistical considerations become a factor. Reporting requirements include:

- Reporting requirements for the BO, as applicable.
- Incidental reporting requirements for any injuries/mortalities.

- Report results of tortoise density estimates and health assessment results to BIA and USFWS.

5.0 TRANSLOCATION/RELOCATION PROCEDURES

5.1 Overview of Translocation/Return Procedures

This section provides details of the following steps for each translocation event (in chronological order):

A. **Indirect Translocation Group**: If the tortoise is discovered > approximately 500 meters from the project fence line, the individual will be moved to a temporary holding pen, located near the project, and held during construction. Because vegetation would be crushed and/or trimmed where feasible during construction these tortoises may be returned to the interior of the completed solar project as close to their original capture site as possible. Penned tortoises may be translocated to a different area on a case-by-case basis as determined in coordination with USFWS. The Proponent and the Band/BIA/BLM will coordinate with DTRO to ensure that release sites do not conflict with prior or subsequent translocations and meet the needs of the long-term monitoring plan. Surveys of the Recipient Site will be conducted and will include health assessments which will contribute to the identification of specific release locations.

Direct Translocation Group: If a tortoise is discovered < approximately 500 meters from the project fence line, the Recipient Site will be the nearest suitable location outside the project fence line.

The project will attempt to balance the number of adult tortoises in each group (up to a minimum of 20 tortoises per group) in order to facilitate long-term monitoring. As such, some individuals discovered < approximately 500 meters from the project fenceline may be moved to temporary holding pens before being directly translocated to the project following construction. Decisions about final disposition of each tortoise will be made in coordination with USFWS.

The project will also monitor up to 20 juvenile tortoises in the project interior (pen-and-return group) and up 20 juvenile tortoises in the over-the-fence group. The project will attempt to balance the samples of juvenile tortoises within each relocation group (up to a minimum sample of 20) using the same procedures described above. If fewer than 40 juvenile tortoises are found between the two groups, the project will augment the groups with captive-reared tortoises obtained from USGS.

B. A Translocation Review Package (TRP; disposition plan) will be submitted for approval that includes all tortoises to be moved from the Project Site (both tortoises to be translocated and tortoises to be penned and potentially returned to the project interior; no TRP will be required for tortoises found along the collector lines as they would simply be moved from harm's way). Results from health assessments conducted prior to translocation will be used to develop the TRP (See Section 5.2), and a final review of the TRP for known

individuals will occur prior to translocation. The TRP will also include dispositions for all unknown individuals, both adults and juveniles, and a final review of the TRP for unknown individuals will occur whenever possible, if timing allows.

C. Passive exclusion of tortoises during project-specific fence construction (See Section 5.3).

D. Health assessments, which include collection of samples via venipuncture and oral swabs, will occur prior to translocation for all tortoises that will be relocated back into the project area or translocated to the Recipient Site (Section 5.4).

E. After health assessments and following approval of the final TRP, move individuals found greater than approximately 500 meters from the fence line into temporary holding pens and translocate known individuals that are located less than approximately 500 meters from the fence line from the project site(s), provided tortoises pass a final check through the translocation suitability algorithm on day of translocation (Section 5.5).

F. Conduct 100% clearance surveys per protocol within the Project site (Section 5.7).

G. Subsequent TRP addenda (including health data and photographs) and translocation of additional individuals including juvenile tortoises, as discovered during project-specific clearance surveys. Subsequent translocation phases of the project would be conducted as per USFWS guidelines (USFWS 2019), as updated in coordination with USFWS, until all known tortoises are removed from the solar site.

Table 1 – Disposition activities for telemetered and un-telemetered individuals found within the Project Site

Status	Initial Location	Weight (g)	MCL (mm)	Class	Mark	Transmitter	1st Health Assessment and Sample Collection[1]	2nd Health Assessment (14 – 30 days prior to translocation)[1]	Final TRP Review	Final Health Assessment (immediately prior to translocation)[1]	Translocate/ Return
Unknown	>500m from fence line	< 100		Hatchling	Yes	No	Yes (No samples)	Yes (if timing allows)	Yes	Yes	Upon detection: Hold in temporary pens, return following construction.
		≥ 100	< 180	Juvenile	Yes	Yes	Yes	Yes (if timing allows)	Yes	Yes	Upon detection: Hold in temporary pens, return following construction.
		≥ 100	≥ 180	Adult[2,3]	Yes	Yes	Yes[2]	Yes (if timing allows)	Yes[3]	Yes	After TRP approval: Hold in temporary pens, return following construction.
	<500m from fence line	< 100		Hatchling	Yes	No	Yes (No samples)	N/A	No	Yes	Upon detection: translocate
		≥ 100	< 180	Juvenile	Yes	Yes	Yes	N/A	Yes	Yes	After TRP approval: Translocate (may use temporary pens if necessary for sample size)

Status	Initial Location	Weight (g)	MCL (mm)	Class	Mark	Transmitter	1st Health Assessment and Sample Collection[1]	2nd Health Assessment (14 – 30 days prior to translocation)[1]	Final TRP Review	Final Health Assessment (immediately prior to translocation)[1]	Translocate/ Return
		≥ 100	≥ 180	Adult[2,3]	Yes	Yes	Yes	No	Yes	Yes	After TRP approval: Translocate (may use temporary pens if necessary for sample size)
Known	>500m from fence line	≥ 100	< 180	Juvenile	Yes	Yes	Yes	Yes	Yes	Yes	Upon detection: Hold in temporary pens, return following construction.
		≥ 100	≥ 180	Adult[2,3]	Yes	Yes	Yes[2]	Yes	Yes[3]	Yes	After TRP approval[4:] Hold in temporary pens, return following construction.
	<500m from fence line	≥ 100	< 180	Juvenile	Yes	Yes	Yes	Yes	Yes	Yes	After TRP approval: Translocate (may use temporary pens if necessary for sample size)

Status	Initial Location	Weight (g)	MCL (mm)	Class	Mark	Transmitter	1st Health Assessment and Sample Collection[1]	2nd Health Assessment (14 – 30 days prior to translocation)[1]	Final TRP Review	Final Health Assessment (immediately prior to translocation)[1]	Translocate/ Return
		≥ 100	≥ 180	Adult[2,3]	Yes	Yes	Yes	Yes	Yes	Yes	After TRP approval: Translocate (may use temporary pens if necessary for sample size)

[1]The 1st, 2nd and final health assessments may occur concurrently; depending on size class and when in the process tortoises are located. Samples are considered valid for 1 year following collection. New samples will be collected if translocation does not occur within 1 year of sample collection

[2]For adult tortoises located during the winter months, venipuncture will occur in the next health assessment season, and agency coordination is needed prior to translocating an adult tortoise during the winter months.

[3]Unknown adults may be translocated prior to receiving ELISA results if the percentage of unknowns compared to the known population is low and acceptable to the DTRO. Coordination with the DTRO is necessary to translocate prior to ELISA results.

5.2 Translocation Review Package and Disposition Plan

The Translocation Review Package and disposition plan for the project will provide an overview of tortoises' demographic information, health and disease status, and proposed disposition location. Each TRP submitted will require approval by the Band, BIA and DTRO prior to tortoise translocation. Disease results <1-year old can be used in the TRP (disposition plan) for initial planning purposes. Each TRP will include dispositions for all known individuals to be moved in the subsequent season (including tortoises located >500 m from the fenceline that would be penned), nests, eggs, juvenile tortoises, and a number of unknown adult tortoises, and will be submitted for agency review and approval 14 days prior to translocation.

TRPs will be coordinated with the Band, BIA, and USFWS to determine the best disposition planning and will consider the construction schedule to determine the best disposition of tortoises prior to translocation. Criteria identified below will inform and help determine specific locations for translocation. Maps with GIS layers will be the primary tool used to assemble the data and identify translocation localities for each group or individual.

Close coordination with DTRO is needed if less than 2 weeks TRP review time is necessary. Any potential exceptions or deviations to the plan due to weather or other logistics must be discussed with DTRO to determine acceptable translocation timing.

The Proponent, the Band, and BIA will coordinate with DTRO to ensure associated release sites meet the needs of the long-term monitoring plan.

TRP/disposition planning will identify the following information requested in the Draft Translocation Guidance (USFWS 2019) for each adult known individual to be translocated:

- Disposition plan (see Appendix H in USFWS 2019 or more recent) for the project-site tortoises and health summary of resident and control tortoises;
- Complete survey data from the project, recipient, and control sites;
- Photographs of individual tortoises as specified on the health assessment data sheet;
- Health assessment data sheets for resident, control, and project-site tortoises, if not submitted previously;
- Maps of the Recipient Site, showing proposed release points of project-site tortoises;
- Maps of the project site (including all project phases and all relevant digital GIS layers), illustrating distribution and health status of project-site tortoises and proposed release sites of tortoises to be moved < 500 m (if applicable); and
- Any other project-specific information that supports or clarifies translocation decisions.

5.2.1 Social Groups and Spatial Relationships

Tortoises are known to have social hierarchies within populations. Using up-to-date information at the time of each project translocation event, tortoises with nearby home ranges will be presumed to be a cohort and will preferentially be translocated in a manner which seeks to maintain some degree of social connectivity, when consistent with the goals of the USFWS long term monitoring

plan. To the extent feasible, known social groups and spatial relationships will be mimicked in the final disposition plan.

5.2.2 Shelter Site Type and Availability

When determining a release location for an individual tortoise, release site preference will be to find a like-for-like shelter resource. Every attempt will be made to find similar cover sites and habitat to that at the location of each individual on a Project site, otherwise all translocatees shall be released at the most appropriate and available unoccupied shelter sites (e.g., soil burrows, caliche caves, rock caves, in shade at base of shrubs, etc.). Because of the impermanent nature of soil burrows and cave availability, prior to submitting the final disposition plan and determining exact areas of release, potential release sites will be re-investigated for existing burrows and caliche or rock caves that can be used for shelter sites. Known active/inactive tortoise burrows discovered during the surveys would be re-investigated for this purpose.

5.2.3 Predator Sign Densities

While some predator sign is expected across any desert landscape, areas where sign is concentrated may indicate a poor choice for tortoise disposition planning. Fresh sign will be noted during ground-truthing for shelter sites, and the disposition plan will include translocation sites preferentially located away from known areas of concentrated predator sign, if any.

