
Final Environmental Impact Statement
Thacker Pass Lithium Mine Project

Appendix N

Project Consistency with 2015 and 2019
Greater Sage-Grouse Approved Resource
Management Plan Amendments (GRSG ARMPA)

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APPENDIX N. PROJECT CONSISTENCY WITH 2015 AND 2019 GREATER SAGE-GROUSE APPROVED RESOURCE MANAGEMENT PLAN AMENDMENTS (GRSG ARMPA)

N.1 INTRODUCTION

In response to the USFWS 2010 “warranted, but precluded” ESA listing petition, the BLM initiated a review of conservation measures and policy within existing Resource Management Plans for field offices and districts that contain Greater Sage-Grouse habitat. This review process was recently finalized with the preparation of an Approved Resource Management Plan Amendment (ARMPA) and associated Environmental Impact Statement (EIS) to identify and incorporate conservation measures intended to conserve, enhance, and restore Greater Sage-Grouse habitat (BLM 2015a). The 2015 ARMPA is more commonly referred to as the Greater Sage-Grouse Amendment (GRSG Amendment). The GRSG Amendment provides guidance on measures to avoid and minimize potential impacts resulting from proposed projects in addition to providing appropriate measures to compensate for impacts that are unavoidable to Greater Sage-Grouse habitat resulting from development projects.

On October 11, 2017, following the direction in Secretary's Order 3353, the BLM issued a Notice of Intent to amend the Resource Management Plans (as amended in 2015) regarding Greater Sage-Grouse habitat management to bring the plans in alignment with the State of Nevada’s Greater Sage-Grouse Conservation Strategy and conservation strategies with the California Department of Fish and Wildlife. BLM published the Record of Decision (ROD) and ARMPA on March 28, 2019, referred to as the 2019 ARMPA. The 2019 ARMPA refines some of the decisions from the 2015 planning effort related to Greater Sage-Grouse habitat management and leaves in place the majority of the decisions from 2015. **Information in this section from the 2019 ARMPA is displayed in red text below.** BLM is currently conducting NEPA analysis under the 2015 GRSG ARMPA due to a legal injunction impeding implementation of the 2019 GRSG ARMPA. The following sections provide information on the consistency of the Proposed Action with the requirements of both the September 2015 GRSG Amendment and the March 2019 GRSG Amendment. A summary of the Proposed Action is provided in Chapter 2, Section 2.2 (Proposed Action).

Table N.1 presents the five GRSG Amendment Minerals Resources Management Decisions (MRMD) applicable to locatable minerals projects and supporting information. **Table N.2** presents the four GRSG Amendment Management Decisions (MD) applicable to locatable minerals projects. **Table N.3** presents twenty-two GRSG Amendment general Required Design Features (RDF) applicable to all discretionary projects located within Greater Sage-Grouse habitat in Nevada. **Table N.4** presents the seven GRSG Amendment RDFs specifically applicable to locatable mineral projects within Greater Sage-Grouse habitat in Nevada.

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Table N.1. Minerals Resources Management Decisions (MDs) for Locatable Minerals

MRMD #	MRMD Text	Applicable (Yes/No)	GRSG Amendment Consistency (Yes/No)			Notes
			Proposed Action	Alternative B	Alternative C	
15	<p>2015 GRSG ARMPA: Review Objective SSS 4, and to the extent allowed by law, apply MDs SSS 1 through SSS 4 when reviewing and analyzing projects and activities proposed in GRSG habitat. (Note: SSS 1 through SSS 4 are addressed below in Table N.2)</p>	Yes	Yes	Yes	Yes	<p>Objective SSS 4: In PHMAs and GHMAs, apply the concept of “avoid, minimize, and compensatory mitigation” for all human disturbance in areas not already excluded or closed, so as to avoid adverse effects on GRSG and its habitat. The first priority would be to avoid new disturbance; where this is not feasible, the second priority would be to minimize and mitigate any new disturbance (GRSG Amendment, Appendices F and I).</p> <p>The proponent has proposed a suite of applicant-committed environmental protection measures into their Proposed Action and other action alternatives, to incorporate Design Features and Management Decisions from the 2015 Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment.</p> <p>The BLM coordinated with the Nevada Sagebrush Ecosystem Technical Team (SETT) and Lithium Nevada Corporation (LNC) to calculate the amount of compensatory mitigation that would be required to offset residual impacts using the State of Nevada’s Conservation Credit System (CCS). The final number of credits purchased would be determined based on proximity ratios that may apply depending on where acquired offset credits are located. See Section N.6, <i>Compensatory Mitigation</i>, below, for further detail.</p> <p>As a result, the analysis and resulting mitigation for Greater Sage-Grouse outlined in Sections N.6, <i>Compensatory Mitigation</i> of this Final EIS are consistent with the 2015 GRSG Amendment.</p>
	<p>2019 GRSG ARMPA: Same as above.</p>	Yes	Yes	Yes	Yes	<p>Objective SSS 4: <i>When authorizing third-party actions in designated GRSG HMAs, the BLM will apply avoidance and minimization measures to reduce impacts, while seeking to achieve the planning-level goals and objectives for GRSG and its habitat, consistent with valid existing rights and applicable law. Management will be consistent with the GRSG goals and objectives, and in conformance with BLM Manual 6840, Special Status Species Management. Specifically, the BLM will authorize uses of the public lands that are consistent with the policy in BLM Manual 6840 and therefore “minimize or eliminate threats affecting the status of [GRSG]” or “improve the condition of [GRSG] habitat.”</i></p> <p>See Notes above. The analysis and resulting mitigation for Greater Sage-Grouse outlined in Sections N.6, <i>Compensatory Mitigation</i> of this Final EIS are consistent with the 2019 GRSG Amendment.</p>
16	<p>2015 GRSG ARMPA: Recommend for withdrawal SFA under the General Mining Act of 1872, as amended, subject to valid existing rights (see BLM 2015a; Appendix A, Figures 2.1 and 2.4).</p>	No	--	--	--	No Sagebrush Focal Areas (SFAs) are located within the project area.
	<p>2019 GRSG ARMPA: <i>MDMR 16 was removed from the 2019 GRSG ARMPA</i></p>	--	--	--	--	N/A
17	<p>2015 GRSG ARMPA: On public lands, manage disturbances associated with notice-level activity in GRSG habitat on a landscape basis to avoid segmenting a project. Do this by encouraging operators and claimants to consolidate exploration into a plan of operations to reduce the proliferation of mining notices, in accordance with 43 CFR, Part 3809.21(b).</p>	Yes	Yes	Yes	Yes	<p>LNC has included all surface exploration into the Proposed Action.</p> <p>Final EIS Section 2.3.8 states: Under Alternative A, LNC would continue to conduct exploration within the Project area focused on expanding mineralization in and around the known deposit and other areas of interest to develop additional geologic mapping and data compilation. An additional 150 acres of exploration-related disturbance within the Project area is proposed over the life of the mine. Exploration activities would include surface sampling, trenching, bulk sampling, and drilling. Exploration activities may also include geotechnical investigations, geophysical surveys, water exploration, and monitoring well installation, as necessary during the life of the Project. Complete details of the proposed exploration activities are presented in Section 3.27, <i>Exploration Operations</i>, of the Thacker Pass Mine and Reclamation Plan of Operations, presented in Appendix B.</p>
	<p>2019 GRSG ARMPA: Same as above.</p>	Yes	Yes	Yes	Yes	Same as above.

