



NEVADA
**STATE HISTORIC
PRESERVATION OFFICE**

STATE OF NEVADA
Department of Conservation and Natural Resources

Steve Sisolak, *Governor*
Bradley Crowell, *Director*
Rebecca L. Palmer, *Administrator, SHPO*

June 18, 2021

Mr. Jon K. Raby
State Director
United States Department of the Interior
Bureau of Land Management
Nevada State Office
1340 Financial Boulevard
Reno, Nevada 89502-7147

RE: Greenlink West Transmission Line Project (Project) Right-of-Way (ROW) application;
SHPO UT # 2021-6755; 28227

Dear Mr. Raby:

The Nevada State Historic Preservation Office (SHPO) has reviewed the subject documents received May 20, 2021 in accordance with Section 106 of the National Historic Preservation Act (NRHA) of 1966, as amended.

The SHPO understands that the Bureau of Land Management (BLM), Nevada State Office (BLM-NSO) is submitting the documents following the procedures outlined in 36 CFR Part 800 as applicable under Section V.H of the *State Protocol Agreement between the Bureau of Land Management, Nevada and the Nevada State Historic Preservation Officer for Implementing the National Historic Preservation Act, 2014* (Protocol).

The BLM-NSO has provided documentation and notification to the SHPO that Section 106 compliance will occur concurrently with the National Environmental Protection Act (NEPA) process. The BLM-NSO has determined that an Environmental Impact Statement (EIS) is the appropriate level of NEPA review for the Greenlink West Transmission Line Project (Project).

At this time, the BLM-NSO is formally requesting information regarding the BLM-NSO's initial determinations of Direct and Visual APE boundaries, as well as the proposed level of effort to identify historic properties within the APEs. The BLM-NSO confirmed via a phone conversation with SHPO staff on June 9, 2021 that the BLM-NSO is requesting the SHPO's review and comment regarding the APE for this undertaking.

Project Description

The federal agency letter states that the Project will include approximately 469 miles of new transmission lines and associated facilities constructed from Reno to Las Vegas. Approximately eighty-two percent of the land will cross land managed by the Carson City, Battle Mountain, and Southern Nevada District Offices. The Project will also cross lands managed by the Department of Defense, the Bureau of Indian Affairs (Las Vegas Paiute Tribe reservation and Walker River Paiute Tribe reservation), and privately owned lands. No construction or design details about the transmission line or its features have been included in the agency letter.

Area of Potential Effects (APE)

Direct Physical APE:

The BLM-NSO has defined the direct physical APE as the preferred transmission line ROW (600 ft wide; 33,951 acres), new microwave and amplifier sites (10 @ 0.75 acres; 7.5 acres), distribution line ROWs (40 ft wide; 151 acres), road improvements (25 ft wide; 1336 acres), and new roads (25 ft wide; 83 acres) plus a 30-meter buffer around the proposed disturbance for a total of 54,806 acres.

Beyond this statement, the BLM-NSO does not include any necessary information about the Project that consulting parties and the public might need to evaluate the federal agency's determination concerning the possible effect of the undertaking. Information such as, but not limited to, whether the transmission line will run continuously above ground the entire distance, a description of the type(s) of transmission line and pole(s) that has been selected for this Project and design information about the new microwave and amplifier sites, the distribution lines, or the existing or proposed new roads. It is also unclear if any other ancillary structures or new substations will be constructed or existing substations will be modified for this undertaking.

Visual APE:

For defining the Visual APE for the current Project, the BLM-NSO has applied the BLM's Instruction Memorandum (IM) No. NV-2021-006 which utilizes the BLM report *Defining a Visual Area of Potential Effects to Historic Properties on BLM Lands in Nevada* (Prepared By: Nicolas Pay, Bryan Hockett, and Tanner Whetstone September 23, 2020).

The SHPO notes that the September 23, 2020 document was not prepared in consultation with the SHPO nor were our comments on the draft incorporated. Therefore, we do not support its use without adequate documentation so that all consulting parties can readily understand the visual effects of an undertaking. Our office reserves the right to ask questions about this document as well as the adequacy of the APE.

To provide background on the consultation efforts between the BLM-NSO and the SHPO, please see the enclosed emails and the SHPO's letter. The BLM-NSO invited the SHPO to review a draft report in the fall 2018 (see Attachment A). The SHPO formally responded with comments in our February 1, 2019 letter which included a table of the SHPO's suggested APE distances based on the published findings of several Argonne Laboratory studies that were presented in the BLM-NSO's draft dated August 24, 2018 (see Attachment B). In general, the SHPO supported the proposal to incorporate suggested minimum distances for the establishment of an APE for certain undertakings that have a potential for visual effects. The SHPO noted, however, that further discussion would need to occur between the SHPO and the BLM-NSO. The BLM-NSO responded on both February 4 and February 8 of 2019 that they would be back in touch after reviewing the SHPO's letter and incorporating additional peer-review comments that they had requested from other federal agencies (See Attachments C and D).

Despite the above statements, no consultation between the BLM-NSO and the SHPO have taken place since February 2019. Instead, the BLM-NSO emailed the new IM and the September 23, 2020 report to the SHPO, the Advisory Council on Historic Preservation, and the National Park Service National Trails Office on November 2, 2020 with a statement that this new BLM Nevada Policy was finalized (See Attachment E).

Per the SHPO's above-mentioned conversation with the BLM-NSO on June 9, 2021, the BLM-NSO stated that although this is a policy document, it is not prescriptive. The BLM-NSO stated that future negotiation on this document could occur with the SHPO but requested to know at this time what the SHPO's concerns are with these documents.

As requested by the BLM-NSO, we are providing some of our concerns regarding the IM and the September 23, 2020 report below. We offer these comments in the spirit of cooperation and with the intent of assisting the agency to ensure that all consulting parties can understand the decisions based on the document. Please note, the SHPO believes this document could be, with additional edits and consultation, an essential tool for the federal agency to establish an adequate area of potential effect (APE) that incorporates all the visual effects of an undertaking.

1. The IM states that the final template Visual APE recommendations are based on the following three items: 1) previous research sponsored by Argonne National Laboratory, 2) BLM's own in-field research on previously constructed facilities in southern Nevada, and on 3) the mathematical principle known as the intercept theorem, or basic proportionality theorem (BPT).