5.3 Passive Exclusion during Fence Construction

During the installation of temporary exclusion fencing, an attempt will be made to passively exclude known and/or additional individuals found during fence installation, from the Project site using the guidelines in **Table 2**. The location and boundary delineation of any such project fencing will be coordinated between the Proponent and the agencies.

Table 2 – Passive exclusion methods during fence construction

Side of Fence Line	Season	Methods
Outside	All	Leave animal outside fence and construct fence.
>500m Inside Fence	Less active	Leave individual in burrow on Project until translocation (Section 5.5) in following active season. Translocation or passive exclusion of some individuals may be considered with agency coordination and approval (e.g., if a tortoise makes a long-distance movement near or across the project boundary).
<500m Inside Fence		Leave individual in burrow on Project until translocation (Section 5.5) in following active season. Relocation or passive exclusion of some individuals may be considered with agency coordination and approval.
>500m Inside Fence	Active	Translocate as discussed in Section 5.5
<500m Inside Fence		Attempt to passively exclude by creating and observing temporary gap(s) in fence line as well as temporary exclusion fencing preventing the tortoise from moving into the site interior. If the individual does not passively exit the project site, then translocate immediately outside of fence and monitor as discussed in Section 5.5. Passively excluded tortoises would be marked and would undergo health assessments but no TRP would be prepared

5.4 Health Assessments and Sample Collection

Health assessments and sample collection will follow the most recent USFWS guidelines (USFWS 2019). At least one full health assessment with sample collection will be performed for all tortoises to be translocated. Samples will be collected via venipuncture and oral swab. In addition to standard enzyme-linked immunosorbent assay (ELISA) testing of plasma, oral swabs will be tested via quantitative polymerase chain reaction (qPCR) for *Mycoplasma agassizii*, *M. testudineum*, and testudinid herpesvirus 2. Samples and their results are valid for one year will be repeated if translocation is delayed.

All known tortoises from the project that had biological samples previously collected, will receive two additional health assessments (includes full physical examination including oral cavity, but no sample collection) spaced 14 – 30 days apart with the second additional assessment occurring within two days of the translocation. Adult (≥ 180 mm MCL) unknown individuals from the project located incidentally or during clearance will be health assessed and translocated on a case-by-case basis in close coordination with DTRO (see Table 1).

Juvenile (< 180 mm MCL) tortoises discovered >500 meters from the project fence line will be given a full health assessment, including sample collection, where size/weight permit, prior to translocation. Any tortoise which does not pass the health algorithm (USFWS 2019, Appendix G)

at the time of translocation (e.g. showing severe injury or severe clinical signs of disease) would not be translocated and their disposition discussed with USFWS (Section 5.6) and the applicable project proponent would begin coordination with the agencies as to that individual's final disposition.

Any biological samples not sent to laboratories for testing will be deposited with the University of California Los Angeles, along with fees to cover sample processing, as per USFWS (2019) guidance.

5.5 Translocation

The first translocation phase of the Project will include known individuals from the Project site. Known tortoises will be translocated from the project site after health assessments and approval of final TRP, provided tortoises in the known cohort pass a final check through the translocation suitability algorithm on the day of translocation (Section 5.4).

Translocation will follow installation of exclusionary tortoise fence, as determined in coordination with the agencies. Translocation events will occur to specific locations outlined in the approved project-specific TRP and disposition plan; The project will employ two strategies for moving tortoises, depending on the initial capture location of each animal.

1 **Short-distance Translocation:** Tortoises found within approximately 500 meters of the solar facility fenceline would be translocated to areas immediately outside of the project's temporary exclusion fencing. Following the completion of construction, the exclusion fencing would be removed; the permanent site fencing would be permeable to desert tortoises and existing vegetation on the project site is expected to be crushed and/or trimmed to the extent feasible to facilitate construction and operation of the project. Therefore, the short-distance translocation strategy is designed to allow tortoises to freely move through, and potentially re-occupy, the site following construction. A portion of the adult tortoises in this group may be moved into the "Indirect Translocation" group (below) to balance sample sizes (up to a minimum sample size of 20). Decisions about the disposition of individual tortoises will be made in coordination with USFWS.

2 **Indirect Translocation or return to project site:** Tortoises found in the interior of the solar facility fenceline (> approximately 500 meters from the exclusion fence) would be moved to temporary pens for the duration of construction and may be returned to the solar facility interior (as close to original capture location as possible) as soon as vegetation/site conditions are suitable for tortoises to be released in the interior of the site. Penned tortoises may be translocated to an alternate suitable location following construction, as determined on a case-by-case basis through coordination with USFWS.

Figure 3 depicts the translocation zones and buffer.

Eagle Shadow Mountain Substation

Crystal Substation

15

40

Project Components

- Collector Lines
- Existing Access
- New Access
- Lease Area
- Solar Panel Installation Area
- Laydown Yard

General Features

- Existing Substation
- Interstate
- Major Highway
- Railroad
- Designated Utility Corridor
- Recipient Site - Release Zone
- Recipient Site - Buffer

0 0.25 0.5 0.75 1

Miles

North American Datum 1983
State Plane Nevada East Feet

SOUTHERN BIGHORN SOLAR I PROJECT

FIGURE 3
ACTION AREA

Map Extent: Clark County, Nevada

Date: 09-14-20 | Author: rnc

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The density of tortoises within the Recipient Site is variable. Preference will be given to translocating tortoises into areas as close to the initial capture location as possible, in an effort to keep them within their activity area (home range); other release locations may be considered as necessary (e.g. if timing of project development, exclusion fencing, or other reason precludes within-home range translocation). Specific considerations to be included will be based on the construction schedule and will determine the disposition timing of tortoises at time of individual translocation events. Decisions related to performing health assessments, venipuncture and sample collection, transmittering, and translocation, of all individuals are outlined in Table 1.

5.6 Quarantine Facilities

Tortoises may be held *in-* or *ex-situ* (e.g. if temperatures do not allow for translocation, or if tortoises do not pass the health assessment) for a maximum of 12 months (or longer if vegetation conditions do not support the release of tortoises on the project site). Previously constructed and approved enclosure pens are present adjacent to the Project site and would be used if any quarantine is necessary. Quarantine would only be used as necessary (with the exception of those tortoises to be temporarily penned and released directly back into the project area), in coordination with USFWS.

Key elements of caring for penned desert tortoises will include:

- Ensuring each desert tortoise is housed individually to prevent potential disease transmission (juveniles may be housed together as determined on a case-by-case basis in coordination with USFWS).

- To the extent feasible the sites where pens are constructed should have ample vegetation that is minimally disturbed during construction and appropriate soil for tortoises to dig their own burrows. Ideally, each pen would have ample vegetation such as creosote bush, yuccas, ephedra, and bursage to provide shade, and other plants like globe-mallow to serve as food sources.

- In pens where there is not sufficient native vegetation to nourish the animal, some produce (kale, collards, dandelion greens, etc.) may be used to supplement diet. Additionally, Mazuri Tortoise Diet 5M21 may also be considered if appropriate.

- Water would be provided during the active season until the time they enter hibernation.

- Measures would be taken to reduce potential for contamination such as disinfecting footwear after leaving a pen.

More details about caring for penned tortoises are found in current USFWS guidance (USFWS 2018) which would be followed.

5.7 Clearance Surveys

It is expected that the majority of adult tortoises occupying the Project area will be known individuals. Some of these individuals will likely be passively excluded during perimeter fencing activities and the remainder of the known individuals will be moved during the project translocation event. This section assumes USFWS protocol clearance surveys would be conducted during the more active season (spring or fall). Under specific scenarios, clearance might also be attempted during the less active season during appropriate temperature windows following coordination between the Proponent and the agencies.

Clearance surveys on the Project will be conducted after tortoise exclusion fencing is effectively installed on the site. Clearance surveys will be conducted in accordance with this plan, the Biological Opinion for the Project, and the *Desert Tortoise Field Manual* (USFWS 2009), or most current protocols.

The following conditions will apply:

1. Clearance surveys at the project site must consist of at least 2 consecutive surveys of the site. Surveys shall involve walking transects less than or equal to 5 meters wide under typical conditions. In areas of dense vegetation or when conditions limit the ability of the surveyors to locate desert tortoises, transects should be reduced in width accordingly. Clearance surveys should be conducted when desert tortoises are most active (April through May or September through October) but may be conducted during the less active season if necessary and in coordination with the USFWS. If desert tortoises are found during the second pass, the USFWS may require a third survey in zones where tortoises were found during the second pass.
2. During the first pass, all sign (scat, carcasses, tracks, etc.) should be removed from the Project area. All burrows are recommended to be inspected and excavated during the first pass, including canid complexes, caliche caves, and tortoise burrows. Larger complexes that take longer/require equipment to excavate (and are not completely excavated on the first pass) are recommended to be fenced with temporary exclusion fencing in the event the burrow/den/complex is occupied by a tortoise.
3. All tortoise scat will be collected or crushed and tracks or mating rings brushed out during each pass of the clearance surveys to facilitate locating tortoises that may have been missed on previous passes. All carcasses will be documented by GPS.
4. Clearance surveys will be scheduled to occur in the best temperature window hours to the extent feasible to maximize the likelihood of finding active tortoises (e.g. when they are likely to be above ground). Guidelines recommend all clearance activities (capture, transport, release, etc.) shall occur when ambient temperatures are below 95 degrees F (35 degrees C) and not anticipated to rise above 95 degrees F (35 degrees C) before handling and processing desert tortoises are completed (USFWS 2009), and translocation guidance recommends releases should occur between April 1 – May 31, and September 1 – October

15. Translocation may be attempted outside the active season if necessary and in coordination with the USFWS. Further guidance states that translocations may occur when temperatures range from 18-30°C (65-85°F) and are not forecasted to exceed 32°C (90°F) within 3 hours of release or 35° (95°F) within 1 week of release. Additionally, forecasted daily low temperatures should not be cooler than 10° C (50°F) for one week post-release. (USFWS 2018). Exceptions to these temperature thresholds may be granted in coordination with USFWS.