Appendix N – GRSG Amendment Consistency Tables

MRMD #	MRMD Text	Applicable (Yes/No)	GRSG Amendment Consistency (Yes/No)			Notes
			Proposed Action	Alternative B	Alternative C	
18	<p>2015 GRSG ARMPA: Subject to valid existing rights and applicable law, authorize locatable mineral development activity, by approving plans of operation and apply mitigation and best management practices that minimize the loss of PHMAs and GHMAs or that enhance GRSG habitat by applying the “avoid, minimize and compensatory mitigation” process through an applicable mitigation system, such as the Nevada Conservation Credit System.</p>	Yes	Yes	Yes	Yes	<p>The proponent has proposed a suite of applicant-committed environmental protection measures into their Proposed Action, which incorporate Design Features and Management Decisions from the 2015 Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan.</p> <p>The BLM coordinated with the Nevada SETT and LNC to calculate the amount of compensatory mitigation that would be required to offset residual impacts using the State of Nevada’s Conservation CCS. The final number of credits purchased would be determined based on proximity to the project. See Section N.6, <i>Compensatory Mitigation</i>, below for further detail.</p>
	<p>2019 GRSG ARMPA: Subject to valid existing rights and applicable law, authorize locatable mineral development activity, by approving plans of operation and apply mitigation and best management practices that minimize the loss of PHMAs and GHMAs or that enhance GRSG habitat by applying <i>the mitigation strategy outlined in MD MIT 1 and exemplified in the Barrick Nevada Sage-Grouse Bank Enabling Agreement (March 2015).</i></p>	Yes	Yes	Yes	Yes	<p><i>MD MIT 1 States: The BLM would continue to apply the mitigation hierarchy as described in the CEQ regulations at 40 CFR 1508.20; however, the BLM would focus on avoiding, minimizing, rectifying, and reducing impacts over time. Compensation, which involves replacing or providing substitute resources for the impacts (including through payments to fund such work), would be considered only when voluntarily offered by a proponent, required by a law other than FLPMA, or to meet a State requirement. The BLM commits to cooperating with the State to analyze applicant-proposed or state-imposed compensatory mitigation to offset residual impacts. The BLM remains committed to achieving the planning-level management goals and objectives identified in this ROD and the 2015 ARMPA by ensuring Greater Sage-Grouse habitat impacts are addressed through implementing mitigating actions consistent with the governing RMP.</i></p> <p>The proposed project is subject to the State of Nevada’s Executive Order 2018-32, requiring compliance with the Nevada Sage-Grouse Conservation Plan (2018, as amended), and use of the Nevada CCS/Habitat Quantification Tool (HQT) to quantify and mitigate direct and indirect impacts to Greater Sage-Grouse or its habitat as a result of anthropogenic disturbance (as defined in the State of Nevada’s Sage-Grouse Conservation Plan). BLM would require compliance with State regulations as a component of compliance with applicable state law, and would incorporate such compliance as a term and condition of its NEPA authorization. Implementation of the CCS would be administered as outlined in the Greater Sage-Grouse Mitigation MOU.</p> <p>The BLM coordinated with the Nevada SETT and LNC to calculate the amount of compensatory mitigation that would be required to offset residual impacts using the State of Nevada’s Conservation CCS. The final number of credits purchased would be determined based on proximity to the project. See Section N.6, <i>Compensatory Mitigation</i>, below for further detail.</p> <p>As a result, the analysis and resulting mitigation for Greater Sage-Grouse outlined in Sections N.6, <i>Compensatory Mitigation</i> of this Final EIS are consistent with the 2019 GRSG Amendment.</p>
19	<p>2015 GRSG ARMPA: Close or mitigate abandoned mine sites in PHMAs and GHMAs to reduce GRSG predation by eliminating physical structures that could provide nesting opportunities and perching sites for predators.</p>	No	--	--	--	N/A
	<p>2019 GRSG ARMPA: Same as above.</p>	No	--	--	--	N/A

Table N.2. Management Decision(s) SSS 1 through SSS 4

MD #	MD Text	Applicable (Yes/No)	GRSG Amendment Consistency (Yes/No)			Notes
			Proposed Action	Alternative B	Alternative C	
SSS 1	<p>2015 GRSG ARMPA: In PHMAs and GHMAs, work with the proponent/applicant, whether in accordance with a valid existing right or not, and use the following screening criteria to avoid effects of the proposed human activity on GRSG habitat:</p> <ul style="list-style-type: none"> A. First priority—locate project/activity outside PHMAs and GHMAs B. Second priority—if the project/activity cannot be placed outside PHMAs and GHMAs, locate the surface-disturbing activities in non-habitat areas first, then in the least suitable habitat for GRSG. C. Third priority—collocate the project/activity next to or in the footprint of existing infrastructure 	Yes	Yes	Yes	Yes	Ore bodies are in place and not flexible in terms of location. LNC has consolidated its proposed facilities at the mine site and limited surface disturbance to the greatest extent practicable. LNC has worked with the BLM to avoid effects of human activity on GRSG and habitat. Evidence of the effort to avoid and minimize impacts to high-value sage-grouse habitat is demonstrated in that LNC intensified exploration for additional lithium resources specifically at the Thacker Pass area in 2017 to avoid potential impacts to ecologically sensitive areas in the Montana Mountains. The 2017 and 2018 exploration results revealed additional high-grade and near surface lithium mineralization northwest of the original pit area, at Thacker Pass, allowing LNC to develop the current Plan that avoids potential direct impacts to resources within the Montana Mountains. LNC has further reduced potential impacts by incorporating some previously authorized facilities in addition to implementing concurrent reclamation in areas where no further activity is approved or planned.
	<p>2019 GRSG ARMPA: In PHMAs and GHMAs, work with the proponent/applicant, whether in accordance with a valid existing right or not, and use the following screening criteria to avoid effects of the proposed human activity on GRSG habitat:</p> <ul style="list-style-type: none"> A. First priority—locate project/activity outside PHMAs and GHMAs B. Second priority—if the project/activity cannot be placed outside PHMAs and GHMAs, locate the surface-disturbing activities in non-habitat areas first, then in the least suitable habitat for GRSG. <i>In non-habitat, ensure the project/activity will not create a barrier to movement or connectivity between GRSG seasonal habitats and populations.</i> C. Third priority—collocate the project/activity next to or in the footprint of existing infrastructure 	Yes	Yes	Yes	Yes	See notes above.
SSS 2 (PHMA)	<p>2015 GRSG ARMPA: In PHMAs, the following conditions will be met in order to avoid, minimize, and mitigate any effects on GRSG and its habitat from the project/activity:</p> <p>2019 GRSG ARMPA: <i>In PHMAs, the following conditions will be met in order to avoid, minimize, impacts to GRSG and its habitat. The BLM will consider compensatory mitigation actions only when offered voluntarily by a project proponent; when required by law other than FLPMA or as a component of compliance with a States' mitigation plan, program, or authority, such as required by the State of Nevada Executive Order 2018-32 (and any future regulations adopted by the State of Nevada regarding compensatory mitigation, consistent with federal law):</i></p>					
SSS 2A (PHMA)	<p>2015 GRSG ARMPA: Manage discrete anthropogenic disturbances, whether temporary or permanent, so they cover less than 3 percent of 1) biologically significant units (BSUs; total PHMA area associated with a GRSG population area (see Appendix A, Figure 2.2) and 2) in a proposed project analysis area. See Appendix E, Disturbance Cap Guidance, for additional information on implementing the disturbance cap, including what is and is not considered disturbance and how to calculate the proposed project analysis area, as follows:</p> <ol style="list-style-type: none"> 1. If the 3 percent human disturbance cap is exceeded on all lands (regardless of ownership) in PHMAs in any given BSU, then no further discrete human disturbances (subject to applicable laws and regulations, such as the 1872 Mining Law, as amended, and valid existing rights) will be permitted, by BLM within GRSG PHMA in any given BSU until the disturbance has been reduced to less than the cap (see Nevada exception under MD SSS 2 a. 3. Appendix E). 2. If the 3 percent disturbance cap is exceeded on all lands (regardless of land ownership) within a proposed project analysis area in a PHMA, then no further anthropogenic disturbance will be permitted by BLM until disturbance in the proposed project analysis area has been reduced to maintain the area under the cap (subject to applicable laws and regulations, such as the 1872 Mining Law, as amended, valid existing rights; see Nevada exception under MD SSS 2 a. 3. Appendix E). 	Yes ¹	Yes	Yes	Yes	<p>2015 GRSG Amendment Appendix E directs that the disturbance cap analysis should be conducted and results provided in NEPA analyses, but any exceedances of the cap (at both the BSU and project levels scales) do not preclude a locatable mineral resources project from BLM approval.</p> <p>The BSU disturbance is calculated once a year at the BLM National Operations Center. The affected BSU for this project is the Lone Willow BSU. In 2019, approximately 0.35% of PHMA within the BSU was disturbed by cumulative actions. Results of the BSU scale disturbance calculations for the Proposed Action yields a 1.12 percent disturbance of PHMA within the BSU.</p> <p>BLM Nevada State Office has conducted project scale calculations for the Proposed Action. Results of the project scale disturbance calculations for the Proposed Action yields a 12 percent disturbance of PHMA within the Project scale study area for this calculation. See Section N.2 of this appendix.</p>