The SHPO discusses item 1 below in the next section.

Regarding item 2, the SHPO notes that the photographs (figures 3-43) in the report are not keyed to any maps or aerial photos for the cold reader, and the photos are not annotated to explain what exactly the viewer is looking at in the landscape. In addition, other than the name and location of the facility, there is no written description or site plan illustrating the existing built-facilities in southern Nevada today (e.g. design (one transmission line, multiple transmission lines etc.), height, massing, ancillary structures, lighting etc.) The SHPO also asks if the public and consulting parties would understand the summary data presented in Figures 1 and 2.

Regarding item 3, the SHPO asks how the public and consulting parties are to interpret and understand the BPT mathematical methodology. Will equations be explained step-by-step and clearly illustrated for every undertaking's administrative record? Or will equations and explanations be inserted into the September 23, 2020 report for every recommended visual APE distance?

As public documents, the information contained in the IM and September 23, 2020 report needs to be accessible and understood by the public. Had the SHPO been afforded an opportunity to continue negotiations on this document, we would have recommended that

the federal agency prepare an accessible companion document that would be simplified for public consumption and that could be provided to all consulting parties via a link to the BLM website.

2. The BLM concluded that several visual effects studies conducted by Argonne National Laboratory (Argonne) support the BLM's decision to limit an initial APE to the area where the undertaking would strongly attract visual attention. The BLM's September 23, 2020 report states that "BLM Nevada's goal is to define a Section 106-relatable rating scale and correlate distances that do not simply 'catch the eye' of a casual observer. BLM Nevada's position is that simply "catching the eye" of a casual observer should not be used to define reasonable V-APE boundaries nor assume an adverse effect under the NHPA... Distances that correlate with Visibility Level 3 will generally not cause adverse effects and would there constitute an unreasonably large V-APE" The BLM continues with the following statement "Argonne's Visibility Levels 5 or 6, on the other hand, are those that dominate the viewshed, and therefore distances associated with these ratings are most likely to cause adverse effects under the NHPA". Based on this, the BLM has stated that their proposed visual APEs correlate with Argonne's Visibility Rating Level 5/6.

Our review of the Argonne studies does not appear to support the federal agency's conclusions. In fact, the researchers recommended starting with a more reasonable distance where the project would be noticeable to casual observers as the baseline (see attached abstract [emphasis added by SHPO staff] in Attachment F). The SHPO's February 1, 2019 letter noted that this correlates to Argonne's Visibility Rating Level 3 which is defined by Argonne as "visible after brief glance in general direction of study subject and unlikely to be missed by casual observer".

It should be noted that the SHPO was able to find numerous similar studies and policy documents (e.g., *Guide to Evaluating Visual Impact Assessments for Renewable Energy Projects* Natural Resource Report NPS/ARD/NRR—2014/836) where a similar "noticeable to the casual observer" standard was used as the baseline for establishing a reasonable distance for visual effects. Additionally, it should be noted that BLM state-level protocols from other states (e.g., Wyoming Appendix C *Guidance on The Assessment of Setting*) also employ a similar standard when evaluating visual effects to historic properties with aspects of integrity that could be affected by an undertaking. The Wyoming BLM Protocol requires an assessment of visual effects using the BLM's Visual Contrast Rating (VCR) system (as defined in BLM Manual 8431) to the setting of historic properties "when the undertaking will potentially be seen from the historic property" (Appendix C, page 1 of 6). The Wyoming BLM applies all four established contrast ratings: 1. "No Contrast" (project elements will not be seen) 2. "Weak Contrast" (elements will not attract the attention of the casual observer) 3. "Moderate Contrast" (begins to attract attention and begins to dominate the landscape) 4. "Strong Contrast" (cannot be overlooked and are dominant on the landscape).

The SHPO has previously requested examples of studies from the federal agency and the ACHP that support the establishment of a baseline for visual effects at the “dominate the viewshed” standard implemented by the Bureau of Land Management in the IM. To date, we have not received any study supporting this baseline.

While we support the recommendations made by the Argonne researchers that it is reasonable to begin a visual effects analysis at the Visibility Rating 3 level, it should be noted that a visual effects APE set at this distance would not necessarily translate into a need for the federal agency to conduct any additional field identification. With the exception of properties with traditional religious and cultural significance to Tribes, it is the opinion of SHPO’s architectural historians with experience in evaluating visual effects of undertakings that historic properties with aspects of integrity that could be affected by visual intrusions from an undertaking should be readily identifiable in a brief search of historic maps and aerial photos. If resources are identified through this brief desktop effort, field verification and recordation would subsequently follow. The SHPO has previously agreed during the CRINA review process with this approach for identification efforts for above ground resources in the indirect APE for numerous Nevada BLM undertakings reviewed under the Protocol. Taking this broad approach for identification would not be inconsistent with the Section 106 regulations because this action is not connected to initially defining the APE.

3. The distances proposed in the IM are NTE or "Not-To-Exceed" distances. The distances are not standardized recommendations for establishing a minimum distance area where visual effects might occur. By creating these NTEs, the BLM appears to be actively discouraging a consideration of a broader APE, prior to any consultation with consulting parties.

Beginning January 2021, the SHPO has received several BLM infrastructure projects for review and comment of the APE that utilize the IM. In some cases, the proposed APEs are much narrower than the NTE distances. No additional justification has been provided in these cases to explain how the decision was made to further reduce the NTE distances.

The SHPO notes that the Advisory Council on Historic Preservation’s March 5, 2021 letter regarding the IM and September 23, 2020 report stated that unique physical or environmental conditions within the vicinity of a given undertaking may prompt an expansion or reduction of the distances.