5. When an additional (i.e., unknown) adult or juvenile individual is found during clearance surveys, it will be assigned a unique number and marking using paper tags per USFWS (2015), transmitter applied, and given two health assessments prior to translocation (one full health assessment including sample collection prior to translocation plus a health assessment at time of translocation). Tortoises found > approximately 500 m from the project fenceline may be moved to pens upon detection and while health assessments are ongoing. Final TRPs for additional (unknown) individuals will be reviewed by the agencies prior to translocation for these additional individuals, when timing allows.

5.8 Post-Clearance Translocation Procedures

After final clearance is complete, there remains a possibility of finding tortoises within the project site, especially small tortoises <180 mm MCL. For tortoises that are <180 mm MCL and eligible to be translocated upon detection (Table 1), final disposition will be coordinated with USFWS (e.g., penning or other case-specific options may be considered). For tortoises that are ≥ 180 mm MCL, translocation will occur after TRP approval is obtained.

6.0 MONITORING, ADAPTIVE MANAGEMENT, AND REPORTING

All activities related to translocation, compliance, and biological monitoring will be managed and overseen by the Project proponent and conducted in the field by qualified third-party firms providing Authorized Biologists and biological monitors as approved under the Project's BO and associated incidental take statement. Standardized data sheets and/or digital data recorders will be used to record individual tortoise locations, behavior, health indications, burrow locations, etc. during all monitoring activities. Post-translocation monitoring will include a short-term monitoring effort (up to one year) to monitor the translocated tortoises' immediate well-being, and a long-term monitoring program developed in coordination with the Band, USFWS, BLM, and BIA (Section 6.1 and 6.2), outlined prior to translocation. All monitoring would be carried out within the Project area as well as the Recipient Site and a control site. Most monitoring protocols below refer to proportions (or all) of the translocated population – note that as these prescriptions apply to the Recipient Site and control sites, only a subset of tortoises would be used to provide sufficient comparison to the project area.

6.1 Short Term (≤12 month) Monitoring

For the short-term monitoring program, translocated tortoises would be monitored by the Proponent for a period of up to one year after each individual tortoise's first translocation date. Transmitters used for this project may include global positioning system (GPS) technology and/or traditional VHF radio telemetry. The intent is to enable the collection of high-resolution movement data with minimal field effort and animal handling. The goal of this period of more intensive monitoring is to increase survivorship. A total of 20 translocated adult and 20 translocated juvenile tortoises (selected using a stratified random design to include a balanced sex and age distribution) as well as 20 adult and 20 juvenile tortoises returned to the project interior or translocated to another suitable site as determined on a case-by-case basis through consultation coordination with USFWS, will be monitored for one-year post translocation: nominally at the frequency outlined below. If fewer than 20 juvenile tortoises are discovered on the project site, this group may be augmented with captive-reared individuals obtained from USGS. The Proponent will coordinate with BIA, BLM, and USFWS for any monitoring schedule which is reduced from this schedule.

Transmitters will be changed throughout the monitoring period, as necessary due to damage, to maintain battery life, etc. Any transmittered tortoises will be evaluated prior to discontinuing telemetry; individual tortoises may remain in the monitoring program on a case-by-case basis to ensure their well-being (i.e. tortoises consistently found on a fence line, not digging their own burrows, or showing a low body condition score).

At a minimum, all translocated tortoises will be monitored until health assessments are completed during the subsequent active season at the frequency below, as directed by the BIA and USFWS (noting that GPS based tracking, if utilized, would far exceed these tracking frequencies):

- Once within 24 hours of release,
- Once daily for two weeks after release,
- One time per week during active season (as defined by site-specific movement data),
- Once per week during the less active summer season and twice per month during less active winter season,
- The Proponent will coordinate with the agencies to discuss individual translocated tortoises that display behaviors that otherwise endanger their well-being. Actions may include more frequent monitoring of such individual(s) and/or actions to aid survival of the individual(s) tortoise.

One health assessment (with venipuncture and oral swabs) will be conducted post-translocation for all individuals during the first year, between May 15 – October 31 (tortoises released in the spring will be health assessed in the subsequent fall), as per guidelines (USFWS 2019) or by specific approval by USFWS. Any health problems or mortalities observed will be reported to USFWS according to the requirements of the Project BO, which shall also include as full an investigation as possible to determine cause. Fresh carcasses, after a full site investigation, will be

recovered for necropsy as directed by the USFWS. Animals showing severe clinical signs of disease at any time will be reported by the respective proponent to the agencies for coordination of disposition.

Following health assessments during the first active season after translocation, up to 20 short-distance translocated tortoises and up to 20 resident tortoises in the Recipient Site (each cohort selected using a stratified random design to include a balanced sex and age distribution) will be monitored until the following active season: nominally at the frequency outlined below.

- One time per week during active season (as defined by site-specific movement data),
- Once per week during the less active summer season and twice per month during less active winter season,
- The Proponent will coordinate with the agencies to discuss individual translocated tortoises that display behaviors that otherwise endanger their well-being. Actions may include more frequent monitoring of such individual(s) and/or actions to aid survival of the individual(s) tortoise.
- The Proponent will coordinate with BIA and USFWS for any monitoring schedule which is reduced from this schedule.

6.2 Long Term Monitoring

Long-term monitoring would consist of two primary goals: 1) additional direct tracking of individual movements to assess re-occupation of the project area as well as environmental covariates potentially influencing tortoise movements; 2) assessment of evidence of reproduction on the site.

6.2.1 Direct Tracking

Direct tracking would continue for five years following translocation to determine space-use patterns of translocated desert tortoises. In the project area, this tracking program would include: 1) adult and juvenile tortoises (with a target sample size of 20) that were held in pens and directly relocated to the project site; and 2) approximately 20 of the tortoises translocated a short distance. In the Recipient Site and the control area a sufficient subset of available tortoises would be tracked for comparison to the project site (with a target sample size of 20 in each group).

This direct tracking would estimate the proportion of sampled tortoises that re-occupy the Project area in the short term, behavioral correlates of any such re-occupation (e.g., time to re-occupancy, home-ranging behaviors, etc.) and whether the release location influences the ultimate re-occupation or the dynamics of such re-occupation. Tortoises that have ceased to make substantial movements may be removed from the direct tracking program early. Annual reports would be prepared for this portion of the long-term monitoring and would be submitted to the Band, BIA and USFWS.

The Proponent would also collect environmental covariates of movement during years 1 and 2 (and any contingency years added as part of adaptive management) that will be used to assess the vegetative recovery of the project area and how such recovery influences the movement ecology of tortoises (variables measured will be coordinated with USFWS to maximize comparability of results across neighboring projects to the maximum extent practicable). A random or systematic sample of vegetative monitoring plots will be established within the project area. At each plot, biologists will assess: species composition (including the relative abundance of non-native species); structural metrics (e.g., shrub height, aerial cover of shrubs, herbs, grasses,); evidence of past or ongoing disturbance; and, shrub growth (using, e.g., stem elongation). Vegetative metrics that potentially relate to tortoise movement behaviors will be extrapolated to the larger environment using kriging and included as covariates in tortoise movement models (e.g., integrated step-selection analysis) to assess the degree to which these factors influence tortoise behavior.

6.2.2 Health Assessments and Ultrasound/X-ray

Health assessments of translocated tortoises would be performed in years 1, 2 and 5 following the completion of construction. These health assessments would be performed only on those tortoises enrolled in the tracking program in **Section 6.2.1**. Health assessment protocols will follow USFWS guidance (USFWS 2019). Any samples not used for tests would be archived, along with appropriate fees, with UCLA. In addition to standard health assessment protocols, x-ray will be used to search for gravid females to be used as evidence of reproduction. Additional health assessments may be required under certain circumstances (**Section 6.3**)

6.3 Adaptive Management

The Proponent will maintain ongoing coordination with the agencies throughout these efforts. Adaptive management strategies will be identified as between the Proponent, their field staff, the Band, BIA, and USFWS.

If there are valid concerns *in the field regarding immediate threat to one or more tortoises*, field staff will make adaptive management decisions in the best interest of the tortoise through 1) coordination in the field; 2) phone calls to agency personnel and the Proponent designated representative made within 24 hours to describe the actions taken and results of the actions; and, 3) a brief email report from field staff that describes the adaptive management actions taken and reasons for and results of these actions.

If there are valid concerns *in the field that do not pose an immediate threat to one or more tortoises*, Proponent's field staff and designated Proponent management representative will notify the Band, BIA, and USFWS of proposed adaptive management decisions via e-mail and field personnel will wait up to one week for concurrence or additional direction and response from agency personnel before actions are taken.

Additional tracking may be required if tortoises have not shown movements consistent with the establishment of home ranges. In such cases, direct tracking may be extended into years 3-5 for a subset of tortoises, as appropriate. Additional health assessments and ultrasound/x-ray may be required during years 3, 6, and/or 7 following construction if unanticipated circumstances arise (e.g., a spike in disease prevalence, complete lack of evidence of reproductive activity, etc.). Finally, an additional mark-recapture survey may be required in year 7 following construction if demographic models show low juvenile recruitment, project-specific population declines, or other concerns. No monitoring will be required to extend past 7 years following construction. All decisions to implement additional monitoring will be made collaboratively between the Proponent, USFWS, BIA, and the Tribe.

6.4 Reporting

Documentation of all activities will be compiled and data synthesized throughout the duration of translocation and monitoring. Data sheets used in the field will be developed in coordination with USFWS. Findings, data, and recommendations will be submitted by the Proponent to the USFWS and appropriate wildlife and/or permitting agencies as required in the project BO. Minimum data requirements will conform to the current translocation health assessment guidance. A quarterly report (via email) summarizing all activities (including a summary of handling, clearance, and translocation events, health and disease results, recommendations for improved management strategies; and post-release tracking vectors and associated data in the in digital format using UTM coordinates and WGS 84 datum for all spatial components) shall be provided to the BIA and USFWS during the short term (up to 12 month) monitoring effort. All injuries and mortalities discovered during monitoring will be reported to the Southern Nevada Fish and Wildlife Office and BIA by telephone (702-515-5230) or email, within 24 hours. The report must include the tortoise ID, date, time, location of the carcass (UTMs), a photograph, cause of death, if known, and any other pertinent information (e.g., sex, size, date and UTMs of last known live location). All activities will be recorded on standardized data sheets and/or on digital data recorders.