Appendix N – GRSG Amendment Consistency Tables

MD #	MD Text	Applicable (Yes/No)	GRSG Amendment Consistency (Yes/No)			Notes
			Proposed Action	Alternative B	Alternative C	
	2019 GRSG ARMPA: Same as above.					Same as above.
SSS 2B (PHMA)	2015 GRSG ARMPA: In PHMA, in undertaking BLM management actions, and consistent with valid existing rights and applicable law, in authorizing third-party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain to the species, including accounting for any uncertainty associated with the effectiveness of such mitigation. The project/activity with associated mitigation (such as the use of the State of Nevada Conservation Credit System) will result in an overall net conservation gain to GRSG (see Appendix F). Authorized/permitted activities are implemented by adhering to the RDFs described in Appendix C, consistent with applicable law. At the site-specific scale, if an RDF is not implemented, at least one of the following must be demonstrated in the NEPA analysis associated with the project/activity: <ol style="list-style-type: none"> 1. A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g., due to the site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable. 2. An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. 3. A specific RDF will provide no additional protection to GRSG or its habitat. 	Yes	Yes	Yes	Yes	Compensatory mitigation for residual impacts to PHMA unable to be avoided and minimized would be offset by LNC through the voluntary purchase of conservation credits through the Nevada Conservation Credit System or through habitat enhancement conducted on off-site parcels located near the Project site. The BLM coordinated with the Nevada SETT and LNC to calculate the compensatory mitigation to offset residual impacts using the State of Nevada’s CCS. The final number of credits purchased would be determined based on proximity to the project. See Section N.6, <i>Compensatory Mitigation</i> , below for further detail. The proponent has proposed a robust suite of applicant-committed environmental protection measures (see Appendix D of this EIS) into their Proposed Action, which incorporate Design Features and Management Decisions from the 2015 Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan. Under the Proposed Action, the Project would be consistent with a majority of RDFs presented in Table N.3 and Table N.4 below due to the application of the Applicant Committed Environmental Protection Measures presented in Appendix D .
	2019 GRSG ARMPA: Same as above.	Yes	Yes	Yes	Yes	The analysis and resulting mitigation for Greater Sage-Grouse outlined in Sections N.6, <i>Compensatory Mitigation</i> of this Final EIS are consistent with the 2019 GRSG Amendment. Under the Proposed Action, the Project would be consistent with a majority of RDFs presented in Table N.3 and Table N.4 below due to the application of the Applicant Committed Environmental Protection Measures presented in Appendix D .
SSS 2C (PHMA)	2015 GRSG ARMPA: In management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will apply the lek buffer-distances identified in the USGS report, Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review Open File-Report 2014-1239 (Manier et al. 2014), in accordance with Appendix B.	No	-	-	-	The proponent has proposed a suite of Applicant Committed Environmental Protection Measures into their Proposed Action, which incorporate Design Features and Management Decisions from the 2015 Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan. As a result, the analysis and resulting mitigation for Greater Sage-Grouse outlined in Sections N.6, <i>Compensatory Mitigation</i> of this Final EIS are consistent with the 2015 GRSG Amendment. Proposed locatable minerals resource projects are not subject to lek buffer distances identified in Appendix B of the GRSG Amendment.
	2019 GRSG ARMPA: <i>In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will utilize the lower end of the interpreted range of lek buffer-distances and guidance identified in Mainer et al. (2014) to establish the evaluation area around leks that will be used to analyze impacts during project-specific NEPA, including scientifically justifiable departures based on local data, topography, and other factors, in accordance with Appendix B.</i>	No	-	-	-	See note above. The analysis and resulting mitigation for Greater Sage-Grouse outlined in Sections N.6, <i>Compensatory Mitigation</i> of this Final EIS are consistent with the 2019 GRSG Amendment.
SSS 2D (PHMA)	2015 GRSG ARMPA: Seasonal restrictions will be applied during the period specified below to manage discretionary surface-disturbing activities and uses on public lands to prevent disturbances to GRSG during seasonal life-cycle periods: <ol style="list-style-type: none"> 1. In breeding habitat within 4 miles of active and pending GRSG leks from March 1 through June 30 2. Lek—March 1 to May 15 3. Lek hourly restrictions—6 p.m. to 9 a.m. 4. Nesting—April 1 to June 30 	No	-	-	-	The proponent has proposed a suite of Applicant Committed Environmental Protection Measures into their Proposed Action and other action alternatives, to incorporate Design Features and Management Decisions from the 2015 Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan. Proposed locatable minerals resource projects are not subject to the application of seasonal restrictions identified in the GRSG Amendment.

MD #	MD Text	Applicable (Yes/No)	GRSG Amendment Consistency (Yes/No)			Notes
			Proposed Action	Alternative B	Alternative C	
	5. Brood-rearing habitat from May 15 to September 15 6. Early—May 15 to June 15 7. Late—June 15 to September 15 8. Winter habitat from November 1 to February 28 The seasonal dates may be modified due to documented local variations (e.g., higher/lower elevations) or annual climatic fluctuations (e.g., early/late spring, long/heavy winter), in coordination with NDOW, in order to better protect GRSG and its habitat.					
	<p>2019 GRSG ARMPA: Seasonal restrictions will be applied during the period specified below to manage discretionary surface-disturbing activities and uses on public lands to prevent disturbances to GRSG during seasonal life-cycle periods:</p> <ol style="list-style-type: none"> 1. In breeding habitat within 4 miles of active and pending GRSG leks from March 1 through June 30 2. Lek—March 1 to May 15 3. Lek hourly restrictions—6 p.m. to 9 a.m. 4. Nesting—April 1 to June 30 5. Brood-rearing habitat from May 15 to September 15 6. Early—May 15 to June 15 7. Late—June 15 to September 15 8. Winter habitat from November 1 to February 28 <p><i>The seasonal dates could be modified or waived (in coordination with NDOW and/or CDFW) based on site-specific information that indicates:</i></p> <ol style="list-style-type: none"> a. <i>A project proposal's NEPA document and/or project record, and correspondence from NDOW and/or CDFW demonstrates that any modification (shortening/extending seasonal timeframes or waiving the seasonal timing restrictions altogether) is justified on the basis that it serves to better protect or enhance GRSG and its habitat than if the seasonal timing restrictions are implemented. Under this scenario modifications can occur if:</i> <ol style="list-style-type: none"> i. <i>A proposed activity will have beneficial or neutral impacts on GRSG.</i> ii. <i>Topography or other factors eliminate direct and indirect impacts from visibility and audibility to GRSG and its habitat.</i> iii. <i>There are documented local variations (e.g., higher/lower elevations) and/or annual climatic fluctuations (e.g., early/late spring, long/heavy winter) that indicate the seasonal Life cycle periods are different than presented, or that GRSG are not using the area during a given seasonal life cycle period.</i> b. <i>Modifications are needed to address an immediate public health and safety concern in a timely manner (e.g., maintaining a road impacted by flooding).</i> c. <i>The proposed action is determined to be a routine administrative function conducted by federal, state or local governments, including prior existing uses, authorized uses, valid existing rights and existing infrastructure (i.e., rights-of-way for roads) that serve a public purpose and will have no adverse impacts on GRSG or its habitat.</i> 	No	-	-	-	The proponent has proposed a suite of Applicant Committed Environmental Protection Measures into their Proposed Action and other action alternatives, which incorporate Design Features and Management Decisions from the 2015 Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan. Proposed locatable minerals resource projects are not subject to the application of seasonal restrictions identified in the GRSG Amendment.

Appendix N – GRSG Amendment Consistency Tables

MD #	MD Text	Applicable (Yes/No)	GRSG Amendment Consistency (Yes/No)			Notes
			Proposed Action	Alternative B	Alternative C	
SSS 2E (PHMA)	2015 GRSG ARMPA: Authorizations and permits will limit noise from discretionary activities (during construction, operation, and maintenance) to not exceed 10 decibels above ambient sound levels at least 0.25 mile from active and pending leks, from 2 hours before to 2 hours after sunrise and sunset during the breeding season. See Appendix M, Greater Sage-Grouse Noise Protocol.	No	-	-	-	Results of project related noise emission modeling indicate a low probability for noise level exceedances of greater than 10 dBA at active Greater Sage-Grouse leks within 3.1 miles of the PoO boundary (Saxelby 2019). In addition, the proponent has proposed a suite of applicant-committed environmental protection measures into their Proposed Action and other action alternatives, to incorporate Design Features and Management Decisions from the 2015 Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment. Proposed locatable minerals resource projects are not subject to the application of seasonal restrictions identified in the GRSG Amendment.
	2019 GRSG ARMPA: Same as above.	No	-	-	-	See note above. The analysis and resulting mitigation for Greater Sage-Grouse outlined in Sections N.6, <i>Compensatory Mitigation</i> of this Final EIS are consistent with the 2019 GRSG Amendment.
SSS 3 (GHMA)	2015 GRSG ARMPA: In GHMAs, the following conditions will be met in order to avoid, minimize, and mitigate any effects on GRSG or its habitat from the project/activity:					
	2019 GRSG ARMPA: <i>In GHMAs, the following conditions will be met:</i>					
SSS 3A (GHMA)	2015 GRSG ARMPA: In GHMAs, in undertaking BLM management actions, and consistent with valid existing rights and applicable law, in authorizing third-party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain to the species, including accounting for any uncertainty associated with the effectiveness of such mitigation. The project/activity with associated mitigation (such as the use of the State of Nevada Conservation Credit System) in GHMAs will result in an overall net conservation gain to GRSG (see Appendix F, Regional Mitigation Strategy).	Yes	Yes	Yes	Yes	The proponent has proposed a suite of applicant-committed environmental protection measures into their Proposed Action, which incorporate Design Features and Management Decisions from the 2015 Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment. The BLM coordinated with the Nevada SETT and LNC to calculate the amount of compensatory mitigation that would be required to offset residual impacts using the State of Nevada’s CCS. The final number of credits purchased would be determined based on proximity to the project. See Section N.6, <i>Compensatory Mitigation</i> , below for further detail.
	2019 GRSG ARMPA: <i>See MD MIT I.</i>	Yes	Yes	Yes	Yes	See note above. The analysis and resulting mitigation for Greater Sage-Grouse outlined in Sections N.6, <i>Compensatory Mitigation</i> of this Final EIS are consistent with the 2019 GRSG Amendment.
SSS 3B (GHMA)	2015 GRSG ARMPA: Authorized/permitted activities are implemented adhering to the RDFs described in Appendix C, consistent with applicable law. At the site-specific scale, if an RDF is not implemented, at least one of the following must be demonstrated in the NEPA analysis associated with the project/activity: 1. A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g., due to the site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable. 2. An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. 3. A specific RDF will provide no additional protection to GRSG or its habitat.	Yes	Yes	Yes	Yes	The proponent has proposed a suite of applicant-committed environmental protection measures into their Proposed Action, which incorporate Design Features and Management Decisions from the 2015 Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment. Under the Proposed Action, the Project would be consistent with a majority of RDFs as presented in Table N.3 and Table N.4 below due to the application of the Applicant Committed Environmental Protection Measures presented in Appendix D .
	2019 GRSG ARMPA: Same as above.	Yes	Yes	Yes	Yes	The proponent has proposed a suite of applicant-committed environmental protection measures into their Proposed Action, to incorporate Design Features and Management Decisions from the 2019 Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment. Under the Proposed Action, the Project would be consistent with a majority of RDFs as presented in Table N.3 and Table N.4 below due to the application of the Applicant Committed Environmental Protection Measures presented in Appendix D .