4. The IM employs a process that appears to take the Section 106 process out of order, thereby narrowing an APE prior to identification. Although somewhat limited in the IM, the BLM has begun to refer to the APE for infrastructure in the landscape as “Areas of Potential Adverse Effects.” By narrowing the APE to those areas where the BLM believes adverse effects will occur (without identification, no consultation with consulting parties, or any known historic properties) and inserting unsubstantiated statements (such as that found in the September 23, 2020 document, no page number, [emphasis added by SHPO staff] in

Attachment G) that assume an element visible from an historic property will not adversely affect the aspects of integrity it might possess without a clear understanding of the eligibility and integrity of the resource, the BLM is narrowing the area of potential effects and taking the process out of order by inserting a finding of effect (for unknown properties with unknown aspects of integrity) prior to the identification stage. The BLM's methodology has the potential to create an APE that inadequately characterizes the effects of the undertaking. As a result, subsequent identification efforts might fail to adequately identify historic properties sensitive to visual effects (e.g. National Historic Trails and properties of religious and cultural significance to Tribes). The agency may not know at the onset of establishing an APE about historic properties' ability to convey significance and whether setting is a contributing aspect of integrity.

The SHPO does not agree that the APE should be defined based on whether historic properties will be adversely affected by an undertaking. The APE should be developed according to the nature and extent of all potential effects on historic properties, including physical, visual, auditory, atmospheric, and cumulative effects. Pursuant to the Section 106 regulations, an APE is defined first, followed by the identification and evaluation of historic properties, and afterwards a finding of effect.

To suggest that this is unreasonable is not consistent with other BLM state offices. The Wyoming BLM Protocol Appendix C considers all potential effects on historic properties which are determined after application of Standard Treatment Measure s/ Best Management Practices by using the BLM's Visual Contrast Ratings (VCR) system. As mentioned previously in this letter, the Wyoming BLM applies all four established contrast ratings to Section 106 projects and their findings of effects, ranging from "No Contrast" (proposed project elements will not be seen equates to a No Historic Properties Affected finding) to "Weak Contrast" (project elements can be seen but will not dominate the setting or attract the attention of the casual observer equates to a No Adverse Effect finding) to "Strong Contrast" (elements tend to dominant the setting equates to an Adverse Effect finding).

The SHPO notes that when our office asked the BLM-NSO about the Wyoming BLM Protocol Appendix C's approach, they indicated they would look into this, but did not follow up on this with the SHPO (see enclosed August 29, 2018 email).

The ACHP's March 5, 2021 letter stated that 36 CFR § 800.4(c)(1) acknowledges that Indian tribes "...possess special expertise in assessing the eligibility of historic properties that may possess religious and cultural significance to them," which reasonably extends to what aspects of historic integrity effects may be diminished by a subject undertaking, resulting in adverse effects. Federal agencies and agency officials do not possess this special expertise, and therefore may not be qualified to automatically exclude properties of cultural and religious importance of Indian tribes from the Section 106 consultation process, even if they fall outside of the standard visual APE. As recommended previously,

the ACHP encourages the BLM to consider such variances on a case-by-case basis through a consultative process.

While the ACHP appears to be focused on tribal consultation, the SHPO notes that this statement could also be applicable to all historic properties during consultation with the public and consulting parties.

5. The IM does not provide guidance on what is adequate documentation needed to provide to consulting parties to support the agency's initial discussion of visual effects. The SHPO is receiving submissions that do not contain adequate maps, photos, visual assessments, or visual simulations.
6. It would be helpful if all peer review comments would be shared with all parties mentioned on the acknowledgements page of the September 23, 2020 report. As the federal agency submitted this document to our office for review but did not include our comments and edits, we recommend that the SHPO be removed from the acknowledgements page. We wish to avoid confusing any member of the public who can find, read, and understand the document as to the nature of our contribution to the development of the current document.

To support the BLM-NSO's agreement that future negotiations on the IM and the September 23, 2020 report should occur, the SHPO has reached out to Nate Thomas, BLM's Acting Federal Preservation Officer and Bill Marzella of the ACHP to facilitate a discussion of the IM and the September 23, 2020 report. We look forward to negotiating a document that will serve to streamline the process of APE identification and review on the part of all consulting parties.

For the current undertaking, the BLM-NSO has defined the Visual Effects APE as a 3-mile buffer of the preferred transmission line route, for a total 6-mile-wide corridor (1,625,347 acres). The BLM-NSO states that the "Visual Effects APE boundary is based on the proposed Project description, local terrain characteristics, and past field research and mathematical principles detailed in Pay et al. (2020), "Defining a Visual Area of Potential Effects to Historic Properties on BLM Lands in Nevada.""

Beyond this single sentence containing a brief reference to Project description, terrain, and mathematical principles, the submission does not include any other information and does not adequately justify the decision made.

While the BLM-NSO's methodology may assist the agency to reach a sound visual effects APE for this undertaking, providing only a brief notation of the methodology used with no supporting narrative or visual documentation is not an adequately justified submission that consultation parties and the public are able to understand.

Therefore, the SHPO requires the following information from the BLM-NSO to aid in our understanding of the APE for this proposed undertaking:

1. The SHPO notes that the maps provided do not adequately or legibly display the APE in relation to the surrounding topographic and built environment. Please submit 1:24 k scale – 7.5' USGS topographic maps that display the APE. The SHPO anticipates that several maps will need to be generated to sufficiently display the entire APE.
2. Regarding the BLM-NSO's statement that the visual APE has been developed based on the Project description, the submitted documents do not describe the Project nor state if the transmission line will be below or above ground the length of the transmission line. Additionally, the submitted maps do not legibly display the location of the proposed transmission line, the proposed access roads, the proposed equipment layout, or proposed ancillary facilities such as substations. Please submit this information for the SHPO's review.
3. Regarding the BLM-NSO's statement that the visual APE has been developed based on the local terrain characteristics, please explain and illustrate how topography may affect this Project and the visual APE.
4. To aid the SHPO and the public in understanding the extent of the visual APE, please provide our office with photographs (keyed to a map) that are taken at various distances and different perspectives from the proposed Project. If the proposed Project will be visible from greater viewpoints, the SHPO recommends enlarging the visual APE to account for any potential visual effects the proposed Project may introduce. Additionally, the BLM-NSO may provide maps that display a GIS viewshed analysis with aerial imagery to enhance the SHPO and public understanding of the visual APE.
5. If a NEPA Visual Resource Assessment will be prepared, the SHPO requests that this information be forwarded to our office to support and justify the APE. It is our understanding that KOPs, existing conditions photos, and visual simulations of proposed installations are typically included in such assessments, so the public has a clear understanding of the topography and unique conditions of a proposed Project site. If this documentation will not be prepared for this undertaking, please let the SHPO know.
6. The SHPO notes that the BLM-NSO does not discuss potential auditory, atmospheric, or cumulative effects that the proposed Project may introduce.