Following the completion of the long-term post-translocation monitoring period, a final report will be completed that will assess the overall success of the translocation and monitoring program. The final report will summarize the short-term post-translocation monitoring activities, and other compliance-related reporting as specified in the BO, and will discuss any observed differences in individual behaviors; overall tracking of health assessments for each individual; and any adaptive management employed throughout the one-year monitoring period with an assessment of the success of each adaptive management strategy. Reporting timelines and report content will be coordinated with USFWS guidance to ensure appropriate content is included per permit requirements.

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DESERT TORTOISE TRANSLOCATION PLAN: SOUTHERN BIGHORN SOLAR II PROJECT CLARK COUNTY, NEVADA

Prepared for:
U.S. FISH AND WILDLIFE SERVICE
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December 2020

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TABLE OF CONTENTS

1.0 INTRODUCTION

This translocation plan describes the methods for moving Mojave desert tortoises (*Gopherus agassizii*) from the development area of the proposed Southern Bighorn Solar II Project (SBSP II; Project); also discussed are estimates of tortoise densities, health status; and details of proposed post-translocation monitoring, and reporting. All activities described in this translocation plan will be managed and overseen by the Proponent.

The area directly and indirectly affected by the development of the solar facility and translocation efforts totals approximately 6,042 acres. The up to approximately 1,000-acre solar site and 95 acres of rights-of-way (ROWs) for the collector line and access roads would be developed as part of the Project. The remaining approximately 4,947 acres represent the Study Area Recipient Site (Recipient Site) wherein some tortoises would be translocated (approximately 500 m buffer around the solar site) and 1.5 km buffer which around the Recipient Site. Tortoises from the solar site may be translocated into the Study Area Recipient Site and monitored post-translocation.

All translocation activities described in this plan will be coordinated between the Proponent (and associated contractor(s)), the Moapa Band of Paiutes (Band), and the Bureau of Indian Affairs (BIA) as the lead federal agency, and other appropriate agencies, such as U.S. Fish and Wildlife Service (USFWS).

1.1 Description of Project

The Project would be located on the Moapa River Indian Reservation (Reservation)and a Federally-designated utility corridor on Reservation lands managed by the Bureau of Land Management (BLM).

The proposed Project would be located approximately 30 miles northeast of Las Vegas in Clark County, Nevada, west of I-15 and east of U.S. Highway 93. The SBSP II would be located on up to 1,000 leased acres on the Reservation.

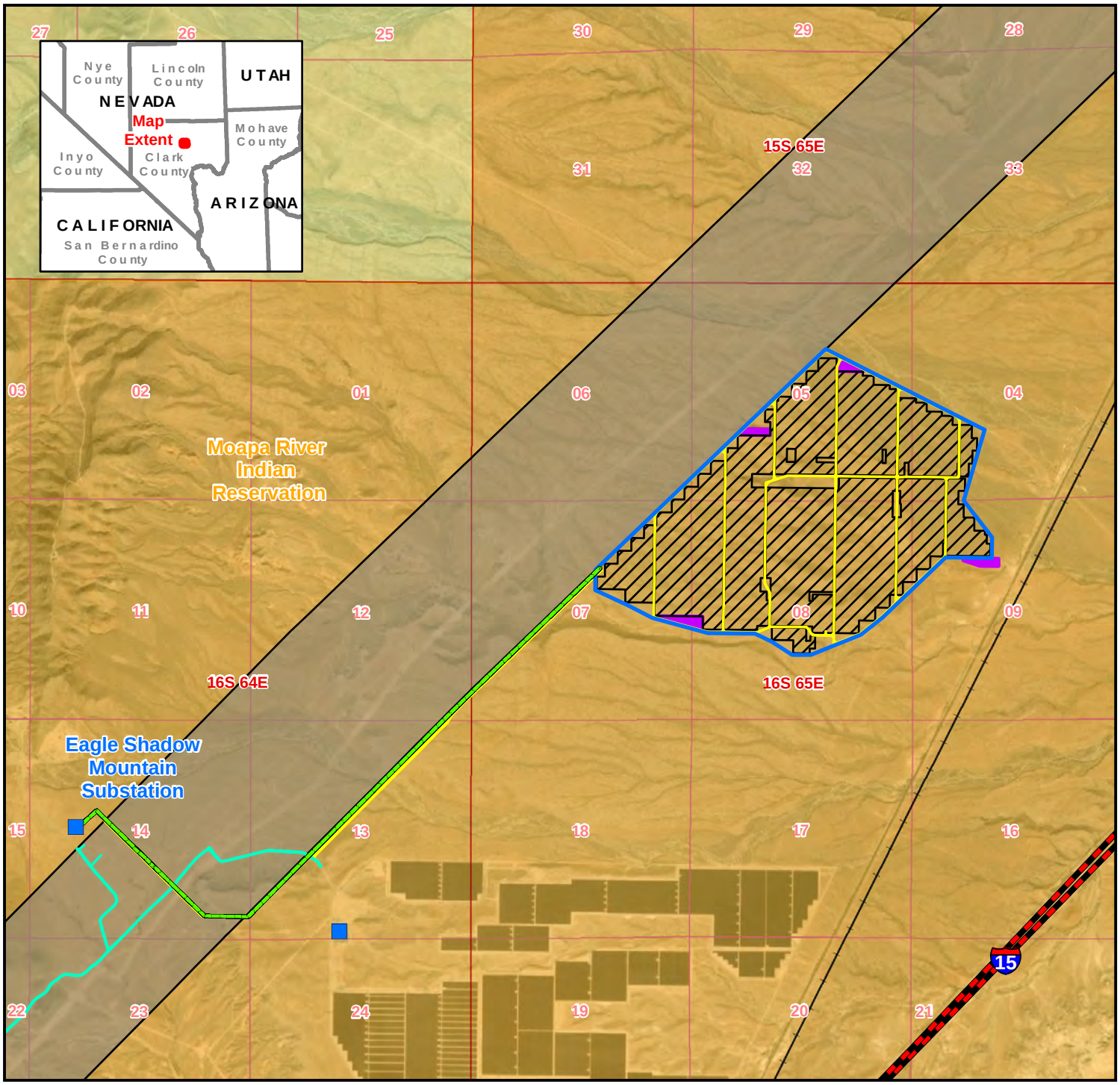
Major Project components include the following:

- Solar fields
- Battery Energy Storage System (BESS)
- Collector line
- Site fencing
- Communications systems infrastructure
- Operation and maintenance (O&M) building
- Access roads

The majority of the Project is located on the Reservation. A portion of the collector line is located on the Reservation within a designated utility corridor that is managed by the BLM. A portion of the existing access road is located on BLM land. **Figure 1** shows the location of the proposed components of the Project and associated facilities.

Power produced by the Project would be conveyed via the collector line to SBPII substation, which would be constructed in the previously approved Eagle Shadow Mountain high-voltage area. From there, the electricity generated would connect to the existing 230-kilovolt (kV) transmission generation interconnection (gen-tie) line within a designated utility corridor which would deliver the electricity to the regional grid at NV Energy's Reid Gardner Substation.

A complete Project description is presented in Chapter 2 of the Project BA (BIA 2020).



Project Components

- Collector Lines
- Existing Access
- New Access
- Lease Area
- Solar Panel Installation Area
- Laydown Yard

General Features

- Existing Substation
- Interstate
- Major Highway
- Railroad
- Designated Utility Corridor
- Township / Range
- Section Line

Jurisdictional Land Ownership

- Bureau of Land Management Land
- Indian Land

0 0.25 0.5 0.75 1

Miles

Universal Transverse Mercator
North American Datum 1983
Zone 12 North, Meters

SOUTHERN BIGHORN SOLAR II PROJECT

Figure 1
Project Components

Map Extent: Clark County, Nevada

Date: 09-11-20 | Author: rnc

2.0 Goals and Objectives

The Project area (also called the solar site) is known to be occupied by the Mojave desert tortoise, a state and federally threatened species (USFWS 1990). Here, some tortoises discovered in the impact area will be directly translocated into the nearby Study Area Recipient Site(which also possess existing tortoise populations) and other tortoises will be moved to holding pens before releasing them back into the project area or translocating them to other suitable areas as determined in coordination with USFWS, following the completion of construction. The goal of the translocation plan is to evaluate the effectiveness of developing the site in a way that leaves vegetation and allows for reoccupation by desert tortoises. A portion of the translocated tortoises will be held temporarily in pens and returned to the project area, whereas others will be translocated up to approximately 500 meters adjacent to the project fence and allowed to return on their own. Specifically, those tortoises found greater than approximately 500 meters from the fenceline will primarily be translocated into the nearby Recipient Site on a case-by-case basis if determined appropriate through coordination with USFWS. Those tortoises found in the project interior will primarily be temporarily penned and returned to the project interior following construction (see **Section** 5). In an effort to select recipient sites which meet the criteria of USFWS guidelines (USFWS 2018), as updated in coordination with USFWS, data on the habitat and tortoise densities within the Project area (including preliminary data about the surrounding recipient area) was collected in Spring 2019.

The objectives of this translocation plan are to provide:

1 Estimates of tortoise population density within the Project site and Recipient Sites;
2 Detailed descriptions of pre-clearance, translocation/return, and post-translocation/return monitoring methods;
3 Methods to avoid and minimize stress, disturbance, and injuries to translocated/returned and resident tortoises; and,
4 Strategies for post-translocation/return monitoring and reporting to help maximize survivorship and evaluate the short-term effectiveness of translocation/return.

2.1 Plan Overview

These steps are presented in the chronological order in which they have been or will be conducted and have been compiled from USFWS guidance (USFWS 2019), as updated in coordination with BIA, and USFWS.

Those tasks listed under Sections 3.0 and 4.0 were completed by the Proponent in Spring 2019. The steps outlined in Sections 5.0 and 6.0 are planned to occur prior to and during construction of the project, and for post-translocation monitoring. Data collection and reporting are discussed under each section.