MD #	MD Text	Applicable (Yes/No)	GRSG Amendment Consistency (Yes/No)			Notes
			Proposed Action	Alternative B	Alternative C	
SSS 3C (GHMA)	<p>2015 GRSG ARMPA: In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will apply the lek buffer-distances identified in the USGS report, Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review Open File Report 2014-1239 (Manier et.al 2014)], in accordance with Appendix B.</p>	No	-	-	-	The proponent has proposed a suite of applicant-committed environmental protection measures into their Proposed Action, to incorporate Design Features and Management Decisions from the 2015 Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment.
	<p>2019 GRSG ARMPA: <i>In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will utilize the lower end of the interpreted range of lek buffer-distances and guidance identified in Mainer et al. (2014) to establish the evaluation area around leks that will be used to analyze impacts during project-specific NEPA, including scientifically justifiable departures based on local data, topography, and other factors, in accordance with Appendix B.</i></p>	No	-	-	-	See note above. The analysis and resulting mitigation for Greater Sage-Grouse outlined in Sections N.6, <i>Compensatory Mitigation</i> of this Final EIS are consistent with the 2019 GRSG Amendment.
SSS 3D (GHMA)	<p>2015 GRSG ARMPA: Seasonal restrictions will be applied during the period specified below to manage discretionary surface-disturbing activities and uses on public lands to prevent disturbing GRSG during seasonal life cycle periods, as follows:</p> <ol style="list-style-type: none"> 1. In breeding habitat within 4 miles of active and pending GRSG leks from March 1 through June 30 <ol style="list-style-type: none"> a. Lek—March 1 to May 15 b. Lek hourly restrictions—6 p.m. to 9 a.m. c. Nesting—April 1 to June 30 2. Brood-rearing habitat from May 15 to September 15 <ol style="list-style-type: none"> a. Early—May 15 to June 15 b. Late—June 15 to September 15 c. Winter habitat from November 1 to February 28 <p>The seasonal dates may be modified due to documented local variations (e.g., higher/lower elevations) or annual climatic fluctuations (e.g., early/late spring, long/heavy winter), in coordination with NDOW, in order to better protect GRSG and its habitat.</p>	No	-	-	-	The proponent has proposed a suite of applicant-committed environmental protection measures into their Proposed Action, which incorporate Design Features and Management Decisions from the 2015 Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment. Proposed locatable minerals resource projects are not subject to the application of seasonal restrictions identified in the 2015 GRSG Amendment.
	<p>2019 GRSG ARMPA: Seasonal restrictions will be applied during the period specified below to manage discretionary surface-disturbing activities and uses on public lands to prevent disturbing GRSG during seasonal life cycle periods, as follows:</p> <ol style="list-style-type: none"> 1. In breeding habitat within 4 miles of active and pending GRSG leks from March 1 through June 30 <ol style="list-style-type: none"> a. Lek—March 1 to May 15 b. Lek hourly restrictions—6 p.m. to 9 a.m. c. Nesting—April 1 to June 30 2. Brood-rearing habitat from May 15 to September 15 <ol style="list-style-type: none"> a. Early—May 15 to June 15 b. Late—June 15 to September 15 c. Winter habitat from November 1 to February 28 <p><i>The seasonal dates could be modified or waived (in coordination with NDOW and/or CDFW) based on site-specific information that indicates:</i></p> <ol style="list-style-type: none"> a. <i>A project proposal's NEPA document and/or project record, and correspondence from NDOW and/or CDFW demonstrates that any modification (shortening/extending seasonal timeframes or waiving the seasonal timing</i> 	No	-	-	-	See note above. Proposed locatable minerals resource projects are not subject to the application of seasonal restrictions identified in the 2015 GRSG Amendment.

Appendix N – GRSG Amendment Consistency Tables

MD #	MD Text	Applicable (Yes/No)	GRSG Amendment Consistency (Yes/No)			Notes
			Proposed Action	Alternative B	Alternative C	
	<p><i>restrictions altogether) is justified on the basis that it serves to better protect or enhance GRSG and its habitat than if the seasonal timing restrictions are implemented. Under this scenario modifications can occur if:</i></p> <p><i>i. A proposed activity will have beneficial or neutral impacts on GRSG.</i></p> <p><i>ii. Topography or other factors eliminate direct and indirect impacts from visibility and audibility to GRSG and its habitat.</i></p> <p><i>iii. There are documented local variations (e.g., higher/lower elevations) and/or annual climatic fluctuations (e.g., early/late spring, long/heavy winter) that indicate the seasonal Life cycle periods are different than presented, or that GRSG are not using the area during a given seasonal life cycle period.</i></p> <p><i>b. Modifications are needed to address an immediate public health and safety concern in a timely manner (e.g., maintaining a road impacted by flooding).</i></p> <p><i>c. The proposed action is determined to be a routine administrative function conducted by federal, state or local governments, including prior existing uses, authorized uses, valid existing rights and existing infrastructure (i.e., rights-of-way for roads) that serve a public purpose and will have no adverse impacts on GRSG or its habitat.</i></p> <p><i>d. Authorizations and permits will limit noise from discretionary activities (during construction, operation, and maintenance) to not exceed 10 decibels above ambient sound levels at least 0.25 mile from active and pending leks from 2 hours before to 2 hours after sunrise and sunset during the breeding season. See Appendix G, Greater Sage-Grouse Noise Protocol.</i></p>					
SSS 3E (GHMA)	<p>2015 GRSG ARMPA: Authorizations and permits will limit noise from discretionary activities (during construction, operation, and maintenance) to not exceed 10 decibels² above ambient sound levels at least 0.25 mile from active and pending leks, from 2 hours before to 2 hours after sunrise and sunset during the breeding season. See Appendix M, Greater Sage-Grouse Noise Protocol.</p>	No	-	-	-	Proposed locatable minerals resource projects are not subject to the application of seasonal noise restrictions identified in the 2015 GRSG Amendment. . In addition, the proponent has proposed a suite of applicant-committed environmental protection measures into their Proposed Action, which incorporate Design Features and Management Decisions from the 2015 Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment.
	<p>2019 GRSG ARMPA: Incorporated into MD SSS 3D (iv).</p>	No	-	-	-	See note above.
SSS 4 (OHMA)	<p>2015 GRSG ARMPA: In OHMAs, authorized/permited activities are implemented adhering to the RDFs described in Appendix C, consistent with applicable law. At the site-specific scale, if an RDF is not implemented, at least one of the following must be demonstrated in the NEPA analysis associated with the project/activity:</p> <ol style="list-style-type: none"> 1. A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g., due to the site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable. 2. An alternative RDF is determined to provide equal or better protection for GRSG or its habitat. 3. A specific RDF will provide no additional protection to GRSG or its habitat. 	Yes	Yes	Yes	Yes	OHMA occurs within the project area. The Proposed Action would be consistent with a majority of RDFs as presented in Table N.3 and Table N.4 below due to the application of the Applicant Committed Environmental Protection Measures presented in Appendix D .
	<p>2019 GRSG ARMPA: Same as above.</p>	Yes	Yes	Yes	Yes	See note above.

Table N.3. General Required Design Features (RDF) from the 2015 and 2019 GRSG ARMPA