Without photographs and adequate maps justifying and supporting the BLM-NSO's determination for potential visual effects, the SHPO is unable to evaluate if the visual APE will adequately account for all the potential effects that may result from this undertaking in keeping with 36 CFR § 800.4(a)(1) and 36 CFR § 800.16(d) and is reasonably broad enough to capture the full geographic extent of the undertaking's potential effects. The SHPO notes that the BLM-NSO also needs to provide discussion and justification regarding auditory, atmospheric, and cumulative effects for this undertaking.

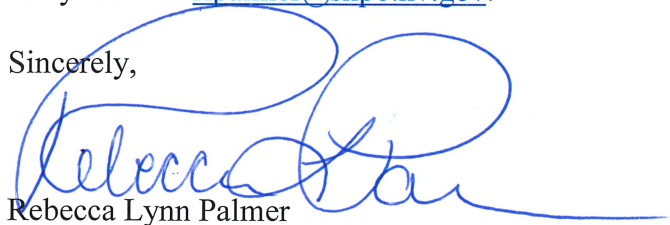
Mr. Jon K. Raby
June 18, 2021
Page 9 of 9

Regarding visual effects, the BLM-NSO states that cultural resources within the visual effects APE that have the potential to be adversely affected will be subject to further analysis such as visual simulations to determine the precise nature of those effects. The SHPO notes that the APE should be established for all potential effects on historic properties prior to identification and evaluation efforts and making a finding of effect.

As Section 106 is a process law, the SHPO's review of this undertaking has stopped pending receipt of the required information requested above.

If you have any questions concerning this correspondence, please contact me at (775-684-3443) or by email at rlpalmer@shpo.nv.gov.

Sincerely,



Rebecca Lynn Palmer
State Historic Preservation Officer

cc. Reid Nelson, Advisory Council on Historic Preservation
Bill Marzella, Advisory Council on Historic Preservation

enc. Attachments A-G

SHPO letter to Mr. Jon K. Raby
June 18, 2021

Attachment A

Robin Reed

From: Pay, Nicholas <npay@blm.gov>
Sent: Tuesday, September 4, 2018 4:21 PM
To: Rebecca Palmer
Cc: Bryan Hockett; Robin Reed; Kristen Brown; Ashley Wiley; Jessica Axsom
Subject: Re: [EXTERNAL] RE: Indirect Effects Analysis
Attachments: image002.png; BLM_NV_2018_Indirect_Effects_Analysis_Report_2018-08-24.pdf

Rebecca,

Yes, I can be available for that discussion.

I would like to note that the first intent of the report is document the methodology, intent and results of this project. If this discussion is going to be as productive as possible, it would be very helpful if you and any of your staff participating in the discussion would read the report beforehand. One of my primary goals in reaching out to you and your staff, was to have some readers who haven't been working on this document with me review it and see if there are any holes that need filled. I have been so involved in this project for awhile now that I may just be reading my thoughts and not the actual words on the page.

With this in mind, I propose that we meet on September 21 from 1-4 for a short presentation on this project, our intent here at NSO and a discussion on the future of the use of the document. This would give you and your staff two and half weeks to read the document. It would also be good to get some of your high level review comments on things that should be discussed in more detail. If anyone has specific questions that come up as you read through the report I would welcome getting those prior to the presentation and I can make sure to answer them during that time!

As far as the implementation of the intent that we have here at NSO, that is open for discussion. There are a number of potential possibilities that each have pros and cons associated with them.

Thanks, I am looking forward to the feedback from your office.

NICHOLAS PAY | *ARCHAEOLOGIST*

NEVADA STATE OFFICE | RENO NV 89502 | 775.861-6470 (W)

BLM Nevada Cultural Resources Webpage

Absence of Evidence does not equal Evidence of Absence

On Tue, Sep 4, 2018 at 10:35 AM Rebecca Palmer <rlpalmer@shpo.nv.gov> wrote:

Nick,

The best approach for initiating our review of the Bureau of Land Management's proposal would be a presentation to my staff and a discussion about the intent of the document. Would you be available to present your findings to my staff in the next few weeks? In looking at the calendar, I see that the following dates appear to be available to staff, would you be available to present your methodology, intent, and implementation strategy here in Carson City:

September 18, in the afternoon

September 21, in the afternoon

September 25 between 9:30-4:00pm

September 28 between 9:30-4:00pm

I look forward to hearing from you.

Best Regards,

Rebecca Lynn Palmer

State Historic Preservation Officer

901 South Stewart Street, Suite 5004

Carson City NV 89701

(phone) 775.684.3443



From: Pay, Nicholas [mailto:npay@blm.gov]
Sent: Wednesday, August 29, 2018 12:05 PM
To: Rebecca Palmer
Cc: Bryan Hockett
Subject: Re: [EXTERNAL] RE: Indirect Effects Analysis

Rebecca,

After some discussion with Bryan, we are willing to take a reasonable amount of time to do what needs to be done to finalize this document. I would still like to get review comments by the end of September or mid-October. If it takes us longer to work through some issues to address comments that we receive in order to finalize the document then that's fine.

I have seen the Wyoming Protocol attachment that you suggested but I will look into it again and see if there is anything that stands out to me. If you have specific ideas of what should be incorporated please include those in your comments on the document. I have also spent a fair amount of time looking through other analysis that have occurred in the past few years to see what kinds of impacts have occurred or were anticipated. I did not cite all of those because it was more of just a basic review of the documents to see what the APE was set at. My goal while this draft is in its review stage is to look at some of those analyses documents a little closer and see what, if any, adverse effects, were identified.

We are attempting to get this report, its assumptions and the conclusions made in it reviewed as broadly as possible. One of those reviews is leveraging our partnership with your office by providing your staff with the opportunity to comment on this draft report.