For purposes of this plan, the tortoise active season is defined as April 1 to May 31 and September 1 to October 31. All other times of the year are referred to as the less active season. "Known individuals" refers to any tortoise that will be subsequently identified opportunistically during pre-translocation monitoring within the Project area prior to the start of clearance activities. "Additional individuals" refers to tortoises that may be identified during clearance surveys but were not previously recorded within the Project area. No tortoises are currently transmittered. Adult tortoises are defined as animals ≥180 mm MCL, and juvenile tortoises are animals <180 mm MCL.

The following timeline provides a general description of the sequence of events:

Spring 2019-Fall 2020

- Translocation of tortoise was determined necessary for the development of Project.
- Initial transect surveys were conducted within the project area and portions of proposed Recipient Site (defined as the area immediately outside the project area boundaries plus a 1.5 km buffer) to estimate tortoise densities. During this survey effort, no tortoises were marked or given health assessments. However, these surveys serve as the basis for all density estimates for both the solar site and the Recipient Site.

Spring 2021

- Surveys will be conducted within the project area and receiver site to collect health assessment information about existing tortoise populations.
- Anticipated preparation of first Translocation Review Package (TRP) for first translocation event, which will include proposed disposition (UTMs plus a buffer), health assessment data, enzyme-linked immunosorbent assay (ELISA) results for the pathogens *Mycoplasma agassizii*, and *M. testudineum*, and quantitative polymerase chain-reaction (qPCR) results for *Mycoplasma agassizii*, *M. testudineum*, and testudinid herpesvirus 2., if available. Addenda for unknown adults located during clearance efforts including health assessment data and photographs will be submitted incidentally to BIA and the USFWS's Desert Tortoise Recovery Office (DTRO) for approval.
- Continued monitoring of transmittered tortoises or resurvey prior to translocation.

Fall 2021

- Translocate tortoises.
- Short-term monitoring will begin, following translocation, on a subset of tortoises. (Section 6.1)

Beyond 2021

- Continued monitoring of transmittered tortoises or resurvey prior to translocation.

- Long-term monitoring will begin, following translocation, on a subset of tortoises. (Section 6.1)

3.0 PROJECT AREA, TORTOISE ESTIMATES, AND HEALTH

3.1 Project Area Description

The Project is located southwest of the Town of Moapa, in the Dry Lake Valley, which is within the southern portion of the Basin and Range province characterized by mountains interspersed with north- south trending valleys. Specifically, the Arrow Canyon Range to the west flanks this portion of the Dry Lake Valley and the North Muddy Mountains are to the east.

Mojave creosote bush scrub is the dominant vegetation community in the study area. This vegetation community is common throughout Clark County. This community typically is dominated by creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*) with other associated species. Also, Sahara mustard (*Brassica tournefortii*), a plant species designated by the Nevada Department of Agriculture (NDA) as a Category B weed species, is likely found within the area or nearby. Category B species are defined by NDA as "weeds established in scattered populations in some counties of the state; actively excluded where possible, and actively eradicated from nursery stock dealer premises; control required by the state in areas where populations are not well established or previously unknown to occur."

Vegetation within the proposed Project area previously has been mildly disturbed by various activities including off-highway vehicle recreation, flooding, and existing power line construction.

3.2 Project Area Surveys and Research Effort

To assess the status of the desert tortoise in the proposed project area (see **Section 4.2**), field surveys were conducted. In April 2019, biologists experienced with the biota of southern Nevada and the Mojave Desert conducted pre-project tortoise surveys within the Project area in accordance with the 2019 USFWS protocol (USFWS 2019).

3.3 Solar Site Tortoise Estimates

Data collected within the survey area were analyzed using the USFWS 2019 Protocol equation to estimate the number of tortoises within the Project Area. A total of 225 transects of differing lengths were walked over the course of the survey to achieve 100% coverage of the survey area, totaling approximately 379 kilometers of transect length. Desert tortoise and desert tortoise sign were observed. A total of 3 adult desert tortoises (≥180 mm MCL) and 0 juveniles were observed over the course of the surveys (**Figure 2**). Desert tortoise sign (scat, carcasses/shell fragments, tracks and burrows) were observed throughout the survey area. The estimated number of adult tortoises within the lease study area was calculated to be 5.6, with a 95% confidence interval of 2.25 to 14.09 adult tortoises during the 2019 surveys.

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Eagle Shadow Mountain Substation

15

Legend

Project Components

- Collector Lines
- Existing Access
- New Access
- Lease Area

General Features

- Existing Substation
- Interstate
- Major Highway
- Railroad
- Designated Utility Corridor

Survey Results

- Live Desert Tortoise Observation - Adult

0 0.25 0.5 0.75 1

Miles

North American Datum 1983
State Plane Nevada East Feet

SOUTHERN BIGHORN SOLAR II PROJECT

FIGURE 2
Desert Tortoise Observations

Map Extent: Clark County, Nevada

Date: 09-11-20		Author: rnc

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4.0 RECIPIENT SITES

4.1 Recipient Site Description

The Recipient Site for this project is defined as a 500 m buffer around the fenceline of the proposed solar site (see **Section 5.0**). A 1.5-km buffer around the set of potential release locations is also considered as the area potentially affected by translocation activities. Some areas within the 1.5-km buffer have been excluded due to the presence of barriers to tortoise movement and occupancy (e.g., steep terrain) or other factors (e.g., areas proposed by the tribe for future development). The Recipient Site exhibits similar topographic, hydrologic, and vegetative characters as the solar site. It is largely dominated by creosote bush – white bursage desert scrub. This community is typically dominated by creosote bush shrubs (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*), 0.5-1.5 meters tall, widely spaced, usually with bare ground between. Other common species in this community typically include boxthorn (*Lycium* sp.), hop sage (*Grayia spinosa*), desert trumpet flower (*Eriogonum inflatum*), and Arabian schismus (*Schismus arabicus*). Many species of ephemeral herbs may flower in late March and April if the winter rains are sufficient. This plant community is usually found on well drained secondary soils with very low water-holding capacity on slopes, fans, and valleys. Other, less numerous species of annuals appear following summer thundershowers. This creosote bush scrub is typical of the Mojave Desert.

As described below, tortoises located within approximately 500 meters of the outer boundary, or fenceline, of the solar site would be translocated to the nearest area immediately adjacent to the solar site that is not proposed for development. Tortoises located within the interior of the solar site and greater than approximately 500 meters from the fenceline would be kept in temporary holding pens during construction activities and then either returned to the solar site or translocated to another suitable area determined on a cases-by-case basis through coordination with USFWS, following construction. Tortoises encountered within the utility corridor, along the access road and along the water pipeline during construction would be locally relocated out of harm's way (up to a maximum distance of approximately 300 m).

4.2 Recipient Site Surveys and Assessment Effort

Several portions of the Recipient Site were partially surveyed as part of the desert tortoise survey described in **Section 3.2**. One-hundred-percent coverage surveys were conducted over the entirety of these areas following USFWS protocols (USFWS 2009, 2019).

Health assessments have not been performed on any tortoises within the Recipient Site.

4.3 Recipient Site Density Estimate

Surveys conducted in the portions of the Recipient Site documented 1 adult desert tortoise (and no juveniles) in 2019. Because only a small portion of the Recipient Site was surveyed formal density estimates have not yet been produced. Surveys planned for Spring 2021 would more

comprehensively survey the proposed Recipient Site and provide sufficient data for density estimation.

The maximum recommended post-translocation density within the North Eastern Mojave Recovery Unit (NEMRU) is 6.1 adult tortoises/sq. km (USFWS 2018). The Project is expected to move between 2.25 and 14.09 adult tortoises and an unknown number of juvenile tortoises. However, some portion of these may be returned to the interior of the project site following construction while others would be moved to the nearest suitable site outside the proposed disturbance areas – a distance of less than 500 m. Given the short distance of these translocations, these tortoises would likely be moved a distance within the typical diameter of a tortoise home-range and would, therefore, not contribute substantially to increased densities in the Recipient Site. Furthermore, grading of the solar site would be minimized during construction and existing vegetation would be crushed and/or trimmed where feasible; permanent fencing for the project would be permeable to desert tortoises and many relocated or translocated tortoises are expected to return to the project area following construction. For these reasons, the proposed translocation procedures would largely preserve the existing spatial juxtaposition of tortoises in and around the Project site and Recipient Site.

Finally, the density targets for relocation areas were promulgated, in large part, to reduce the risk of increased disease transmission. Since tortoises would be moved very short distances during this Project, it is unlikely that individuals would experience disease transmission risks to which they are not already exposed.

If the total number of adult tortoises found during clearance surveys exceeds the project's translocation limit, as established by the project's Biological Opinion (BO), then the Proponent would be subject to any additional coordination, surveys, and assessment required as a result of BLM/BIA's re-initiation of Section 7 consultation with USFWS.

4.4 Control Site

The project proposes to use data from ongoing research efforts at the Coyote Springs ACEC as its control, or another control site that would be approved by the USFWS. Coordination with the U.S. Geological Survey, Western Ecological Research Center is ongoing to ensure that the timing and data collection are consistent with that described in **Section 6.2**.

4.5 Reporting Requirements During This Phase (Sections 3.0 and 4.0)

The Proponent shall prepare TRPs for both known and unknown individuals prior to translocation, including a 14-day DTRO review period for known tortoises. Alternate timelines to be discussed with DTRO prior to translocation if weather and/or logistical considerations become a factor. Reporting requirements include:

- Reporting requirements for the BO, as applicable.
- Incidental reporting requirements for any injuries/mortalities.

- Report results of tortoise density estimates and health assessment results to BIA, and USFWS.

5.0 TRANSLOCATION/RELOCATION PROCEDURES

5.1 Overview of Translocation/Return Procedures

This section provides details of the following steps for each translocation event (in chronological order):

A. **Indirect Translocation Group**: If the tortoise is discovered > approximately 500 meters from the project fence line, the individual will be moved to a temporary holding pen, located near the project and held during construction. Because vegetation would be crushed and/or trimmed where feasible during construction these tortoises may be returned to the interior of the completed solar project as close to their original capture site as possible. Penned tortoises may be translocated to a different area on a case-by-case basis as determined in coordination with USFWS. The Proponent and the Band/BIA/BLM will coordinate with DTRO to ensure that release sites do not conflict with prior or subsequent translocations and meet the needs of the long-term monitoring plan. Surveys of the Recipient Site will be conducted and will include health assessments which will contribute to the identification of specific release locations.