RDF #	RDF Text	Applied (Yes/No)	Consistency (Yes/No)		Notes
			2015 GRSG Amendment	2019 GRSG Amendment	
			<i>Proposed Action</i>	<i>Proposed Action</i>	
1	Locate new roads outside of GRSG habitat to the extent practical.	No	Yes	Yes	LNC has minimized new roads to the extent practical while still allowing access to its existing mineral claims/ore bodies.
2	Avoid constructing roads within riparian areas and ephemeral drainages. Construct low water crossings at right angles to ephemeral drainages at stream crossings (note that such construction may require permitting under Sections 401 and 404 of the Clean Water Act).	No	Yes	Yes	Proposed access roads do not impact riparian areas but do cross ephemeral drainages. LNC Water Quality Design Features are included in the SWMP (PoO Appendix C).
3	Limit construction of new roads where roads are already in existence and could be used or upgraded to meet the needs of the project or operation. Design roads to an appropriate standard, no higher than necessary, to accommodate intended purpose and level of use.	No	Yes	Yes	New roads within the PoO boundary include haul roads and secondary roads designed to MSHA standards. The haul road maximum gradient will be less than ten percent with an 80-foot road width. Roads will be sloped away from the centerline and have six to 12 inches of crushed rock. Secondary roads will be approximately 30 feet in width with a 1.5 percent grade from the centerline with three to six inches of crushed rock placed on the road surface. Exploration roads that are required will follow existing roads to the extent possible or will be built in areas of low gradient where possible to minimize new disturbance. New exploration roads will be reclaimed when they are constructed in areas where mining-related activities will not consume them. LNC Water Quality Design Features are included in the SWMP (PoO Appendix C).
4	Coordinate road construction and use with right of way (ROW) holders to minimize disturbance to the extent possible.	No	Yes	Yes	An existing road that runs along the Harney Electric Cooperative power line will be used in the event of maintenance on the power or water line. LNC is in communication with Harney Electric Cooperative regarding the construction of the new powerline.
5	During project construction and operation, establish and post speed limits in GRSG habitat to reduce vehicle/wildlife collisions or design roads to be driven at slower speeds.	Yes	Yes	Yes	LNC's BBCS Section 5.6, Administrative Controls, states: <ul style="list-style-type: none"> • Speed limits will be posted at all times to minimize the risk of collisions between Project vehicles and raptors, birds, or bats.
6	Newly constructed project roads that access valid existing rights would not be managed as public access roads. Proponents will restrict access by employing traffic control devices such as signage, gates, and fencing.	No	Yes	Yes	New mine roads and exploration roads would be managed as non-public access routes and appropriate signage would be installed. Signage would not indicate a restriction of public access to public lands for other appropriate uses (e.g., recreation). The new access roads that are meant to provide public access and cross mining claims would be managed as access routes allowing public access.
7	Require dust abatement practices when authorizing use on roads.	Yes	Yes	Yes	LNC would develop a Fugitive Dust Control Plan in compliance with the NDEP- Bureau of Air Pollution Control (BAPC) Operations Permit. The Plan would require road maintenance activities to reduce fugitive dust emissions. LNC's Air Quality Design Features (Appendix D) relative to dust abatements practices include: <ul style="list-style-type: none"> • Applying surface treatments (chemical stabilization), additional watering and traffic control regulations (such as reduction in speed and traffic volume restrictions on unpaved roads), as necessary. • Stabilizing the surface of areas adjoining roads which are fugitive dust sources by vegetating or mulching, as necessary. • Restricting travel of unauthorized vehicles on unestablished roads, as necessary. • Compacting unpaved roads to stabilize the road surface and promptly remove ore, rock, soil, and other debris from roads, as necessary.
8	No RDF #8 Listed in the GRSG Amendment.	--	--	--	--
9	Upon project completion, reclaim roads developed for project access on public lands unless, based on site-specific analysis, the route provides specific benefits for public access and does not contribute to resource conflicts.	Yes	Yes	Yes	All project related haul, secondary, and exploration roads would be reclaimed upon mine closure. Some would be concurrently reclaimed when no further use is needed.
10	Design or site permanent structures that create movement (e.g., pump jack/ windmill) to minimize impacts on GRSG habitat.	No	N/A	N/A	No structures that result in automated repetitive movement are proposed.

RDF #	RDF Text	Applied (Yes/No)	Consistency (Yes/No)		Notes
			2015 GRSG Amendment	2019 GRSG Amendment	
			<i>Proposed Action</i>	<i>Proposed Action</i>	
11	Equip temporary and permanent aboveground facilities with structures or devices that discourage nesting and perching of raptors, corvids, and other predators.	Yes	Yes	Yes	LNCs BBCS Section 5.5, Deterrence Measures, states: <ul style="list-style-type: none"> Raptor anti-perch devices would be installed on the proposed 25-kV utility poles located in sage-grouse habitat within the Project area. Anti-perch devices would also be installed on tall structures (where appropriate) within the mine facilities and plant site. LNC would also install proposed transmission infrastructure to be incompatible with the establishment of corvid and raptor nests, in accordance with AVLIC guidelines.
12	Control the spread and effects of nonnative, invasive plant species (e.g., by washing vehicles and equipment, minimize unnecessary surface disturbance; Evangelista et al. 2011). All projects would be required to have a noxious weed management plan in place prior to construction and operations.	Yes	Yes	Yes	LNC’s Noxious Weed Control measures are discussed in the Noxious and Invasive Weed Management Plan, Appendix D of the PoO (LNC 2019). LNC Vegetation Design Features include: <ul style="list-style-type: none"> If any used equipment is brought to the Project site, it will arrive at the work site clean and free of noxious weed seeds or parts. Equipment that requires cleaning will be addressed using either compressed air and shovels or using high-pressure washing devices. Vehicles and equipment will be inspected and verified to be free of soil and debris capable of transporting noxious weed seeds or parts prior to being allowed access to the Project area. Noxious weeds will be controlled prior to soil stripping and prior to soil redistribution to the extent feasible. Growth media stockpiles will be seeded with a certified noxious weed-free native seed mix in order to protect the soil from erosion and from noxious weed invasion. High priority areas that will be monitored for noxious weeds include major traffic areas, road cuts and embankments, and non-use areas around buildings. Concurrent reclamation will be employed. LNC will implement revegetation activities as promptly as possible on lands disturbed by past activities while continuing to develop other parts of the Project area. The source of straw/hay bales and mulch used for erosion control will be identified to verify that it is noxious weed-free. All seed used will be certified noxious weed-free. Imported gravel or fill material will be source-identified to ensure that the originating site is noxious weed-free.
13	Implement project site-cleaning practices to preclude the accumulation of debris, solid waste, putrescible wastes, and other potential anthropogenic subsidies for predators of GRSG.	Yes	Yes	Yes	A Solid and Hazardous Waste Management Plan would be developed for the Project that outlines proper storage, handling, and disposal methods, including prevention of exposure of substances to wildlife and the environment. Employee training would outline appropriate disposal practices, which includes the allowable wastes that can be placed in a landfill, management of used filters, oily rags, fluorescent light bulbs, aerosol cans, and other regulated substances. LNC Solid Waste Design Features (Appendix D) include: <ul style="list-style-type: none"> Employee training would outline appropriate disposal practices, which includes the allowable wastes that can be placed in a landfill, management of used filters, oily rags, fluorescent light bulbs, aerosol cans, and other regulated substances. All solid wastes generated by the mine and process operations would be collected in dumpsters near the point of generation. The roll-off container would be picked up within 90 days (or sooner) of initial waste accumulation and shipped off-site for disposal or disposed of onsite in a Class III Landfill. Hazardous wastes would be properly stored and placed in roll-off containers near their points of generation for no more than 90 days. Hazardous wastes would be picked up and disposed of at a facility licensed to treat, store, and dispose of the wastes. LNC would place appropriate labels on the roll-off containers at the time of delivery.

RDF #	RDF Text	Applied (Yes/No)	Consistency (Yes/No)		Notes
			2015 GRSG Amendment	2019 GRSG Amendment	
			<i>Proposed Action</i>	<i>Proposed Action</i>	
					<ul style="list-style-type: none"> LNC would place signs in the waste storage area at the accumulation facility to indicate the locations where drums, five-gallon pails, and/or boxes containing various materials are to be placed, including an area for hazardous wastes. Full and labeled drums would be placed in the designated areas on pallets with enough aisle space. Empty drums would be stored in a designated area within the fenced accumulation facility. LNC would isolate parts-washer contents from the oil/water separator and the general septic systems. These parts washers would be self-contained and will be located in the maintenance shop. The solvent collected in nearby drums would be returned to a certified recycling/disposal firm. LNC would have a trained response team at the site 24 hours per day to manage potential spills of regulated materials at the site. LNC would implement steps described in the Spill Contingency Plan (Appendix E of the proposed Mine Plan). <p>This would preclude the accumulative of debris, solid waste, putrescible wastes, and other potential anthropogenic subsidies for predators of GRSG.</p>
14	Locate project related temporary housing sites outside of GRSG habitat.	No	N/A	N/A	No temporary housing is proposed under action alternatives.
15	When interim reclamation is required, irrigate site to establish seedlings more quickly if the site requires it.	No	-	-	In accordance with the Thacker Pass Reclamation Plan, earthwork and revegetation activities will be limited by the time of year during which they can be effectively implemented (see Table 6-1 of the proposed Mine Plan). Site conditions or yearly climatic variations may require that this schedule be modified to achieve revegetation success (LNC 2019).
16	Utilize mulching techniques to expedite reclamation and to protect soils if the site requires it.	Yes	Yes	Yes	LNC Design Features (Appendix D) include: <ul style="list-style-type: none"> LNC would stabilize surface areas of adjoining roads by using revegetation or mulching techniques.
17	Restore disturbed areas at final reclamation to the pre-disturbance landforms and desired plant community.	Yes	Yes	Yes	LNC would reclaim all areas within the PoO boundary disturbed by mining and processing and exploration activities in accordance with BLM and NDEP-BMRR regulations and the approved Thacker Pass Reclamation Plan. Reclamation activities are designed to meet the BLM regulations contained in 43 Code of Federal Regulations (CFR) 3809 and achieve post-mining land uses consistent with the Winnemucca District Resource Management Plan (BLM 2015). The State of Nevada requires that a plan be developed for any new mining project and for expansions of existing operations (NAC 519A) meeting requirements to return mined lands to a productive post-mining land use. Earthwork reclamation will ensure that potential visual impacts resulting from development of the proposed Project are minimized. Regrading and reshaping of disturbed areas will occur on both an interim and concurrent basis using standard mine mobile equipment (i.e., dozers, trucks, loaders).
18	When authorizing ground-disturbing activities, require the use of vegetation and soil reclamation standards suitable for the site type prior to construction.	Yes	Yes	Yes	LNC would reclaim all areas within the PoO boundary disturbed by mining and processing and exploration activities in accordance with BLM and NDEP-BMRR regulations and the approved Thacker Pass Reclamation Plan. Reclamation activities are designed to meet the BLM regulations contained in 43 Code of Federal Regulations (CFR) 3809 and achieve post-mining land uses consistent with the Winnemucca District Resource Management Plan (BLM 2015). The State of Nevada requires that a plan be developed for any new mining project and for expansions of existing operations (NAC 519A) meeting requirements to return mined lands to a productive post-mining land use.