As far as the processes that we have used to get to this point, we followed the documentation standards found in 36 CFR § 800. We have included all of the information necessary to help the reader track our thought processes for this project.

If your office disagrees with any assumptions or the findings of this report, please make note of those during your review, and provide your written comments to me. I am looking forward to having more discussions on this topic.

I would echo your comment that this effort on the front end will help us get to a much better place!

NICHOLAS PAY | *ARCHAEOLOGIST*

NEVADA STATE OFFICE | RENO NV 89502 | 775.861-6470 (W)

[BLM Nevada Cultural Resources Webpage](#)

Absence of Evidence does not equal Evidence of Absence

On Tue, Aug 28, 2018 at 11:59 AM Rebecca Palmer <rlpalmer@shpo.nv.gov> wrote:

Nick,

We have received your document and have a couple of questions that will help us to understand the Bureau of Land Management's creation and implementation process.

How did the Bureau of Land Management ensure that qualified professionals from all appropriate disciplines (architectural history, historical landscape architecture, and archaeology) assisted in the creation and/or review of this document since it is likely that Bureau of Land Management will want to employ its recommendations for undertakings in Nevada?

While we want to assist in this effort to create a document useful for understanding and creating an APE that takes into account effects to the broadest range of resources currently known, my architectural historians do not have sufficient time to conduct the necessary field evaluations of the statements in the document for architectural resources and landscape architectural resources that must occur in the time to meet the deadline laid out for finalization.

Did the Bureau of Land Management hire an architectural historian or landscape architect or is this planned during review of the document?

In recent years, it has been our experience that visual effects have been most frequently assessed for architectural and landscape architectural resources, and much less frequently for archaeological resources, so it is reasonable that the Bureau of Land Management would want to ensure that the creation and review of the document employed an appropriate balance between all three disciplines. This effort on the front end would go a long way to making this document as robust as possible for specific undertakings and to create a document that ensures the BLM addresses visual effects to the broadest range of resources possible. I do not know if the document attached to the Wyoming Protocol (appendix C) addressing effects to setting employed that approach or not, but it might be worth inquiring.

Best Regards,

Rebecca Lynn Palmer

State Historic Preservation Officer

901 South Stewart Street, Suite 5004

Carson City NV 89701

(phone) 775.684.3443

From: Pay, Nicholas [mailto:npay@blm.gov]
Sent: Monday, August 27, 2018 12:21 PM
To: Rebecca Palmer
Cc: Bryan Hockett
Subject: Indirect Effects Analysis

Rebecca and Bryan,

I just wanted to take this opportunity to provide you with my most recent draft of *Defining Areas of Potential Effect: Indirect Visual Effects to Historic Properties.*

I am providing this two you both because I know that there are discussions going on regarding the inclusion of recommendations for indirect effects APEs in the State Protocol Agreement. Keep in mind that this is still a draft report so I would welcome any discussion on it. This has been a fun project to work on and I look forward to finalizing it. My plan is to have it finalized and ready for inclusion in the BLM Nevada's Technical Report Series before the end of September.

I have attached a copy of the actual report to this e-mail however the supporting files that go with it are larger than I can email. Rebecca, what would be the easiest way to send you these supporting files?

NICHOLAS PAY | *ARCHAEOLOGIST*

NEVADA STATE OFFICE | RENO NV 89502 | 775.861-6470 (W)

[BLM Nevada Cultural Resources Webpage](#)

SHPO letter to Mr. Jon K. Raby
June 18, 2021

Attachment B



NEVADA

**STATE HISTORIC
PRESERVATION OFFICE**

Department of Conservation and Natural Resources

Steve Sisolak, Governor
Bradley Crowell, Director
Rebecca L. Palmer, Administrator, SHPO

February 1, 2019

Dr. Bryan Hockett
Deputy Preservation Officer
Bureau of Land Management
Nevada State Office
1340 Financial Blvd.
Reno, NV 89502

RE: SHPO Review of Bureau of Land Management Minimum Distances for Establishing an Area of Potential Effects (APE) for Undertakings with Potential Visual Effects.

Dear Dr. Hockett:

The Nevada State Historic Preservation Office (SHPO) has reviewed the Bureau of Land Management's proposal to incorporate suggested minimum distances for the establishment of an APE for certain undertakings that have a potential for visual effects into the document titled *State Protocol Agreement between The Bureau of Land Management, Nevada and The Nevada State Historic Preservation Officer for Implementing the National Historic Preservation Act* (Protocol; Revised December 22, 2014).

The SHPO enthusiastically supports this effort and believes that by providing these mutually agreed minimum distance guidelines to the Bureau of Land Management and the public through the Protocol, the time and effort required to develop and justify an APE for certain undertakings will be reduced and more consistent between similar undertakings in similar landscapes.

After reviewing the Bureau of Land Management's draft document titled *Defining Areas of Potential Effect, Indirect Effects to Historic Properties* (Pay, 2018) and consistent with past Bureau of Land Management efforts to characterize visual effects to specific historic properties (NV IM-2004-004; 8100 (NV-930) P) and current guidance provided in other Bureau of Land Management Protocol documents (Wyoming State Protocol, Appendix C), the SHPO has attached an initial proposal for minimum distances for APEs that would address potential visual effects from specific undertakings.

Please note that the SHPO briefly contacted the author of the three Argonne Research Laboratory reports cited in Pay's bibliography for some clarification. A copy of our email discussion is attached for the BLM's information. Some further discussion regarding the identification of APEs will need to occur concerning the visual contrast and visibility factors outlined in the *2013 Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands*

901 S. Stewart Street, Suite 5004 ✦ Carson City, Nevada 89701 ✦ Phone: 775.684.3448 Fax: 775.684.3442

www.shpo.nv.gov

Dr. Bryan Hockett
February 1, 2019
Page 2 of 2

and the 2014 National Park Service's *Guide to Evaluating Visual Impact Assessments for Renewable Energy Projects* as well as *The Secretary of the Interior's Standards for the Treatment of Historic Properties* in terms of scale, proportion, and massing.

The SHPO looks forward to a fruitful discussion about this proposal and the incorporation of mutually agreed distance guidance into the Protocol in the near future.

If you have any questions, please do not hesitate to contact me at 775.684.3443 or by email at rlpalmer@shpo.nv.gov.