Direct translocation Group: If a tortoise is discovered < approximately 500 meters from the project fence line, the Recipient Site will be the nearest suitable location outside the project fence line.

The project will attempt to balance the number of adult tortoises in each group (up to 20 tortoises per group) in order to facilitate long-term monitoring. As such, some individuals discovered < approximately 500 meters from the project fenceline may be moved to temporary holding pens before being directly translocated to the project following construction. Decisions about final disposition of each tortoise will be made in coordination with USFWS.

The project will also monitor up to 20 juvenile tortoises in the project interior (pen-and-return group) and up 20 juvenile tortoises in the over-the-fence group. The project will attempt to balance the samples of juvenile tortoises within each relocation group (up to a minimum sample of 20) using the same procedures described above. If fewer than 40 juvenile tortoises are found between the two groups, the project will augment the groups with captive-reared tortoises obtained from USGS.

B. A Translocation Review Package (TRP; disposition plan) will be submitted for approval that includes all tortoises to be moved from the Project Site (both tortoises to be translocated and tortoises to be penned and potentially returned to the project interior; no TRP will be required for tortoises found along the collector lines as they would simply be moved from harm's way). Results from health assessments conducted prior to translocation will be used to develop the TRP (See Section 5.2), and a final review of the TRP for known

individuals will occur prior to translocation. The TRP will also include dispositions for all unknown individuals, both adults and juveniles, and a final review of the TRP for unknown individuals will occur whenever possible, if timing allows.

C. Passive exclusion of tortoises during project-specific fence construction (See Section 5.3).

D. Health assessments, which include collection of samples via venipuncture and oral swabs, will occur prior to translocation for all tortoises that will be relocated back into the project area or translocated to the Recipient Site (Section 5.4).

E. After health assessments and following approval of the final TRP, move individuals found greater than approximately 500 meters from the fence line into temporary holding pens and translocate known individuals that are located less than approximately 500 meters from the fence line from the project site(s), provided tortoises pass a final check through the translocation suitability algorithm on day of translocation (Section 5.5).

F. Conduct 100% clearance surveys per protocol within the Project site (Section 5.7).

G. Subsequent TRP addenda (including health data and photographs) and translocation of additional individuals including juvenile tortoises, as discovered during project-specific clearance surveys. Subsequent translocation phases of the project would be conducted as per USFWS guidelines (USFWS 2019), as updated in coordination with USFWS, until all known tortoises are removed from the solar site.

Table 1 – Disposition activities for telemetered and un-telemetered individuals found within the Project Site

Status	Initial Location	Weight (g)	MCL (mm)	Class	Mark	Transmitter	1st Health Assessment and Sample Collection[1]	2nd Health Assessment (14 – 30 days prior to translocation)[1]	Final TRP Review	Final Health Assessment (immediately prior to translocation)[1]	Translocate/ Return
Unknown	>500m from fence line	< 100		Hatchling	Yes	No	Yes (No samples)	Yes (if timing allows)	Yes	Yes	Upon detection: Hold in temporary pens, return following construction.
		≥ 100	< 180	Juvenile	Yes	Yes	Yes	Yes (if timing allows)	Yes	Yes	Upon detection: Hold in temporary pens, return following construction.
		≥ 100	≥ 180	Adult[2,3]	Yes	Yes	Yes[2]	Yes (if timing allows)	Yes[3]	Yes	After TRP approval: Hold in temporary pens, return following construction.
	<500m from fence line	< 100		Hatchling	Yes	No	Yes (No samples)	N/A	No	Yes	Upon detection: translocate
		≥ 100	< 180	Juvenile	Yes	Yes	Yes	N/A	Yes	Yes	After TRP approval: Translocate (may use temporary pens if necessary for sample size)

Status	Initial Location	Weight (g)	MCL (mm)	Class	Mark	Transmitter	1st Health Assessment and Sample Collection[1]	2nd Health Assessment (14 – 30 days prior to translocation)[1]	Final TRP Review	Final Health Assessment (immediately prior to translocation)[1]	Translocate/ Return
		≥ 100	≥ 180	Adult[2,3]	Yes	Yes	Yes	No	Yes	Yes	After TRP approval: Translocate (may use temporary pens if necessary for sample size)
Known	>500m from fence line	≥ 100	< 180	Juvenile	Yes	Yes	Yes	Yes	Yes	Yes	Upon detection: Hold in temporary pens, return following construction.
		≥ 100	≥ 180	Adult[2,3]	Yes	Yes	Yes[2]	Yes	Yes[3]	Yes	After TRP approval[4:] Hold in temporary pens, return following construction.
	<500m from fence line	≥ 100	< 180	Juvenile	Yes	Yes	Yes	Yes	Yes	Yes	After TRP approval: Translocate (may use temporary pens if necessary for sample size)

Status	Initial Location	Weight (g)	MCL (mm)	Class	Mark	Transmitter	1st Health Assessment and Sample Collection[1]	2nd Health Assessment (14 – 30 days prior to translocation)[1]	Final TRP Review	Final Health Assessment (immediately prior to translocation)[1]	Translocate/ Return
		≥ 100	≥ 180	Adult[2,3]	Yes	Yes	Yes	Yes	Yes	Yes	After TRP approval: Translocate (may use temporary pens if necessary for sample size)

[1]The 1st, 2nd and final health assessments may occur concurrently; depending on size class and when in the process tortoises are located. Samples are considered valid for 1 year following collection. New samples will be collected if translocation does not occur within 1 year of sample collection

[2]For adult tortoises located during the winter months, venipuncture will occur in the next health assessment season, and agency coordination is needed prior to translocating an adult tortoise during the winter months.

[3]Unknown adults may be translocated prior to receiving ELISA results if the percentage of unknowns compared to the known population is low and acceptable to the DTRO. Coordination with the DTRO is necessary to translocate prior to ELISA results.

5.2 Translocation Review Package and Disposition Plan

The Translocation Review Package and disposition plan for the project will provide an overview of tortoises' demographic information, health and disease status, and proposed disposition location. Each TRP submitted will require approval by the Band, BIA, and DTRO prior to tortoise translocation. Disease results <1-year old can be used in the TRP (disposition plan) for initial planning purposes. Each TRP will include dispositions for all known individuals to be moved in the subsequent season (including tortoises located >500 m from the fenceline that would be penned), nests, eggs, juvenile tortoises, and a number of unknown adult tortoises, and will be submitted for agency review and approval 14 days prior to translocation.

TRPs will be coordinated with the Band, BIA, and USFWS to determine the best disposition planning and will consider the construction schedule to determine the best disposition of tortoises prior to translocation. Criteria identified below will inform and help determine specific locations for translocation. Maps with GIS layers will be the primary tool used to assemble the data and identify translocation localities for each group or individual.

Close coordination with DTRO is needed if less than 2 weeks TRP review time is necessary. Any potential exceptions or deviations to the plan due to weather or other logistics must be discussed with DTRO to determine acceptable translocation timing.

The Proponent, the Band, and BIA will coordinate with DTRO to ensure associated release sites meet the needs of the long-term monitoring plan.

TRP/disposition planning will identify the following information requested in the Draft Translocation Guidance (USFWS 2019) for each adult known individual to be translocated:

- Disposition plan (see Appendix H in USFWS 2019 or more recent) for the project-site tortoises and health summary of resident and control tortoises;
- Complete survey data from the project, recipient, and control sites;
- Photographs of individual tortoises as specified on the health assessment data sheet;
- Health assessment data sheets for resident, control, and project-site tortoises, if not submitted previously;
- Maps of the Recipient Site, showing proposed release points of project-site tortoises;
- Maps of the project site (including all project phases and all relevant digital GIS layers), illustrating distribution and health status of project-site tortoises and proposed release sites of tortoises to be moved < 500 m (if applicable); and
- Any other project-specific information that supports or clarifies translocation decisions.

5.2.1 Social Groups and Spatial Relationships

Tortoises are known to have social hierarchies within populations. Using up-to-date information at the time of each project translocation event, tortoises with nearby home ranges will be presumed to be a cohort and will preferentially be translocated in a manner which seeks to maintain some degree of social connectivity, when consistent with the goals of the USFWS long term monitoring

plan. To the extent feasible, known social groups and spatial relationships will be mimicked in the final disposition plan.

5.2.2 Shelter Site Type and Availability

When determining a release location for an individual tortoise, release site preference will be to find a like-for-like shelter resource. Every attempt will be made to find similar cover sites and habitat to that at the location of each individual on a Project site, otherwise all translocatees shall be released at the most appropriate and available unoccupied shelter sites (e.g., soil burrows, caliche caves, rock caves, in shade at base of shrubs, etc.). Because of the impermanent nature of soil burrows and cave availability, prior to submitting the final disposition planand determining exact areas of release, potential release sites will be re-investigated for existing burrows and caliche or rock caves that can be used for shelter sites. Known active/inactive tortoise burrows discovered during the surveys would be re-investigated for this purpose.

5.2.3 Predator Sign Densities

While some predator sign is expected across any desert landscape, areas where sign is concentrated may indicate a poor choice for tortoise disposition planning. Fresh sign will be noted during ground-truthing for shelter sites, and the disposition planwill include translocation sites preferentially located away from known areas of concentrated predator sign, if any.

5.3 Passive Exclusion during Fence Construction

During the installation of temporary exclusion fencing, an attempt will be made to passively exclude known and/or additional individuals found during fence installation, from the Project site using the guidelines in **Table 2**. The location and boundary delineation of any such project fencing will be coordinated between the Proponent and the agencies.