Appendix N – GRSG Amendment Consistency Tables

RDF #	RDF Text	Applied (Yes/No)	Consistency (Yes/No)		Notes
			2015 GRSG Amendment	2019 GRSG Amendment	
			<i>Proposed Action</i>	<i>Proposed Action</i>	
19	Instruct all construction employees to avoid harassment and disturbance of wildlife, especially during the GRSG breeding (e.g., courtship and nesting) season. In addition, pets shall not be permitted on site during construction.	Yes	Yes	Yes	LNC's SSS Wildlife Design Features (Appendix D) include: <ul style="list-style-type: none"> • Employees, contractors, and other related personnel would receive training regarding environmental responsibilities required by federal and state laws and the PoO. LNC's BBCS Section 7.1, Personnel Training, states: <ul style="list-style-type: none"> • In order to effectively implement the BBCS, LNC will ensure that all personnel and contractors receive training on the issues and protocols outlined in the BBCS. • LNC would establish wildlife protection policies that will prohibit the feeding or harassment of wildlife. • Pets would not be allowed within the Thacker Pass operations area.
20	To reduce predator perching in GRSG habitat, limit the construction of vertical facilities and fences to the minimum number and amount needed and install anti-perch devices where applicable.	Yes	Yes	Yes	LNC's BBCS Section 5.5, Deterrence Measures, states: <ul style="list-style-type: none"> • Raptor anti-perch devices would be installed on the proposed 25-kV utility poles located in sage-grouse habitat within the Project area. • Anti-perch devices would also be installed on tall structures (where appropriate) within the mine facilities and plant site. • LNC would also install proposed transmission infrastructure to be incompatible with the establishment of corvid and raptor nests, in accordance with APLIC guidelines. • Following decommissioning, elevated structures, including utility poles will be removed from the Project site to avoid creation of perch structures.
21	Outfit all reservoirs, pits, tanks, troughs or similar features with appropriate type and number of wildlife escape ramps.	No	-	-	
22	Load and unload all equipment on existing roads to minimize disturbance to vegetation and soil.	No	-	-	

Table N.4. Locatable Minerals RDFs to PHMA, GHMA, and OHMA from the 2015 GRSG ARMPA and 2019 GRSG ARMPA

RDF #	RDF Text	Applicable (Yes/No)	Consistency (Yes/No)		Notes
			2015 GRSG Amendment	2019 GRSG Amendment	
			Proposed Action	Proposed Action	
LOC 1	Install noise shields to comply with noise restrictions (see Action SSS 7) when drilling during the breeding, nesting, brood-rearing, and/or wintering season. Apply GRSG seasonal timing restrictions when noise restrictions cannot be met.	No	-	-	
LOC 2	Cluster disturbances associated with operations and facilities as close as possible, unless site-specific conditions indicate that disturbances to GRSG habitat would be reduced if operations and facilities locations would best fit a unique special arrangement.	No	-	-	
LOC 3	Restrict pit and impoundment construction to reduce or eliminate augmenting threats from West Nile virus.	No	-	-	
LOC 4	Remove or re-inject produced water to reduce habitat for mosquitoes that vector West Nile virus. If surface disposal of produced water continues, use the following steps for reservoir design to limit favorable mosquito habitat: <ul style="list-style-type: none"> • Overbuild size of ponds for muddy and non-vegetated shorelines • Build steep shorelines to decrease vegetation and increase wave actions • Avoid flooding terrestrial vegetation in flat terrain or low lying areas • Construct dams or impoundments that restrict down slope seepage or overflow • Line the channel where discharge water flows into the pond with crushed rock • Construct spillway with steep sides and line it with crushed rock • Treat waters with larvicides to reduce mosquito production where water occurs on the surface 	No	-	-	
LOC 5	Address post reclamation management in reclamation plan such that goals and objectives are to protect and improve sage-grouse habitat needs.	No	-	-	
LOC 6	Maximize the area of interim reclamation on long-term access roads and well pads including reshaping, topsoiling, and revegetating cut and fill slopes.	No	-	-	
LOC 7	Cover (e.g., fine mesh netting or use other effective techniques) all pits and tanks regardless of size to reduce sage-grouse mortality.	No	-	-	

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N.2 DISTURBANCE CALCULATIONS

Under Management Decision SSS 2A of the 2015 GRSG Amendment (**Table N.2** above), the BLM is required to conduct analysis of the area of disturbance at the local or project scale, in addition to analysis of disturbance densities across the BSU according to the methodology presented in 2015 GRSG Amendment Appendix E. The disturbance cap analysis results are provided in NEPA analyses, but any exceedances of the cap (at both the BSU and project levels scales) do not preclude a locatable mineral resources project from BLM approval.

N.2.1 Project Scale Calculation of the Preferred Alternative

Project scale disturbance calculations were conducted by the BLM for the Proposed Action according to the methods presented in Appendix E of the 2015 GRSG Amendment. PHMA habitat is the only habitat category considered in the calculation. The study area for the density calculation is comprised of a four-mile buffer of the disturbance footprint for the proposed project and an additional four-mile buffer of all occupied GRSG leks located within the initial disturbance footprint buffer. PHMA within the project scale study area for the calculation totaled 75,293. Existing disturbance within this area include 172 acres of roads, 2,335 acres of mining disturbance, 109 acres of utility powerlines, and 726 acres of other disturbance for a total of 3,343 acres. This acreage represents 4.4 percent of the total study area. Surface disturbance under the Proposed Action includes 5,695 acres bring the potential total surface disturbance within the project scale study area to 9,038 acres (12 percent of PHMA within the study area).

N.2.2 Biological Significant Unit (BSU) Scale Calculation of the Preferred Alternative

The BSU disturbance is calculated once a year at the BLM National Operations Center. The affected BSU for this project is the Lone Willow BSU. In 2019, approximately 0.23 percent of PHMA within the BSU was disturbed by cumulative actions.

N.3 SEASONAL HABITATS

Seasonal GRSG habitat within the Project area has been identified by NDOW in coordination with the BLM and is presented in **Figures N.1, N.2, and N.3**. The proponent has proposed a suite of Design Features into their Proposed Action, which incorporate Design Features and Management Decisions from the 2015 and 2019 Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendments.

N.4 REQUIRED LEK BUFFERS

Under the 2015 and 2019 GRSG Amendments, the BLM is directed to apply the lower end of lek buffer distances identified in the USGS Report on “Conservation Buffer Distance Estimates for

Greater Sage-Grouse – A Review,” Open File Report 2014-1239 (Mainer et al. 2014) to discretionary project approvals. Appendix B of the 2015 GRSG Amendment provides the following recommend lek buffers be applied to discretionary actions:

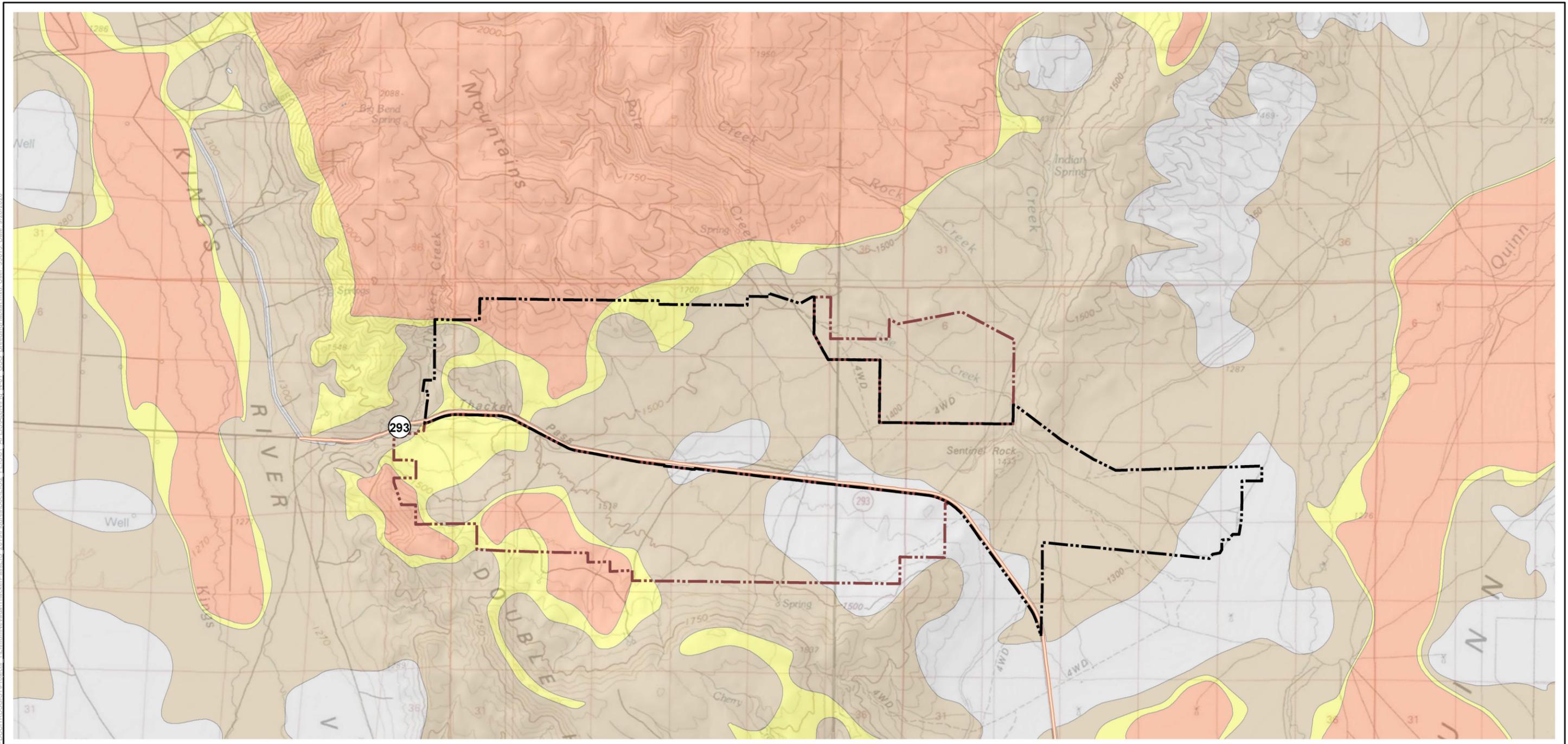
- Surface disturbance (activities that alter or remove the natural vegetation) within 3.1 miles of leks;
- Tall structures (e.g., communication towers, transmission towers and lines) within 2 miles of leks;
- Low structures (e.g., fences, rangeland structures) within 1.2 miles of leks; and
- Noise and related disruptive activities including those that do not result in habitat loss (e.g., motorized recreational events) at least 0.25 mile from leks.