Sincerely,

A handwritten signature in black ink, reading "Rebecca Lynn Palmer". The signature is written in a cursive style with large, flowing loops.

Rebecca Lynn Palmer
State Historic Preservation Officer

w/ attachments

These comments are in response to the proposed Table on Page 34 of Pay's report –

The table below is based on the three Argonne National Laboratory's (Argonne) research papers referenced in Pay's bibliography. Argonne recommends in all three papers that the "limit of visibility for casual observers be used as a minimum distance for visual impact assessments." This appears to translate to Argonne's Visibility Rating Level 3 (see Table 2 on page 17 of their transmission line report). Argonne indicates their 1-6 rating scale is based on the BLM's VRM system and Visual Contrast Ratings. Their Level 3 rating correlates to where potential indirect effects to historic resources may occur. Please note that Argonne indicated in their 11-27-2018 email they do have any data for the heights of the facilities in their examples. Argonne also does not appear to discuss design features (e.g. circuit types of the transmission lines - single vs. double may affect massing and proportion) in their reports and whether any of their examples might feature parallel facilities (e.g. 2 transmission lines running parallel).

Undertaking Type	Argonne Recommended Minimum Distances for Visual Impact Assessments – Indirect APE
230kv monopole tower electric transmission line	2.5 miles (see page 26)
230kv H-frame tower electric transmission line	3.5 miles (see page 26)
500kv monopole tower electric transmission line (note contradictory statements)	5 miles (page 1) 8 miles (see page 26)
500kv lattice tower electric transmission line	10 miles (see page 26)
Solar Energy Fields (Parabolic Trough)	"easily visible" at 14 miles (includes both day and night conditions)
Solar Energy Fields (PV facility)	"easily visible" at 22 miles (daytime conditions)
Wind Energy Fields (turbines 300-400 feet in height)	Suggested visual impact analysis radius due to movement of turbine blades: 30 miles during day – more for night due to lighting
Concentrated Solar Power Towers (5-20 MW)	"easily visible" at 20 miles

Please note that indirect effects may have the potential to extend beyond the direct effects APE for a "Vertical Structure less than 10 feet". Therefore, a site visit is recommended to determine visibility of the casual observer for those undertakings. As width and massing of new structures are unique to each undertaking and setting, a visual impact analysis could help define the APE and be based on "viewshed limiting factors" such as topography, vegetation, manmade structures, viewer height, target height, earth curvature, atmospheric refraction etc. (list of factors courtesy the Wyoming BLM's *Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands 2013*).

Robin K. Reed

From: Sullivan, Robert G. [sullivan@anl.gov]
Sent: Wednesday, November 28, 2018 8:06 AM
To: Robin K. Reed
Cc: Rebecca Palmer
Subject: RE: electric transmission visibility study - heights of tower facilities ?

Hi Robin,

The 46-page report is all there is for this study.

I am happy to try to identify the line, but it may take a little while, because I no longer work in the office and will have to get someone else to take a look.

I do not think that Argonne will be doing similar work in the future. Right now, I am writing a book for BLM on protection of night skies and naturally dark environments. I am also revising a book I wrote on mitigation of visual impacts for renewable energy facilities. Very shortly, I will have a paper coming out on explaining the difference between visual impact assessment under Section 106 vs. NEPA.

If these publications are of interest to you, let me know. The books are a ways off, but the VIA paper should be out in the next month or so.

Robert Sullivan
Argonne National Laboratory
630-252-6182

From: Robin K. Reed <rreed@shpo.nv.gov>
Sent: Tuesday, November 27, 2018 7:15 PM
To: Sullivan, Robert G. <sullivan@anl.gov>
Cc: Rebecca Palmer <rlpalmer@shpo.nv.gov>
Subject: RE: electric transmission visibility study - heights of tower facilities ?

Robert:

Thank you for your email.

As our office only has a copy of the 46 page report, would it be possible to obtain a copy of the full report of this study?

Regarding the Southern Nevada 500kv facility listed in Table 1, would you let me know which company this line is associated with and any other details you may have including its length etc.? Is there a substation in North Las Vegas?

Will Argonne be conducting more studies similar to this one? We have also been reading your reports regarding visibility for solar energy facilities and wind turbines.

Our office appreciates your assistance and valuable research.

Robin K. Reed
Deputy State Historic Preservation Officer

Nevada State Historic Preservation Office
Nevada Department of Conservation and Natural Resources
901 S. Stewart Street, Suite 5004 | Carson City, NV 89701
775-684-3437 | rreed@shpo.nv.gov
shpo.nv.gov

Your opinion matters, take our second preservation plan survey [here](#)

From: Sullivan, Robert G. [<mailto:sullivan@anl.gov>]
Sent: Tuesday, November 27, 2018 10:10 AM
To: Robin K. Reed
Subject: RE: electric transmission visibility study - heights of tower facilities ?

Hi Robin,

I appreciate your interest in the transmission visibility study, and am glad you're finding it useful. Unfortunately, and can't be of too much help regarding tower heights. I am sure that that whoever constructed/maintains a particular line has that info somewhere, but it isn't available on the Web any place I could find, and as far as I know, it is not included even in the proprietary GIS data sets (e.g. Platts – just checked that with our GIS specialists). As far as I have been able to determine, there are no standard heights

It is definitely the case that tower heights and even types will vary within a line. All I can suggest is looking at the vehicles and people in the photos I included to use them as scale figures to approximate the height. Or look up the companies that own the lines mentioned and call them to see if they have and will share that information.

Sorry I can't be of more help.

Robert Sullivan
Argonne National Laboratory
630-252-6182

From: Robin K. Reed <rreed@shpo.nv.gov>
Sent: Wednesday, November 21, 2018 7:52 PM
To: Sullivan, Robert G. <sullivan@anl.gov>
Subject: electric transmission visibility study - heights of tower facilities ?

Mr. Sullivan:

Regarding your 2014 study of electric transmission visibility, would you let me know the heights of the various tower facilities that are mentioned?

<http://visualimpact.anl.gov/transvctd/>

Your studies are very very helpful for our office.