Table 2 – Passive exclusion methods during fence construction

Side of Fence Line	Season	Methods
Outside	All	Leave animal outside fence and construct fence.
>500m Inside Fence	Less active	Leave individual in burrow on Project until translocation (Section 5.5) in following active season. Translocation or passive exclusion of some individuals may be considered with agency coordination and approval (e.g., if a tortoise makes a long-distance movement near or across the project boundary).
<500m Inside Fence		Leave individual in burrow on Project until translocation (Section 5.5) in following active season. Relocation or passive exclusion of some individuals may be considered with agency coordination and approval.
>500m Inside Fence	Active	Translocate as discussed in Section 5.5
<500m Inside Fence		Attempt to passively exclude by creating and observing temporary gap(s) in fence line as well as temporary exclusion fencing preventing the tortoise from moving into the site interior. If the individual does not passively exit the project site, then translocate immediately outside of fence and monitor as discussed in Section 5.5. Passively excluded tortoises individuals would be marked and would undergo health assessments but no TRP would be prepared.

5.4 Health Assessments and Sample Collection

Health assessments and sample collection will follow the most recent USFWS guidelines (USFWS 2019). At least one full health assessment with sample collection will be performed for all tortoises to be translocated. Samples will be collected via venipuncture and oral swab. In addition to standard enzyme-linked immunosorbent assay (ELISA) testing of plasma, oral swabs will be tested via quantitative polymerase chain reaction (qPCR) for *Mycoplasma agassizii*, *M. testudineum*, and testudinid herpesvirus 2. Samples and their results are valid for one year will be repeated if translocation is delayed.

All known tortoises from the project that had biological samples previously collected, will receive two additional health assessments (includes full physical examination including oral cavity, but no sample collection) spaced 14 – 30 days apart with the second additional assessment occurring within two days of the translocation. Adult (≥ 180 mm MCL) unknown individuals from the project located incidentally or during clearance will be health assessed and translocated on a case-by-case basis in close coordination with DTRO (see Table 1).

Juvenile (< 180 mm MCL) tortoises discovered >500 meters from the project fence line will be given a full health assessment, including sample collection, where size/weight permit, prior to translocation. Any tortoise which does not pass the health algorithm (USFWS 2019, Appendix G)

at the time of translocation (e.g. showing severe injury or severe clinical signs of disease) would not be translocated and their disposition discussed with USFWS (Section 5.6) and the applicable project proponent would begin coordination with the agencies as to that individual's final disposition.

Any biological samples not sent to laboratories for testing will be deposited with the University of California Los Angeles, along with fees to cover sample processing, as per USFWS (2019) guidance.

5.5 Translocation

The first translocation phase of the Project will include known individuals from the Project site. Known tortoises will be translocated from the project site after health assessments and approval of final TRP, provided tortoises in the known cohort pass a final check through the translocation suitability algorithm on the day of translocation (Section 5.4).

Translocation will follow installation of exclusionary tortoise fence, as determined in coordination with the agencies. Translocation events will occur to specific locations outlined in the approved project-specific TRP and disposition plan; The project will employ two strategies for moving tortoises, depending on the initial capture location of each animal.

1 **Short-distance Translocation:** Tortoises found within approximately 500 meters of the solar facility fenceline would be translocated to areas immediately outside of the project's temporary exclusion fencing. Following the completion of construction, the exclusion fencing would be removed; the permanent site fencing would be permeable to desert tortoises and existing vegetation on the project site is expected to be crushed and/or trimmed to the extent feasible to facilitate construction and operation of the project. Therefore, the short-distance translocation strategy is designed to allow tortoises to freely move through, and potentially re-occupy, the site following construction. A portion of the adult tortoises in this group may be moved into the "Indirect Translocation" group (below) to balance sample sizes (up to a minimum sample size of 20). Decisions about the disposition of individual tortoises will be made in coordination with USFWS.

2 **Indirect Translocation or return to project site:** Tortoises found in the interior of the solar facility fenceline (> approximately 500 meters from the exclusion fence) would be moved to temporary pens for the duration of construction and may be returned to the solar facility interior (as close to original capture location as possible) as soon as vegetation/site conditions are suitable for tortoises to be released in the interior of the site. Penned tortoises may be translocated to an alternate suitable location following construction, as determined on a case-by-case basis through coordination with USFWS.

Figure 3 depicts the translocation zones and buffer.

Eagle Shadow Mountain Substation

15

Project Components

- Collector Lines
- Existing Access
- New Access
- Lease Area
- Solar Panel Installation Area
- Laydown Yard

General Features

- Existing Substation
- Interstate
- Major Highway
- Railroad
- Designated Utility Corridor
- Recipient Site - Release Zone
- Recipient Site - Buffer

0 0.25 0.5 0.75 1

Miles

North American Datum 1983
State Plane Nevada East Feet

SOUTHERN BIGHORN SOLAR II PROJECT

FIGURE 3
ACTION AREA

Map Extent: Clark County, Nevada

Date: 09-14-20		Author: rnc

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The density of tortoises within the Recipient Site is variable. Preference will be given to translocating tortoises into areas as close to the initial capture location as possible, in an effort to keep them within their activity area (home range); other release locations may be considered as necessary (e.g. if timing of project development, exclusion fencing, or other reason precludes within-home range translocation). Specific considerations to be included will be based on the construction schedule and will determine the disposition timing of tortoises at time of individual translocation events. Decisions related to performing health assessments, venipuncture and sample collection, transmittering, and translocation, of all individuals are outlined in Table 1.

5.6 Quarantine Facilities

Tortoises may be held *in-* or *ex-situ* (e.g. if temperatures do not allow for translocation, or if tortoises do not pass the health assessment) for a maximum of 12 months (or longer if vegetation conditions do not support the release of tortoises on the project site). Previously constructed and approved enclosure pens are present adjacent to the Project site and would be used if any quarantine is necessary. Quarantine would only be used as necessary (with the exception of those tortoises to be temporarily penned and released directly back into the project area), in coordination with USFWS.

Key elements of caring for penned desert tortoises will include:

- Ensuring each desert tortoise is housed individually to prevent potential disease transmission (juveniles may be housed together as determined on a case-by-case basis in coordination with USFWS).

- To the extent feasible the sites where pens are constructed should have ample vegetation that is minimally disturbed during construction and appropriate soil for tortoises to dig their own burrows. Ideally, each pen would have ample vegetation such as creosote bush, yuccas, ephedra, and bursage to provide shade, and other plants like globe-mallow to serve as food sources.

- In pens where there is not sufficient native vegetation to nourish the animal, some produce (kale, collards, dandelion greens, etc.) may be used to supplement diet. Additionally, Mazuri Tortoise Diet 5M21 may also be considered if appropriate.

- Water would be provided during the active season until the time they enter hibernation.

- Measures would be taken to reduce potential for contamination such as disinfecting footwear after leaving a pen.

More details about caring for penned tortoises are found in current USFWS guidance (USFWS 2018) which would be followed.

5.7 Clearance Surveys

It is expected that the majority of adult tortoises occupying the Project area will be known individuals. Some of these individuals will likely be passively excluded during perimeter fencing activities, and the remainder of the known individuals will be moved during the project translocation event. This section assumes USFWS protocol clearance surveys would be conducted during the more active season (spring or fall). Under specific scenarios, clearance might also be attempted during the less active season during appropriate temperature windows following coordination between the Proponent and the agencies.

Clearance surveys on the Project will be conducted after tortoise exclusion fencing is effectively installed on the site. Clearance surveys will be conducted in accordance with this plan, the Biological Opinion for the Project, and the *Desert Tortoise Field Manual* (USFWS 2009), or most current protocols.

The following conditions will apply:

1. Clearance surveys at the project site must consist of at least 2 consecutive surveys of the site. Surveys shall involve walking transects less than or equal to 5 meters wide under typical conditions. In areas of dense vegetation or when conditions limit the ability of the surveyors to locate desert tortoises, transects should be reduced in width accordingly. Clearance surveys should be conducted when desert tortoises are most active (April through May or September through October) but may be conducted during the less active season if necessary and in coordination with the USFWS. If desert tortoises are found during the second pass, the USFWS may require a third survey. in zones where tortoises were found during the second pass.
2. During the first pass, all sign (scat, carcasses, tracks, etc.) should be removed from the Project area. All burrows are recommended to be inspected and excavated during the first pass, including canid complexes, caliche caves, and tortoise burrows. Larger complexes that take longer/require equipment to excavate (and are not completely excavated on the first pass) are recommended to be fenced with temporary exclusion fencing in the event the burrow/den/complex is occupied by a tortoise.
3. All tortoise scat will be collected or crushed and tracks or mating rings brushed out during each pass of the clearance surveys to facilitate locating tortoises that may have been missed on previous passes. All carcasses will be documented by GPS.
4. Clearance surveys will be scheduled to occur in the best temperature window hours to the extent feasible to maximize the likelihood of finding active tortoises (e.g. when they are likely to be above ground). Guidelines recommend all clearance activities (capture, transport, release, etc.) shall occur when ambient temperatures are below 95 degrees F (35 degrees C) and not anticipated to rise above 95 degrees F (35 degrees C) before handling and processing desert tortoises are completed (USFWS 2009), and translocation guidance recommends releases should occur between April 1 – May 31, and September 1 – October

15. Translocation may be attempted outside the active season if necessary and in coordination with the USFWS. Further guidance states that translocations may occur when temperatures range from 18-30°C (65-85°F) and are not forecasted to exceed 32°C (90°F) within 3 hours of release or 35° (95°F) within 1 week of release. Additionally, forecasted daily low temperatures should not be cooler than 10° C (50°F) for one week post-release. (USFWS 2018). Exceptions to these temperature thresholds may be granted in coordination with USFWS.

5. When an additional (i.e., unknown) adult or juvenile individual is found during clearance surveys, it will be assigned a unique number and marking using paper tags per USFWS (2015), transmitter applied, and given two health assessments prior to translocation (one full health assessment including sample collection prior to translocation plus a health assessment at time of translocation). Tortoises found > approximately 500 m from the project fenceline may be moved to pens upon detection and while health assessments are ongoing. Final TRPs for additional (unknown) individuals will be reviewed by the agencies prior to translocation for these additional individuals, when timing allows.

5.8 Post-Clearance Translocation Procedures

After final clearance is complete, there remains a possibility of finding tortoises within the project site, especially small tortoises <180 mm MCL. For tortoises that are <180 mm MCL and eligible to be translocated upon detection (Table 1), final disposition will be coordinated with USFWS (e.g., penning of other case-specific options may be considered). For tortoises that are ≥ 180 mm MCL, translocation will occur after TRP approval is obtained.