Appendix B of the 2019 GRSG Amendment provides the following recommend lek buffers be applied to discretionary actions:

- *linear features (roads) within 3.1 miles of leks;*
- *infrastructure related to energy development within 3.1 miles of leks;*
- *tall structures (e.g., communication or transmission towers, transmission lines) within 2 miles of leks;*
- *low structures (e.g., fences, rangeland structures) within 1.2 miles of leks in flat or rolling terrain;*
- *surface disturbance (continuing human activities that alter or remove the natural vegetation, excluding livestock grazing) within 3.1 miles of leks; and*
- *noise and related disruptive activities including those that do not result in habitat loss (e.g., motorized recreational events) at least 0.25 miles from leks.*

Modelled noise estimates indicate that noise increases above the 10 dBA ARMPA guidance would occur at the Montana-10 lek, and potentially the Pole Creek-01 lek. The proponent has proposed a suite of applicant-committed environmental protection measures into their Proposed Action, which incorporate Design Features and Management Decisions from the 2015 Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment.

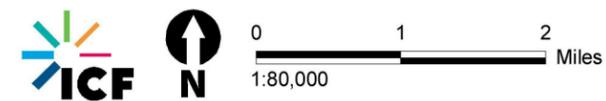
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- PoO Boundary
 - Proposed Exploration PoO Boundary
 - Disturbance Area Boundary
- Greater-Sage Grouse Breeding Habitat Rating
- High
 - Moderate
 - Low
 - Non-habitat



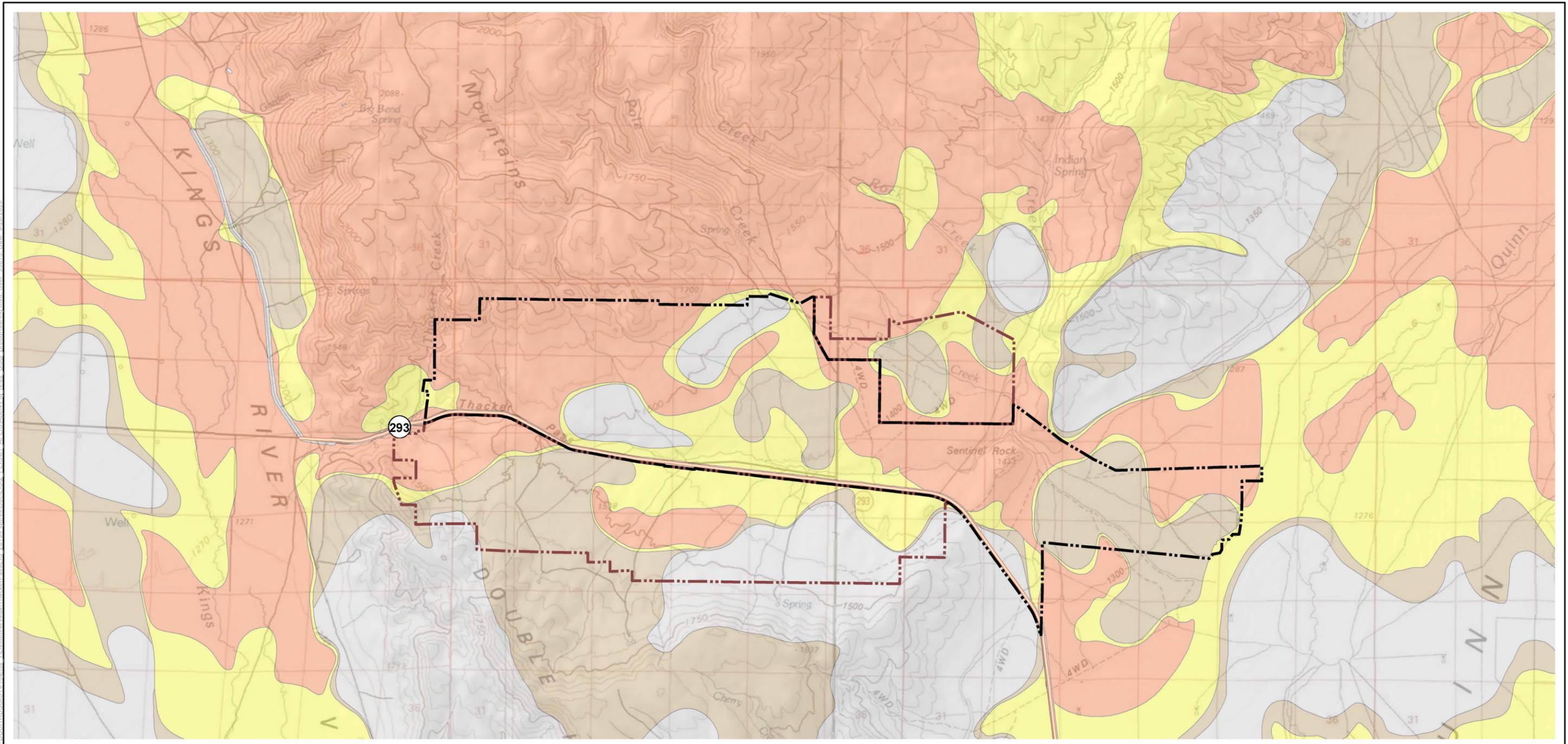
Source: Coates et al. 2016.



Date: 9/28/2020

Figure N.1
Greater Sage-Grouse Breeding Habitat

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- PoO Boundary
 - Proposed Exploration PoO Boundary
 - Disturbance Area Boundary
- Greater-Sage Grouse Brood-rearing Habitat Rating**
- High
 - Moderate
 - Low
 - Non-habitat



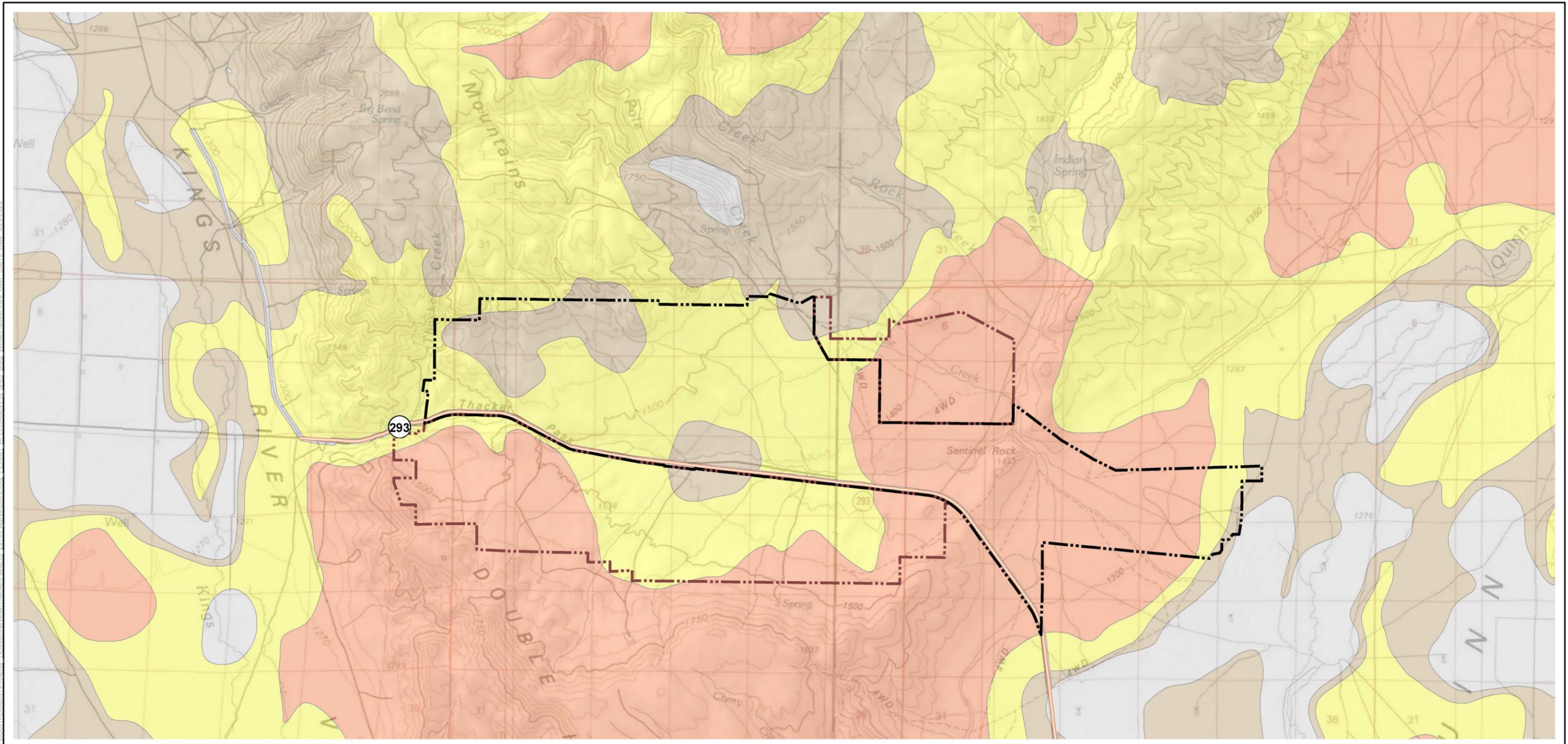
Source: Coates et al. 2016.