Looking forward to hearing from you,

Robin K. Reed
Deputy State Historic Preservation Officer
Nevada State Historic Preservation Office
Nevada Department of Conservation and Natural Resources

901 S. Stewart Street, Suite 5004 | Carson City, NV 89701
775-684-3437 | rreed@shpo.nv.gov
shpo.nv.gov

Your opinion matters, take our second preservation plan survey [here](#)

SHPO letter to Mr. Jon K. Raby
June 18, 2021

Attachment C

Rebecca Palmer

From: Hockett, Bryan <b50hocke@blm.gov>
Sent: Monday, February 4, 2019 8:35 AM
To: Rebecca Palmer
Cc: npay@blm.gov; Robin Reed; Jessica Axsom; Kristen Brown; Ashley Wiley; Karyn de Dufour
Subject: Re: [EXTERNAL] Establishing an Area of Potential Effects (APE) for Undertakings with Potential Visual Effects.

Thanks Rebecca -

I really appreciate you taking the time to review and comment on the draft guidance report. Nick and I will look over your comments and discuss, and get back with you on a mutually agreeable time to talk further. In the short term, we are all trying to play catch up after the furlough, and getting highest priority work accomplished over the next two weeks in case there is another shut down.

In the interim, Nick and I have discussed whether it is best to include the final draft in the Protocol or more simply issue it as a BLM Nevada IB guidance document - not an instruction IM (e.g., thou shalt use the distances listed in the document),

On Fri, Feb 1, 2019 at 4:02 PM Rebecca Palmer <rlpalmer@shpo.nv.gov> wrote:

Good Afternoon Bryan,

I hope this email finds you well.

To prepare this letter we have reviewed a number of references and consulted with several knowledgeable individuals. I look forward to a fruitful discussion with the Bureau of Land Management that will result in a mutually acceptable solution to assist field staff in the identification of an area of potential effects.

There is a hard copy going out in the mail today.

Best Regards,

Rebecca Lynn Palmer

Administrator/State Historic Preservation Officer

Nevada State Historic Preservation Office

Department of Conservation and Natural Resources

901 South Stewart Street, Suite 5004

(O): 775-684-3443 | (F) 775-684-3442

rlpalmer@shpo.nv.gov

SHPO letter to Mr. Jon K. Raby
June 18, 2021

Attachment D

Rebecca Palmer

From: Hockett, Bryan <b50hocke@blm.gov>
Sent: Friday, February 8, 2019 9:25 AM
To: Rebecca Palmer
Subject: BLM Nevada's Indirect Effects APE Development Guidance

Rebecca -

I wanted to provide you with a quick update on our plans for the guidance document we are working on here at the Nevada State Office regarding the development of Indirect Effects APEs on BLM-managed lands in Nevada.

We have requested additional peer-review of the draft document that you recently commented on from a broad spectrum of federal agencies. We are particularly interested in receiving additional feedback on the following perspectives developed in our draft: (1) Argonne's VRM analysis was for visual contrast ratings under the VRM program, not for determining reasonable distances for analyzing potential adverse indirect effects under cultural resources laws/regulations; (2) however, Argonne's VRM research has value for putting together 'best management practices' guidance under the cultural program even though VRM contrast rating distances are not 1:1 correspondences to potential for adverse indirect effect under the cultural program; (3) comments on Nick Pay's empirical research on existing built infrastructure projects and correlating reasonable indirect effects APEs with this empirical research; and (4) the value of providing maximum distance parameters, rather than minimum distance parameters, in the development of indirect effect APE guidance.

To this end, the following individuals have agreed to read and comment on our draft document:

BLM's Federal Preservation Officer, Washington, D.C.
4 BLM Deputy Preservation Officers outside of Nevada
Deputy Keeper of the National Register, National Park Service
Architectural Historian, Fish & Wildlife Service
Chief Landscape Architect and VRM Lead, BLM, Washington Office
2 BLM field archaeologist

We think this will provide us with a broad spectrum of comments on the empirical approach to the development of reasonable indirect effect APEs on BLM Nevada lands. Once we receive back all comments, which we anticipate within 30-45 days, we will adjust the draft document based on all comments received, including NV SHPO's. Following that, we will send you an updated draft, and then I will reach out to you to schedule a face-to-face meeting to discuss this issue further with you.

Thanks again for taking the time to comment on the draft document.

Bryan Hockett
Deputy Preservation Officer
Bureau of Land Management
Nevada State Office

SHPO letter to Mr. Jon K. Raby
June 18, 2021

Attachment E

Robin Reed

From: Hockett, Bryan S <b50hocke@blm.gov>
Sent: Monday, November 2, 2020 2:40 PM
To: Bill Marzella; Rebecca Palmer; Robin Reed; Jensen, Jill L
Subject: Fw: Instruction Memorandum No NV-2021-006 BLM NV Template Visual Area of Potential Effect Policy
Attachments: IM No NV-2021-006.pdf; Visual Effects Analysis Report Sept 25 2020 Pay Hockett Whetstone (1).docx
Follow Up Flag: Follow up
Flag Status: Flagged

All -

Please find attached a new BLM Nevada Policy that assists BLM Nevada Managers on determining reasonable Visual APEs.

Bryan Hockett
Lead Archaeologist
Bureau of Land management
Nevada State Office

From: Vocelka, Cheryl (Cheri) J <cvocelka@blm.gov>
Sent: Monday, November 2, 2020 2:33 PM
To: BLM_NV_ALL_DM <BLM_NV_ALL_DM@blm.gov>; BLM_NV_ALL_FM <BLM_NV_ALL_FM@blm.gov>
Cc: Hockett, Bryan S <b50hocke@blm.gov>; Fennel, Marina L <mfennel@blm.gov>; Shepherd, Alan B <ashepher@blm.gov>; Swickard, Joan N <jswickard@blm.gov>; Davis, Kristianna <kristiannadavis@blm.gov>
Subject: Instruction Memorandum No NV-2021-006 BLM NV Template Visual Area of Potential Effect Policy

Attached is BLM Nevada IM No. NV-2021-006. This IM serves as the policy for meeting the reasonable and good faith standard in developing a Visual Areal of Potential Effect in consultation with SHPO, interested parties, tribes, and members of the public. If you have any questions, please contact Bryan Hockett at b50hocke@blm.gov.