6.0 MONITORING, ADAPTIVE MANAGEMENT, AND REPORTING

All activities related to translocation, compliance, and biological monitoring will be managed and overseen by the Project proponent and conducted in the field by qualified third-party firms providing Authorized Biologists and biological monitors as approved under the Project's BO and associated incidental take statement. Standardized data sheets and/or digital data recorders will be used to record individual tortoise locations, behavior, health indications, burrow locations, etc. during all monitoring activities. Post-translocation monitoring will include a short-term monitoring effort (up to one year) to monitor the translocated tortoises' immediate well-being, and a long-term monitoring program developed in coordination with the Band, USFWS, BLM, and BIA (Section 6.1 and 6.2), outlined prior to translocation. All monitoring would be carried out within the Project area as well as the Recipient Site and a control site. Most monitoring protocols below refer to proportions (or all) of the translocated population – note that as these prescriptions apply to the Recipient Site and control sites, only a subset of tortoises would be used to provide sufficient comparison to the project area.

6.1 Short Term (≤12 month) Monitoring

For the short-term monitoring program, translocated tortoises would be monitored by the Proponent for a period of up to one year after each individual tortoise's first translocation date. Transmitters used for this project may include global positioning system (GPS) technology and/or traditional VHF radio telemetry. The intent is to enable the collection of high-resolution movement data with minimal field effort and animal handling. The goal of this period of more intensive monitoring is to increase survivorship. A total of 20 translocated adult and 20 translocated juvenile tortoises (selected using a stratified random design to include a balanced sex and age distribution) as well as 20 adult and 20 juvenile tortoises returned to the project interior or translocated to another suitable site as determined on a case-by-case basis through consultation with USFWS, will be monitored for one-year post translocation: nominally at the frequency outlined below. If fewer than 20 juvenile tortoises are discovered on the project site, this group may be augmented with captive-reared individuals obtained from USGS. The Proponent will coordinate with BIA, BLM, and USFWS for any monitoring schedule which is reduced from this schedule.

Transmitters will be changed throughout the monitoring period, as necessary due to damage, to maintain battery life, etc. Any transmittered tortoises will be evaluated prior to discontinuing telemetry; individual tortoises may remain in the monitoring program on a case-by-case basis to ensure their well-being (i.e. tortoises consistently found on a fence line, not digging their own burrows, or showing a low body condition score).

At a minimum, all translocated tortoises will be monitored until health assessments are completed during the subsequent active season at the frequency below, as directed by the BIA and USFWS (noting that GPS based tracking, if utilized, would far exceed these tracking frequencies):

- Once within 24 hours of release,
- Once daily for two weeks after release,
- One time per week during active season (as defined by site-specific movement data),
- Once per week during the less active summer season and twice per month during less active winter season,
- The Proponent will coordinate with the agencies to discuss individual translocated tortoises that display behaviors that otherwise endanger their well-being. Actions may include more frequent monitoring of such individual(s) and/or actions to aid survival of the individual(s) tortoise.

One health assessment (with venipuncture and oral swabs) will be conducted post-translocation for all individuals during the first year, between May 15 – October 31 (tortoises released in the spring will be health assessed in the subsequent fall), as per guidelines (USFWS 2019) or by specific approval by USFWS. Any health problems or mortalities observed will be reported to USFWS according to the requirements of the Project BO, which shall also include as full an investigation as possible to determine cause. Fresh carcasses, after a full site investigation, will be

recovered for necropsy as directed by the USFWS. Animals showing severe clinical signs of disease at any time will be reported by the respective proponent to the agencies for coordination of disposition.

Following health assessments during the first active season after translocation, up to 20 short-distance translocated tortoises and up to 20 resident tortoises in the Recipient Site (each cohort selected using a stratified random design to include a balanced sex and age distribution) will be monitored until the following active season: nominally at the frequency outlined below.

- One time per week during active season (as defined by site-specific movement data),
- Once per week during the less active summer season and twice per month during less active winter season,
- The Proponent will coordinate with the agencies to discuss individual translocated tortoises that display behaviors that otherwise endanger their well-being. Actions may include more frequent monitoring of such individual(s) and/or actions to aid survival of the individual(s) tortoise.
- The Proponent will coordinate with BIA and USFWS for any monitoring schedule which is reduced from this schedule.

6.2 Long Term Monitoring

Long-term monitoring would consist of two primary goals: 1) additional direct tracking of individual movements to assess re-occupation of the project area as well as environmental covariates potentially influencing tortoise movements; 2) assessment of evidence of reproduction on the site.

6.2.1 Direct Tracking

Direct tracking would continue for five years following initial translocation to determine space-use patterns of translocated desert tortoises. In the project area, this tracking program would include: 1) adult and juvenile tortoises (with a target sample size of 20) that were held in pens and directly relocated to the project site; and 2) up to 20 of the tortoises translocated a short distance. In the Recipient Site and the control area a sufficient subset of available tortoises would be tracked for comparison to the project site (with a target sample size of 20 in each group).

This direct tracking would estimate the proportion of sampled tortoises that re-occupy the Project area in the short term, behavioral correlates of any such re-occupation (e.g., time to re-occupancy, home-ranging behaviors, etc.) and whether the release location influences the ultimate re-occupation or the dynamics of such re-occupation. Tortoises that have ceased to make substantial movements may be removed from the direct tracking program early. Annual reports would be prepared for this portion of the long-term monitoring and would be submitted to the Band, BIA and USFWS.

The Proponent would also collect environmental covariates of movement during years 1 and 2 (and any contingency years added as part of adaptive management) that will be used to assess the vegetative recovery of the project area and how such recovery influences the movement ecology of tortoises (variables measured will be coordinated with USFWS to maximize comparability of results across neighboring projects to the maximum extent practicable). A random or systematic sample of vegetative monitoring plots will be established within the project area. At each plot, biologists will assess: species composition (including the relative abundance of non-native species); structural metrics (e.g., shrub height, aerial cover of shrubs, herbs, grasses,); evidence of past or ongoing disturbance; and, shrub growth (using, e.g., stem elongation). Vegetative metrics that potentially relate to tortoise movement behaviors will be extrapolated to the larger environment using kriging and included as covariates in tortoise movement models (e.g., integrated step-selection analysis) to assess the degree to which these factors influence tortoise behavior.

6.2.2 Health Assessments and Ultrasound/X-ray

Health assessments of translocated tortoises would be performed in years 1, 2 and 5 following the completion of construction. These health assessments would be performed only on those tortoises enrolled in the tracking program in **Section 6.2.1**. Health assessment protocols will follow USFWS guidance (USFWS 2019). Any samples not used for tests would be archived, along with appropriate fees, with UCLA. In addition to standard health assessment protocols, x-ray will be used to search for gravid females to be used as evidence of reproduction. Additional health assessments may be required under certain circumstances (**Section 6.3**)

6.3 Adaptive Management

The Proponent will maintain ongoing coordination with the agencies throughout these efforts. Adaptive management strategies will be identified between the Proponent, their field staff, the Band, BIA, and USFWS.

If there are valid concerns *in the field regarding immediate threat to one or more tortoises*, field staff will make adaptive management decisions in the best interest of the tortoise through 1) coordination in the field; 2) phone calls to agency personnel and the Proponent designated representative made within 24 hours to describe the actions taken and results of the actions; and, 3) a brief email report from field staff that describes the adaptive management actions taken and reasons for and results of these actions.

If there are valid concerns *in the field that do not pose an immediate threat to one or more tortoises*, Proponent's field staff and designated Proponent management representative will notify the Band, BIA, BLM, and USFWS of proposed adaptive management decisions via e-mail and field personnel will wait up to one week for concurrence or additional direction and response from agency personnel before actions are taken.

Additional tracking may be required if tortoises have not shown movements consistent with the establishment of home ranges. In such cases, direct tracking may be extended into years 3-5 for a subset of tortoises, as appropriate. Additional health assessments and ultrasound/x-ray may be required during years 3, 6, and/or 7 following construction if unanticipated circumstances arise (e.g., a spike in disease prevalence, complete lack of evidence of reproductive activity, etc.). Finally, an additional mark-recapture survey may be required in year 7 following construction if demographic models show low juvenile recruitment, project-specific population declines, or other concerns. No monitoring will be required to extend past 7 years following construction. All decisions to implement additional monitoring will be made collaboratively between the Proponent, USFWS, BIA, and the Tribe.

6.4 Reporting

Documentation of all activities will be compiled and data synthesized throughout the duration of translocation and monitoring. Data sheets used in the field will be developed in coordination with USFWS. Findings, data, and recommendations will be submitted by the Proponent to the USFWS and appropriate wildlife and/or permitting agencies as required in the project BO. Minimum data requirements will conform to the current translocation health assessment guidance. A quarterly report (via email) summarizing all activities (including a summary of handling, clearance, and translocation events, health and disease results, recommendations for improved management strategies; and post-release tracking vectors and associated data in the in digital format using UTM coordinates and WGS 84 datum for all spatial components) shall be provided to the BIA and USFWS during the short term (up to 12 month) monitoring effort. All injuries and mortalities discovered during monitoring will be reported to the Southern Nevada Fish and Wildlife Office and BIA by telephone (702-515-5230) or email, within 24 hours. The report must include the tortoise ID, date, time, location of the carcass (UTMs), a photograph, cause of death, if known, and any other pertinent information (e.g., sex, size, date and UTMs of last known live location). All activities will be recorded on standardized data sheets and/or on digital data recorders.

Following the completion of the long-term post-translocation monitoring period, a final report will be completed that will assess the overall success of the translocation and monitoring program. The final report will summarize the short-term post-translocation monitoring activities, and other compliance-related reporting as specified in the BO, and will discuss any observed differences in individual behaviors; overall tracking of health assessments for each individual; and any adaptive management employed throughout the one-year monitoring period with an assessment of the success of each adaptive management strategy. Reporting timelines and report content will be coordinated with USFWS guidance to ensure appropriate content is included per permit requirements.

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