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Date: 9/28/2020

Figure N.2
Greater Sage-Grouse Brood-rearing Habitat

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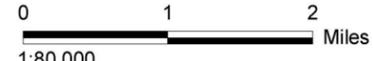


-  PoO Boundary
 -  Proposed Exploration PoO Boundary
 -  Disturbance Area Boundary
- Greater-Sage Grouse Winter Habitat Rating
-  High
 -  Moderate
 -  Low
 -  Non-habitat



Source: Coates et al. 2016.





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Date: 9/29/2020

Figure N.3
Greater Sage-Grouse Winter Habitat

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N.5 HABITAT OBJECTIVES

As directed by both GRSG Amendments, all BLM use authorizations will contain terms and conditions regarding the actions needed to meet or progress toward meeting the habitat objectives. BLM habitat objectives from Table 2-2 of the 2015/2019 GRSG Amendments are presented in **Table N.5** below. If onsite habitat enhancements are selected as part of the final NEPA authorization for the Project, BLM in coordination with NDOW, will identify long term monitoring plots to meet ARMPA objectives.

Table N.5. 2015 and 2019 GRSG ARMPA Habitat Objectives

Attribute	Indicators	Desired Condition (Habitat Objectives)
GENERAL/LANDSCAPE-LEVEL¹		
All life stages	Rangeland health assessments	Meeting all standards ²
Cover (nesting)	Seasonal habitat needed	>65% of the landscape in sagebrush cover
	Annual grasses	<5%
Security (nesting)	Conifer encroachment	<3% phase I (>0 to <25% cover) No phase II (25 to 50% cover) No phase III (>50% cover)
Cover and food (winter)	Conifer encroachment	<5% phase I (>0 to <25% cover) No phase II (25 to 50% cover) No phase III (>50%)
	Sagebrush extent	>85% sagebrush land cover
LEK (Seasonal Use Period: March 1 to May 15)¹		
Cover	Availability of sagebrush cover	Has adjacent sagebrush cover
Security ³	Pinyon or juniper cover	<3% landscape cover within .6 mile of leks
	Proximity of tall structures ⁴	Use Manier et al. 2014, Conservation Buffer Distance Estimates for GRSG-A Review; preference is 3 miles
NESTING (Seasonal Use Period: April 1 to June 30)¹		
Cover	Sagebrush cover	>20%
	Residual and live perennial grass cover (such as native bunchgrasses)	>10% if shrub cover is <25% ⁵
	Annual grass cover	<5%
	Total shrub cover	>30%
	Perennial grass height (includes residual grasses)	Provide overhead and lateral concealment from predators
Security ²	Proximity of tall structures ⁴ (3 feet [1 meter] above shrub)	Use Manier et al. 2014, Conservation Buffer Distance Estimates for GRSG-A Review; preference is 3 miles

Attribute	Indicators	Desired Condition (Habitat Objectives)
<i>BROOD-REARING/SUMMER (Seasonal Use Period: May 15 to September 15; Early: May 15 to June 15; Late: June 15 to September 15)¹</i>		
<i>UPLAND HABITATS</i>		
Cover	Sagebrush cover	10 to 25%
	Perennial grass cover and forbs	>15% combined perennial grass and forb cover
	Deep rooted perennial bunchgrass (within 522 feet [200 meters] of riparian areas and wet meadows)	7 inches ^{6,7}
Cover and food	Perennial forb cover	>5% arid >15% mesic
<i>RIPARIAN/MEADOW HABITATS</i>		
Cover and food	Riparian areas/meadows	PFC
Security	Upland and riparian perennial forb availability and understory species richness	Preferred forbs are common with several species present ⁶ High species richness (all plants)
	Riparian area/meadow interspersion with adjacent sagebrush	Has adjacent sagebrush cover
<i>WINTER (Seasonal Use Period: November 1 to February 28)¹</i>		
Cover and Food	Sagebrush cover	>10% above snow depth
	Sagebrush height	>9.8 inches above snow depth

¹ Any one single habitat indicator does not define whether the habitat objective is or is not met. Instead, the preponderance of evidence from all indicators within that seasonal habitat period must be considered when assessing Greater Sage-Grouse habitat objectives.

² Upland standards are based on indicators for cover, including litter, live vegetation, and rock, appropriate to the ecological potential of the site.

³ Applicable to Phase I and Phase II pinyon and/or juniper.

⁴ Does not include fences.

⁵ In addition, if upland rangeland health standards are being met.

⁶ Relative to ecological site potential.

⁷ In drought years, 4-inch perennial bunchgrass height with greater than 20 percent measurements exceeding 5 inches in dry years.

N.6 COMPENSATORY MITIGATION

The proponent has proposed a robust suite of Design Features into their Proposed Action, to incorporate Design Features and Management Decisions from the 2015 and 2019 GRSG Amendments. This EIS presents two distinct options for implementing compensatory mitigation to offset residual impacts to greater sage-grouse habitat under the selected alternative. LNC’s options for compensatory mitigation include purchasing credits under the State of Nevada’s CCS or through conducting habitat enhancement efforts in coordination with BLM and NDOW at offsite parcels located near the Project. Discussion of the compensatory mitigation options is presented in the following subsections.

N.6.1 Nevada Conservation Credit System

LNC is currently working with the CCS to offset impacts of proposed project surface disturbance (GRSG Amendment, Mitigation MD MIT1). The final number of credits purchased would be determined based on proximity to the Project. The SETT has completed a formal quality assurance review of the results of the CCS Habitat Quantification Tool (HQT) (SWCA 2019) for the Proposed Action. The current Project would yield a total number of 1,375 term debits, and 0 permanent debits, to fully offset the anticipated temporary impacts during the life of the Project. The current calculation relies on the field data collected in 2018 by SWCA, which included sampling 113 transects in 15 sample units across approximately 49,165 acres (SWCA 2019). The applicant is currently working with the SETT to determine if additional HQT analysis would be required for the Project’s Exploration Plan.

Mitigation pursued by the applicant through the CCS program is used to offset impacts to GRSG and sagebrush habitat only, and is not intended to offset effects to other resources, such as impacts to riparian and water resources, or impacts from noise.

Table N.6. Range of Temporary Conservation Credit Obligations for Alternative A

Area of Credit Purchase	Base Credit Obligation	Proximity Ratio Multiplier	Adjusted Credit Obligation
Lone Willow PMU ¹	1,375	1.0	1,375
Lone Willow BSU ²	1,375	1.05	1,444.75
Northern Great Basin WAFWA Management Zone ³	1,375	1.10	1,512.50
Different WAFWA Management Zone ⁴	1,375	1.15	1,581.25

¹ Credit and debit sites located within a single population (same PMU, even if in different WAFWA Management Zones)

² Credit and debit sites located within a regional population (same BSU, even if in different WAFWA Management Zones)

³ Credit and debit sites connected through population dispersal (same WAFWA Management Zone)

⁴ No population connection between credit and debit sites (different WAFWA Management Zone)

N.6.2 Offsite Habitat Enhancement of Greater Sage-Grouse Habitat

The second compensatory mitigation option under consideration to offset residual impacts to greater sage-grouse habitat under the Proposed Action consists of developing a mitigation plan in coordination with the CCS SETT, NDOW, and the BLM and subject to SEC review and approval, to conduct habitat enhancement efforts in the area of the Thacker Pass Mine. Under this option, LNC would fund habitat enhancements on selected parcels of greater sage-grouse habitat that have been degraded by recent wildfire and other anthropogenic disturbances. Habitat enhancements would be conducted in coordination with BLM and NDOW and could include noxious weed treatments, pinon-juniper removal, water developments, sagebrush and forb seeding, and wildfire prevention fuel breaks.

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