Cheri

Cheri Vocelka
Executive Assistant
Bureau of Land Management
Nevada State Office
1340 Financial Boulevard
Reno, Nevada 89502

775-861-6590

SHPO letter to Mr. Jon K. Raby
June 18, 2021

Attachment F

ELECTRIC TRANSMISSION VISIBILITY AND VISUAL CONTRAST THRESHOLD DISTANCES IN WESTERN LANDSCAPES

Robert G. Sullivan, Jennifer M. Abplanalp, Sherry Lahti,
Kevin J. Beckman, Brian L. Cantwell, and Pamela Richmond^{1,2}

ABSTRACT

The advent of large-scale renewable energy development in the western United States requires the construction of new high-voltage electric transmission facilities to transport electricity from renewable energy generation facilities to load centers. Electric transmission facilities may cause substantial visual impacts to high-value scenic resources. The visibility and potential visual contrasts associated with electric transmission facilities are dependent on complex interactions of a variety of visibility factors, but little systematic study of visibility in real landscape settings has been conducted. In a study sponsored by the U.S. Department of Interior's Bureau of Land Management, field observations of 11 transmission facilities in Idaho, Nevada, and California were made. Study objectives included identifying the maximum distances at which the facilities could be seen and assessing the effect of distance on the visual contrast associated with the facilities. Observed facilities included three 500 kV lattice tower facilities, two 500-kV monopole facilities, five 230-kV H-frame facilities, and one 230-kV monopole facility. A total of 232 observations from 123 study observation points were made in a variety of lighting and weather conditions during 14 days of observations. Skylined facilities with 500-kV lattice towers were visible to the unaided eye at a maximum distance of approximately 17 mi (27 km), and 500-kV lattice tower facilities were visible at or beyond 10 mi (16 km) in 16 observations. The 500-kV lattice tower facilities were judged to be noticeable to casual observers at distances of up to 10 mi (16 km). They also were judged to strongly attract visual attention at distances of up to 3 mi (5 km). The 500-kV monopole facilities were visible at distances up to 11 mi (18 km), with two observations beyond 10 mi (16 km). The facilities were judged to be noticeable to casual observers at 5 mi (8 km), and a major attractant of visual attention at 2.5 mi (4.0 km). Skylined 230-kV H-frame tower facilities were observed at distances up to 8 mi (13 km). Facilities with 230-kV H-frame towers were judged to be noticeable to casual observers at distances of up to 3.5 mi (5.6 km). They were judged to strongly attract visual attention at distances of up to 1.5 mi (2.4 km). The results of this study have important implications for determining appropriate distances from transmission facilities for visual impact assessments, and for the siting of transmission facilities to reduce visual impacts on visually sensitive lands. **The authors recommend that the limit of visibility for casual**

¹ *Affiliation of authors:* Robert G. Sullivan, Jennifer Abplanalp, Kevin Beckman, Brian Cantwell, and Pamela Richmond, Environmental Science Division, Argonne National Laboratory, Argonne, IL; Sherry Lahti, U.S. Bureau of Land Management.

Address correspondence to: Robert G. Sullivan, Cultural and Visual Resources Team Leader, Environmental Science Division, Argonne National Laboratory, 9700 South Cass Avenue, EVS/240, Argonne, IL 60439; (phone) 630-252-6182; (fax) 630-252-6090; (e-mail) Sullivan@anl.gov.

² Argonne National Laboratory's work was supported by the U.S. Department of the Interior Bureau of Land Management, under interagency agreement, through U.S. Department of Energy contract DEAC02-06CH11357.

observers be used as a minimum distance for visual impact assessments. The recommended minimum distance from the project for visual impact analysis for 500 kV lattice tower facilities is 10 mi (16 km), and a more conservative distance would be 12–13 mi (19–21 km). The recommended minimum distance for impact analysis for 230 kV H-frame tower facilities is 3.5 mi (5.6 km), and a more conservative distance would be 4–5 mi (6–8 km). Beyond the minimum distances specified, the facilities would not likely be noticed by casual viewers. Beyond the more conservative distances specified, the facilities would not likely be seen, except in unusual circumstances.

SHPO letter to Mr. Jon K. Raby
June 18, 2021

Attachment G

DEFINING A VISUAL AREA OF POTENTIAL
EFFECTS TO HISTORIC PROPERTIES
ON BLM LANDS IN NEVADA

PREPARED BY:

Nicholas B. Pay

Pahrump Field Manager, BLM Southern Nevada District Office

Bryan Hockett

Deputy Preservation Officer, BLM Nevada State Office

Tanner Whetstone

Archaeologist, BLM Nevada Winnemucca District Office

Nevada State Office

Bureau of Land Management

1340 Financial Blvd

Reno, NV 89502

9/23/2020

ASSESSING VISUAL EFFECTS

One of the difficulties in defining a V-APE comes from disagreements between consulting parties regarding the distance from a Historic Property at which structural additions to the landscape begin to diminish the visual integrity of a property's significant features. Most of the time these arguments are based on differences of experience in working with different types of projects, as well as the subjectivity and opinions of what constitutes an adverse visual addition to the landscape between individuals. These disagreements can therefore lead to "erring on the side of caution" and developing unreasonably large APEs for assessing visual effects.

The simple fact that **an addition may be seen does not mean that it has the potential to cause adverse visual effects to Historic Properties. An adverse visual effect to a Historic Property would need to be acute to the point that a visual element introduced into the viewshed of the property diminishes the property's ability to convey its significance.** In other words, if a property is eligible because the viewshed is a major contribution to its significance and an introduced element obstructed the view in such a way that the view's integrity was acutely compromised, that likely constitutes an adverse visual effect to a Historic Property.

VISIBILITY DOES NOT EQUAL ADVERSE EFFECT

What characteristics of a Historic Property are sensitive enough that a visual addition into the viewshed can diminish a property's ability to convey its significance? To answer this question BLM Nevada reviewed each of the 7 Aspects (or Qualities) of Integrity, and then evaluated the potential effects of a visual element introduced into the viewshed of a Historic Property. Table 1 reflects the results of this assessment.